Warrington Borough Council

Evaluation of Feasibility Studies
Stockton Heath Primary School

education architects

Lathams

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Section 1: Executive Summary

1. Latham Architects were appointed by Warrington Borough Council to undertake an independent evaluation of the feasibility studies undertaken for Stockton Heath Primary School. The studies were undertaken between April and September 2005, with a report submitted to the Executive Board of the Council in September 2005. There are two studies: one to remodel and extend the existing building, the second a new build replacement.

2. The brief, which applies to both studies, was prepared in April 2005 and is highly detailed. The level of detail is significantly in excess of that which would be expected for a feasibility study. There are weaknesses with no reference to the LEA strategic vision and only a short section on the School educational vision. However, there is evidence that these were considered in the period prior to the preparation of the brief and were the basis for it.

3. The accommodation schedule and areas given in the brief are based on DfES guidelines published in Building Bulletin 99.

4. Both studies have been developed to a significant level of detail, generally considering all appropriate technical issues for a building project. Both studies have been taken to a level equivalent to RIBA Stage C outline proposals. A feasibility study would generally only cover RIBA Stage A and B.

5. Both studies exceed the building area detailed in the brief, but the limitations of the site and Town Planning restrictions have influenced the solutions. The limitations of the budget suggest that area reductions are the main mechanism to achieve cost savings if necessary.

6. The budget for the project is challenging given the phasing implications of implementation of either option. In trying to achieve affordable schemes the level of specification has been reduced to the minimum considered acceptable. In the case of the remodel and extend option, repair/upgrade works

to the existing building have possibly been cut too far, with a view to their implementation at a later date. This is a significant risk and results in a failure to address poor environmental conditions in the existing building. Allowing for these savings the remodel and extend option is still significantly the more expensive.

7. Both feasibility studies have responded to the brief and subsequent design development meetings with the School and other stakeholders, but only the new build option is shown to be affordable. In both cases the level of detail is greater than would be expected of a feasibility study and suitable for informed decisions.

Section 2: The Brief

2.1 Background

It is understood that Warrington Borough Council had identified Stockton Heath Primary School as one of two schools in the Authority in the poorest condition, based on the Asset Management Plan. An application was submitted for DfES funding in 2003, but was only approved at the end of November 2004. At that time the proposal was for a replacement school. The briefing document was prepared in April 2005 for both new build and the extend and remodel options.

2.2 LEA and School Vision

There is no statement of LEA vision for primary education in general to set an overall framework. A reference to the 'Review of Primary School Provision' issued in autumn 2004 should have been included as this includes the LEA strategic vision and education development plan (EDP).

The briefing document does include a statement of the School's vision. However it is a very general statement applicable to any learning environment. The School did prepare a statement of aims and vision that should have been incorporated. The brief implies that various issues had been discussed and considered, but are not identified. Details of meetings and visits prior to formulation of the brief indicate the background.

DfES Building Bulletin 99 identifies four elements for consideration in the vision:

- educational performance
- staff satisfaction
- pupil satisfaction
- community involvement

Ideally the School should amplify the framework set by the LEA in the EDP and describe its specific approach to implementation.

The vision contains a brief statement on school organisation, management, extended school facilities and wider community use. There is no reference to the existing 'Little Lot' private nursery or the breakfast and after school club 'Stay and Play'. It is also understood that the buildings and grounds are used during holidays. Some of these issues are mentioned elsewhere but would be expected in the vision

The vision of the School to transform education provision and be at the heart of the local community should be central to the brief and leads to the methods for its achievement.

2.3 Key Design Requirements

The brief refers to Building Bulletin 99 as being the main reference document, and makes reference to:

- Flexibility and adaptability
- Access and inclusion
- Safety and security
- Sustainability and environmental performance
- Extended school facilities and community use
- Organisation and management
- Furniture and equipment

These issues are also considered key in the Building Bulletin. However in dealing with these issues the brief is considered deficient in the following respects:

- There is no description of the organisation of the School other than by room relationships defined on room data sheets. This suggests organisation is by key stage.
- There is no discussion of teaching methods that may require different types and sizes of spaces.
- There is no discussion of the approach to the use of ICT and how this may affect or supplement teaching methods. The ICT provision is detailed on the room data sheets.
- Community use and is described only in the potential use of the small hall. The brief includes for a nursery class, but does not describe the management and security issues for this private provision. Equally the management and security issues relating to the existing private 'wrap around care' are not mentioned.

- The use of the building and site outside normal school hours and during holiday periods, if at all, needs inclusion.

2.4 Accommodation Requirements

The accommodation schedule included in the brief is generally in line with the guidance in Building Bulletin 99 with the additional allowance for the nursery and SEN provision. There is also an allowance for a second small hall that may have community use. The same accommodation schedule applies to both options.

The accommodation schedule indicates a net to gross floor area of approximately 64%, which is low. However, the schedule does not divide net and non-net areas in the same way as Building Bulletin 99; as a result the net area appears to be incorrectly totalled resulting in a corrected net to gross of 68.5%. This is closer to the recommended figure of 70% efficiency.

Detailed room data sheets supplement the accommodation schedule. they are highly prescriptive and inappropriate to a typical RIBA stage A & B feasibility study. However, because of the anticipated timescale for the project, the detailed brief has been prepared in anticipation of detailed design.

2.5 Conclusion

A feasibility study brief for a school should be a high level document, aimed at meeting the educational challenges of the 21st Century. It should define the vision taking account of national aims and local needs for the particular school, and describe the organisational and management strategy. It will then provide freedom for the development of inspiring learning environments.

The brief prepared was overly detailed for a feasibility study because it was to serve a dual purpose. Although this is understandable it has tended to lead to relatively traditional solutions without the clarity that they are the result of local educational needs.

Section 3: Feasibility Designs

3.1 Assessment Method

The two feasibility designs have been assessed by reference to the brief, Building Bulletins 95 and 99 and by using the criteria defined in the Design Quality Indicators for Schools, developed jointly by CIC and DfES. The DQI's accord with the principles of good design as defined by CABE.

The criteria are:

- Functionality : Access
  Space
  Uses
- Build Quality : Performance
  Engineering Services
  Construction
- Impact : The School in its Community
  Within the School
  Form and Materials
  Character and Innovation

In addition a comparison is made with the principles embodied in the primary exemplar designs developed for the Schools for the Future programme.

3.2 Feasibility Design Process

Both studies have been developed to a significant level of detail, generally considering all appropriate technical issues for a building project. Both studies have been taken to a level equivalent to RIBA Stage C outline proposals, with the new build option subsequently further developed for the Planning Application. It is only the feasibility studies that are considered, not the developed scheme, and therefore some of the comments may have been addressed during design development. A feasibility study would generally only cover RIBA Stage A and B.

3.3 Extend and Remodel Existing

- The existing building being located near the centre of the site results in a disjointed site with a series of play areas making supervision difficult.
- Pupil access is from three directions also creating security and safety concerns, in one instance coinciding with service vehicles.
- The existing building has no sense of arrival and the main entrance is difficult to identify. It is unwelcoming and provides a barrier to inclusion.
- The proposed new main entrance although more identifiable is through the car park and does not provide a sense of arrival. Vehicles and pedestrian share the same access, although a separate pedestrian access to the nursery is adjacent.
- There is little sense of place at the entrance, celebrating learning and providing inspiration. The reception area leads to a space with little natural light and dominated by toilets. The Head Teacher's office is accessed past the toilets and next to the lift and stairs.
- The School currently has displays of pupils' work which could be utilised to demonstrate to visitors their achievements, if in a prominent location.
- Although the BREEAM assessment indicates the need for wildlife habitat and cycle storage, with an allowance made in the cost plan, both are not shown on the site plan.
- The inside/outside relationships are poor with little landscaping other than the nursery garden offering opportunities for the outside classroom. The Roman Road as part of the history of the site, if acknowledged in the landscaping could provide such an opportunity.
- The existing large windows provide good daylight, but also contribute to the poor temperature control in the building. They also have high cills making internal/external visual links difficult for small children.
- The initial impression of the proposed building plan is of inefficiency and this is reflected in the net to gross area calculation at 55%. This is only in part due to the existing building.

- The total gross floor area of the proposal is 3017m² compared to the design brief gross area of 2471m². A more efficient plan should be possible, but would probably challenge some planning limitations on separation of buildings, and may have impact on maintaining school operation during construction.
- The majority of the existing teaching accommodation is small by current standards and not easily adaptable. Changes have resulted in some rooms being too large. The small additions at the rear of the school to enlarge four classrooms have a high cost/m².
- The plan arrangement does not suggest any new teaching methods or adaptability/flexibility for the future. Cost savings have resulted in the omission of elements which would assist adaptability.
- The library and ICT provision are both shut away, rather than be the visible heart of the school and fully integrated. However, this is understood to be a School requirement.
- The extent to which the issues identified in the Asset Management Plan are addressed in the proposals is unclear. Savings were made, reducing the scope of work to the roof and windows. It is also unclear if the poor environmental conditions (cold in winter, overheating in summer, poor ventilation) are addressed. There are therefore concerns that the budget limitations are affecting the performance of the solution and not resolving the problems that currently exist with the building.
- Significant changes are proposed to the existing toilet layouts including a new provision in the centre of the existing school, potentially expensive.
- Although a preliminary BREEAM assessment indicates that a very good rating could be achieved. The proposals would require further development to demonstrate this sustainability rating will be achieved.

3.4 New Build

- The position of the new building on the site is primarily determined by the need to retain the existing building in use while the new one is built.
- There is good separation of pedestrian and vehicle access.
- The single zone for hard play provides good security and ability to supervise the space.

- The loss of the two covered shelters is detrimental as they provide protection both from rain and sun. However this is understood to be a School reqest due to antisocial use outside School hours.
- Although the BREEAM assessment indicates the need for wildlife habitat and cycle storage with an allowance in the cost plan, both are not shown on the site plan.
- At ground floor there are links between inside and out, but there is little landscaping offering opportunities for the outside classroom.
- The initial impression of the proposed building plan is also of inefficiency and this is reflected in the net to gross area calculation at 63%. The scheme is typified by featureless long straight corridors. This is in part explained by the site limitations, retaining the existing building during construction.
- The total gross floor area of the proposal is 2788m² compared to the design brief gross area of 2471m².
- There is little sense of arrival celebrating learning and providing inspiration. To a lesser degree than the refurbishment option, the entrance is the visible location for toilets and stores.
- The selection of a steel frame is beneficial in build time and adaptability. However, movable partitions have been omitted as a cost saving, reducing flexibility.
- The library and ICT provision are both shut away, rather than be the visible heart of the school. However, this is understood to be a School requirement.
- One cost plan indicates driven pile foundation, but this has been changed later. Driven piles would be inappropriate due to noise affecting both the existing school and residents. However there is noise associated with bored piles that may be disruptive to teaching. It is understood that alternative solutions are included in developed proposals.
- Although a preliminary BREEAM assessment indicates that a very good rating could be achieved. The proposals would require further development to demonstrate this sustainability rating will be achieved. The daylighting appears poor, and will require further design development.
- The inclusion of a small hall, identified for shared community use, is not well sited to provide secure separation from the main body of the school. The arrangement would only be appropriate for use outside school hours.

- The existence of the Roman Road across the site is not acknowledged in the building and/or the landscaping. The main entrance could have been on the axis, designed as an ‘atrium’ for school displays and a ‘forum’ for social interaction, leading to landscaping features to reflect the history of the site and provide a unique long term learning resource. It could incorporate a small ‘amphitheatre’ area for outdoor performance and interaction. This history is not apparent in the proposals.

3.5 Conclusion

The feasibility studies are an early stage of the design process but set the framework for the project. Despite the due diligence of the process undertaken, the limitations of the budget, time, site and brief requirements appear to have constrained radical thinking and the options are considered currently not to demonstrate the national aspiration of inspiring learning environments. Further development of the options should keep this aspiration in mind.

Both options are currently over the area in the brief, and although the new build option is considered affordable the savings already included leave area reduction as the only option if tenders exceed the estimates. This is high risk as redesign at that point will cause delay, disruption and further cost. It would be better to challenge the constraints at the early stage to ensure affordable/achievable solutions.

Section 4: Cost Plans

4.1 Background

The combination of Targeted Capital Funding from the DfES and Devolved Formula Capital resulted in a total project fund of £3.9m at the time of approval in November 2004. Additional funding to allow the inclusion of both nursery provision and wrap around childcare delivered by Private Sector Partners brought the total project fund to £4.3m.

Cost estimates for the two feasibility options were first prepared in June 2005, and uplifted to reflect a start on site in the third quarter 2006.

4.2 General Observations

- Quantities have not been verified and are assumed to be representative of the work, required.
- Rates for certain elemental work are considered keen, at the low end of industry norms.
- The £100,000 provisional sum included is understood to be a project risk contingency allowance.
- There are a few anomalies and minor errors in the computation of the cost. In general these are insignificant.
- The Asset Management Plan (AMP) is three years old, but within the required five year review cycle.
- Without a current condition surveythere is concern whether the cost plan addresses all current defects/ repairs and refurbishment requirements particularly as some of the reductions to bring costs nearer to budget limits affect the scope of such works. This builds up problems for the future, but it should also be noted that the funding application resulted from the poor condition of the existing building.
- Savings on the schemes have been partly achieved by reducing the “rates” for the works in question with an acknowledged reduction in specification.
- The confined site, H&S requirements and noise restrictions will severely affect the constructional methods and timings and as such will have a major impact on the contractors programming and preliminaries. This

has been considered through early discussions with Contractors to arrive at realistic budget figures.

- The DfES "Information on Costs and Performance Data April 2003'' was considered and used as a "database" alongside our own cost library derived from recently completed primary school new build and refurbishment projects. The 2003 DfES data is the most up to date information available but has been uplifted to current prices.

4.3 Extend and Remodel Existing

The summary of total project cost is as follows:

1. Refurb & Extend existing school	£4,017,720
2. Demolish existing temporary buildings	£ 36,225
3. Demolish & rebuild existing boundary wall	£ 10,500
4. Loose furniture, IT, Car parking & removals	£ 105,000
5. Hire of mobile classrooms for phase 1&2	£ 344,400
6. Professional fees	£ 449,528
Total cost	£4,963,373

The building cost (1 above) was analysed in detail.

The cost/m² of the new build extension is approximately £1297. Bearing in mind the substructure "abnormal" the cost is considered at the low end of industry norms. The cost/m² for the remodelling, refurbishment and repairs is approximately £974, this has in part been achieved by reducing the quantity of repair work. There has not been a full intrusive survey so this is a potential risk.

The site works surfacing is limited to tarmac and the all weather pitch, with an allowance for a habitat area. The estimate for the 4m ball-stop fencing and gate provisions appear tight. However, this is a small element in the total cost.

Again because of the major extent of the refurbishing and repairs to be completed the 5% contingency although an average allowance may be optimistic to deal with the usual "unknown" conditions that arise in such circumstances. Particularly as significant elements of the repair work have been deliberately deferred to try to achieve a financially viable option.

4.4 New Build Option

These two options are for similar buildings option ‘A’ being a load bearing masonry structure and trench fill foundations as against the steel frame and piled foundations to option ‘B’. The summary of total project costs for each, is as follows:

Option A

1. Build new school in loadbearing masonry	£ 3,578,610
2. Demolish existing school & temporary buildings	£ 160.125
3. Demolish & rebuild existing boundary wall	£ 10,500
4. Loose furniture, IY, Car parking & removals	£ 105,000
5. Hire of mobile classrooms for phase 1 & 2	£ 126,000
6. Professional fees	£ 346,429
Total cost	£ 4,326,664

Option B

1. Build new school in loadbearing masonry	£ 3,777,609
2. Demolish existing school & temporary buildings	£ 160.125
3. Demolish & rebuild existing boundary wall	£ 10,500
4. Loose furniture, IY, Car parking & removals	£ 105,000
5. Hire of mobile classrooms for phase 1 & 2	£ 126,000
6. Professional fees	£ 364,817
Total cost	£ 4,544.051

For the new build cost (1 above) this gives cost/m² of £1134 (Option A and £1207 (Option B).

These costs/m², again taking into consideration the two storey building proposal, the considerable “abnormal” foundation elements and the other comments made in section 4.2, these are at the low end of industry norms and will be much dependent on market conditions in the locality and selection of suitable contractors at the time of tender.

4.5 Conclusion

As the various cost estimates are considered to be at the lower end of industry norms, having already undergone scrutiny and savings exercises should tenders exceed pre-set cost budgets there will be very little scope for further reductions on the design and quality leaving area reduction as the only option. At the early feasibility stage this is a significant client risk, and is acknowledged.

Section 5: Programme

5.1 Extend and Remodel Existing

The proposed phasing of the works follows a logical route given the nature of the proposal. The construction periods allowed in the programme generally appear reasonable, although the demolition and external works period at seven months may be excessive. However this would provide some float as there are unknowns associated with the work to the existing building.

5.2 New Build

The proposed phasing of the works follows a logical route given the nature of the proposal. The construction periods allowed in the programme generally appear reasonable. The demolition and external works period is shown at seven months, the same for the alternative proposal. There is more demolition involved as it includes the existing building, where it is suggested some features may be retained for inclusion in the landscaping. This will require care and may extend the period required. However the shorter overall period may be able to accommodate some delay.

5.3 General Observations

The final BREEAM assessment must be submitted to BRE before 10th November 2007 to meet the legislation criteria. The current progress suggests this will not be achieved, which is likely to mean more onerous targets would apply, being those applicable at the time.

It should be noted that the timescale for the project is now significantly delayed. The cost implications of the delay cannot be determined until the full extent is established.

Section 6: Other Considerations

6.1 Risk Management

All projects are inherently risky because they are unique, complex, based on assumptions and performed by people. In this context risk is defined as:

'an uncertain event or set of circumstances that, should it occur, will have an affect on achievement of one or more project objectives'.

A risk register would have been beneficial in recording potential project risks and their impact in terms of quality, time and cost. This should be as exhaustive a list as possible with contribution from all members of the project team. Once the register is compiled and the impact of each assessed then a strategy for their elimination, reduction or management can be determined.

For a project like Stockton Heath primary risks would include.

- Ground conditions
- Archaeological investigations
- Condition of existing building
- Adaptability of existing building
- Stakeholder management
- Learning curve for new regulatory standards
- Failure to obtain statutory approval

This is not an exhaustive list but illustrates some of the risks that need to be managed. Appropriate attention must then be given particularly to those, which have the greatest impact.

It is understood that although design and project risks were considered there was no formal risk register. As a result the financial and time implications of some decision have not always been identified. For example a reduction in the repair work to the existing building has resulted in a saving, but if on opening up the costs are unavoidable the impact is not quantified. A provisional sum was included in the estimates for risk but being undefined it is not possible to tell if it is appropriate for all unresolved risks.

Appendix A: Documents supplied for Review

- DfES letter of 15th December 2004 approving funding
- Asset Management Survey for year 2003
- Brief for the Works
- An Archaeological Evaluation
- Site Investigation Report
- Asbestos Survey Report
- Topographical and Building Survey drawings
- DDA Assessment of Existing Building
- English Heritage Report on existing building
- Feasibility Study drawings for Extend/Refurb Option
- Feasibility Study drawings for New Build Option
- Structural Report on North Boundary Wall
- Structural Report on New Build Option
- Structural Report on Refurbishment Option
- Feasibility Study Report dated November 2005
- Overview of mechanical and electrical services existing and proposed
- Cost plans for Extend/Refurb Option
- Cost plans for New Build Option
- BREEAM Pre-Assessment for both options
- Presentation drawings for existing building and both options, including phasing of works
- Preliminary CDM risk assessment by Planning Supervisor
- Notes of preliminary discussion with Planning Officers May 2005
- Notes of various consultation meetings
- Executive Board Report and Minutes dated September 2005
- Planning Design Statement dated Jan 2006
- Development Control Committee Report 20th March 2006
- Various letters/statements of objections and responses
- Various press statements and extracts of press reports