Proposed landscape

- Hay meadows
- Grass headlands
- Intensive pasture
- Informal social / recreation area
- Formal grass
- Hedgerows
- Trees
- Mixed tree and shrub
- Ornamental planting
- Attenuation pond
- Swale
- Macadam surface
- Surface dressed macadam
- Paving
- Reinforced stone grass access
- Artificial pitches

NEW GEORGE WARD SCHOOL

FIGURE 12.0
Landscape Masterplan

Scale: NTS

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APPENDIX 3

APPENDIX 5

Statement of Need

for

Proposed New George Ward School

April 2007

Document Ref: SoN Rev 02

Proposed New George Ward School

Statement of Need

1.0 Purpose of document

1.1 The purpose of this document is to set out the rationale for the proposed development of a replacement George Ward School and the process of selecting the replacement site at Woolmore Farm, Melksham.

2.0 Background

2.1 Building Schools for the Future is the Governement's new approach to capital investment in schools. The intention of the programme is to promote a step-change in the quality of education provision and to address decades of underinvestment in school buildings. The BSF programme will deliver substantial rebuilds and refurbishments of most schools within an Authority, with Authorities being prioritised in a number of waves of funding.

2.2 As part of the BSF programme, a number of Authorities who fall into later waves of the BSF programme have been offered "One School Pathfinders". These pathfinder projects represent the opportunity to re-build one school in the county as a "down-payment" on funding to be received in later years, in Wiltshire's case 2016 or later.

2.3 The stated timescale attached to the funding is for the school to open by September 2009.

3.0 Shortlisting process

3.1 A series of evaluation criteria were established to enable a shortlist of three schools within the County to be identified for further examination. The criteria were

- Condition of existing accommodation
- Suitability of existing accommodation
- Attainment of school
- Proportion of the schools buildings considered to require wholesale replacement.

3.2 The evaluation process resulted in a shortlist of the following schools

- John of Gaunt School, Trowbridge
- St Edmunds CE Girls School & Wyvern College, Laverstock, Salisbury
- George Ward School, Melksham

4.0 Site Evaluation Process

4.1 For each of the above schools, feasibility studies were carried out to establish which school could best achieve the requirements of the 'One School Pathfinder' programme, particularly given the timescale constraint for re-building of the school ready for the September 2009 intake.

4.2 There were two key considerations underpinning each feasibility study. The first was the fact that funding available under the Governments Pathfinder programme is insufficient to provide the appropriate level of school facilities. Consequently, in each case, the studies necessarily considered options for the disposal of surplus school land to allow either re-building on the existing school site or, if this was not possible, its relocation to a new site. The second is that the size of site recommended by the DFES as necessary to meet the school's requirements ranges between 9 and 10.5 hectares, for the selected schools. Other than existing school sites, there are no available urban sites of a scale large enough to meet these recommended size guidelines. Furthermore, greenfield sites that are sufficiently well related to the adjacent towns are generally under option for development and not available for school use.

John of Gaunt School, Trowbridge

4.3 Whilst there is sufficient open land available within the existing school site to allow for construction of the necessary new school buildings, the amount of surplus land then available for redevelopment is insufficient to generate a large enough return to provide for the gap in BSF funding. A search process to identify possible new sites around Trowbridge capable of accommodating a replacement school in order to allow comprehensive redevelopment of the school identified a number of potential greenfield sites, but none that were deliverable within the timescale or funding constraints..

St Edmunds CE Girls School & Wyvern College, Laverstock, Salisbury

4.4 There is insufficient open land available at this school site to allow for construction of the necessary new school buildings. An alternative programme of phased redevelopment within the existing school complex was also considered. However, this option would significantly increase the costs and therefore the requirement for yet more gap funding for which there is no surplus land in any event. The search process for possible new sites to allow for redevelopment of the existing site did identify a possible County Council owned site. However this lies close to Old Sarum Scheduled Ancient Monument and was rejected on the basis of the significant adverse impact that development of a new school would have on the setting of the Monument, alongside other significant planning issues.

George Ward School, Melksham

4.5 This is currently a 'split site' with some playing fields located on land within an area of floodplain off Dunch Lane. The feasibility study established that the land within the floodplain together with the open playing field land on the main school site would have provided sufficient space to meet the DfES recommended size guidelines and allow for the redevelopment and sale of the area occupied by the existing school buildings. However, the study concluded the return from the sale of this limited area of surplus land would be insufficient to meet the gap in funding. Moreover, apart from difficulties associated with the resulting split site, it would have failed to address the fact that the existing school is currently poorly located in relation to its catchment (see Appendix A). This poor relationship is set to diminish further with development of the large urban extension at Clackers Brook to the east of the town. A further consideration, was the disruption to the school's operations, if the new school were constructed in such close

proximity to the existing operational school. This would lead to off-site provision of school recreational facilities, and ongoing disruption to lessons and exams, over a two year period. This would inevitably impact on the performance students, at a critical point in their performance improvement programme.

4.6 Consequently, a search was undertaken to identify possible options for a new school site to replace that of the existing George Ward School. This search process, which is covered within the following section, resulted in the identification of the site at Woolmore Farm and the selection of George Ward School as Wiltshire's 'One School Pathfinder' under the BSF programme.

5.0 Relocation Options at Melksham

5.1 As at Trowbridge and Laverstock, there are no available urban brownfield sites at Melksham of sufficient size to accommodate a school large enough to meet the DfES recommended guidelines. It is due to the lack of such options that a greenfield urban extension, allocated within the adopted West Wiltshire Local Plan at Clackers Brook, was necessary to meet future housing requirements. The reasoned justification associated with the allocation of the Clackers Brook site in the adopted Local Plan identifies that land to the west of the A350 and railway line is constrained by high grade agricultural land and poor connectivity with the town. These constraints equally apply to possible relocation options for the school and therefore restricted possible options for its relocation to the eastern side of the town.

5.2 The Clackers Brook site covers much of the north-eastern flank of the town. Of the remainder, most is under option to prospective developers and could not be acquired and developed within the timescale necessary for the September 2009 intake. However, the County Council identified two potential areas of land – the Christie Miller Sports Field and Woolmore Farm.

5.3 The Christie Miller site is allocated for employment development within the adopted Local Plan and is surrounded by existing and proposed light industrial development. Consequently, its use as a site for the replacement school raises issues of amenity and safety of pupils travelling to and from the school. Furthermore, in order to relocate the school to this site it would be necessary to fund relocation of the existing sports recreation facilities from the site and for which no feasible site options were identified. Conversely, Woolmore Farm comprises open farmland on the edge of the built-up area near Bowerhill, is of sufficient size to accommodate the new school and is not under option for development. It therefore offered the greatest potential for relocation of the school, subject to an assessment of corresponding planning policy.

6.0 Woolmore Farm

6.1 Woolmore Farm adjoins the edge of the built-up area but falls within Policy C1 of the adopted West Wiltshire District Local Plan. This policy seeks generally to restrict development although does allow for proposals where there is an overriding justification of national importance or benefit to the local community. In respect of these policy provisions, there are important material considerations that weigh in favour of the relocation proposal.

6.2 The BSF Pathfinder programme is part of a key national Government objective to transform the quality of education provision and address longstanding underinvestment in school buildings. As is clear from the process and constraints outlined above, the programme's objectives cannot be achieved in Wiltshire without a requirement for new greenfield land and a need to override the planning policy constraints that this involves.

6.3 Furthermore, the relocation of the school will result in the realisation of significant community benefits since it offers a whole range of facilities for community use out of school hours. The range and quality of these facilities significantly exceeds those available at the existing George Ward School.

6.4 The site at Woolmore Farm also offers the opportunity to improve the balance of sustainable transport choices since it is more appropriately located within its catchment area and the forthcoming urban expansion at Clackers Brook. Consequently, the school travel plan indicates the ability to achieve the following improved targets:

- Increase in pupils walking to school – from 44% to 54%;
- Increase in pupils cycling to school – from 8% to 10%;
- Increase in staff cycling from 6% to 15%, and walking from 5% to 8%.

7.0 Conclusion

7.1 The proposed implementation of the Government's BSF programme within Wiltshire follows a logical iterative process that has resulted in identification of the George Ward School at Melksham as Wiltshire's 'One School Pathfinder' under the BSF programme. The site evaluation process undertaken objectively considered all possible options for provision of the new school buildings. However, due to the need to generate gap funding and the lack of urban sites of sufficient scale, a new greenfield site is required to fulfil the BSF programme's timescale requirements. Whilst the proposed replacement site at Woolmore Farm falls within an area of countryside policy restraint, it offers significant benefits that mitigate against such concerns and weigh in favour of the proposal.

A1 General Energy Issues

Due to the targets imposed by the approved document Part L, it has become necessary to look not only at the mechanical and electrical plant for energy savings, but also at the building itself.

To look solely at the mechanical and electrical equipment to obtain the necessary improvements would be highly cost ineffective, and would probably need the introduction of renewable technologies to meet the requirements.

Instead, a balanced approach should be used, where early stage building decisions on shape, orientation etc, are recognised as being as important as specifying high efficiency equipment later in design.

It is becoming increasingly important that architects are involved with energy reduction at the early stage of the design process. The most notable contributions are through minimising the U – Values beyond the minimum required quantity, and to increase air tightness beyond its minimum requirements. Both in order to minimise heat loss from the building.

In principle, the passive design approach reaps more reliable energy reductions than adding ever more complex mechanical systems with features like heat recovery. Adding mechanical systems tends to have diminishing returns because additional high-grade energy is generally needed to yield the recovered lower-grade energy. On the economics side, mechanical systems tend to be a significant initial capital cost, but additionally also have limited life compared with the building fabric, resulting in continued financial and energy consumption. In building whole life cycle terms, investing in enhanced passive building envelope performance to deliver comfortable indoor comfort tends to result in significantly reduced whole life cost and whole life environmental impact.

Minimising the whole life environmental impact is also served by avoiding the need for periodic refurbishment / replacement intensive resource input to keep the provision of a useful building. The principle of 'Long life, loose fit' is important in this respect. The aim is to allow evolving uses and changes to building function without significant changes to the building fabric and systems. This often needs careful thought because many clients' requirements are closely related to perceived immediate building use needs and have to be reviewed against long-term use. A flexible building is normally one that can be adapted easily to a variety of ways of use, without the need for significant change or system reconfiguration. In simple terms if the basic building form and structure has twice the normal design life, it also has something in the order of half the embodied energy.

A2 Strategy Adopted

In order to comply with Part L2A (2006) we have adopted a strategy of Reducing energy usage and Re-using energy wherever possible.

We have reduced the energy requirement of the buildings by:

- Recommending highly insulating the floor, walls, windows and roofs;
- Recommending an above average level of air-tightness;
- Providing good levels of natural daylight;
- Providing sophisticated artificial lighting with occupancy sensors and daylight dimming;
- Specifying energy efficient fans, condensing boilers and plant items.

We will re-use waste energy by installing heat recovery on air handling units where practical.

A3 General Philosophy

Efficient use of energy is central to the school design: incorporating a well insulated building fabric; optimised design for daylight employing measures that enhance daylight penetration, such as clerestory windows; enhanced natural ventilation with stack effect; minimal use of mechanical ventilation; use of the thermal mass of the structure to achieve efficient heating and cooling; heating supplied by high efficiency gas boilers; energy efficient lighting; efficient control systems and zoning to achieve appropriate comfort levels.

These design measures will enable the schools to produce low CO2 emissions in operation. Minimising the need for refrigerant based mechanical cooling reduces maintenance and energy demands.

The building design makes maximum use of natural ventilation and passive cooling techniques to minimise the need for mechanical ventilation systems and air conditioning as far as possible. Certain areas will require the use of mechanical systems to achieve comfortable internal environments despite the background passive approach.

The BEMS system will collate all utilities metering. All utilities will be metered and sub-metered to allow true consumption to be allocated to plant items and users. This information will also be made available to staff and pupils via the school's intranet system.

A Building User Guide will be produced so that non-technical users can understand the operation and environmental performance of the building with a view to minimising energy use.

A4 Further Details

Natural Ventilation

Natural ventilation has enabled the elimination of fans, ductwork and air handling plant, with the associated cost, maintenance, energy consumption and replacement resource consumption.

Natural ventilation is generally better liked and more understood by occupants than mechanical ventilation. Further reductions in carbon emissions can be achieved if the heating is from a relatively low carbon intensity fuel like gas.

Natural ventilation has been considered appropriate for this school building due to the relatively quiet and pollutant free location.

By having exposed thermal mass, natural ventilation is further enhanced by storing useful thermal energy.

Passive Cooling using direct Thermal Mass

Passive cooling uses dense materials with high thermal capacity to store cooling until it is needed. It is exposed directly to the occupants as part of the room surfaces. Normally cool night ventilation is used as the cooling source. Generally uses normal building materials like concrete, brick and blockwork. Very cost effective for achieving a limited cooling capacity

Solar Shading

Windows will also be fitted with solar shaded glass on certain exposed facades to minimise the solar heat gain, but a balance will need to be reached between minimising solar gains and maximising daylight.

Variable Speed Motors

Varying the speed of mechanical ventilation fans to match ventilation demand can greatly reduce conventional fan power if appropriate controls and fans are used. For low energy buildings there is diminishing carbon

savings. Arguably it is best to reduce or eliminate the need for the fan in the first place. Same principles can be applied to pumps.

Ventilation Heat Reclaim

Recovers heat from the exhaust air and uses it to preheat fresh air. Only appropriate for mechanical ventilation systems. Care is needed to ensure that the year round added fan power with its high carbon intensity does not exceed the carbon savings of gas sourced heat with lower carbon intensity.

Condensing Boilers

Condensing boilers have superior energy efficiency over non-condensing boilers. This is achieved by re-circulating waste gasses in the flue, to reclaim potentially wasted energy.

Luminaire Daylight Auto-Control

This system switches off luminaires when there is adequate daylight. It is particularly effective when coupled with windows designed for daylighting and appropriate control sensors. Best when used with a gradually dimming luminaire, as the occupants are less likely to notice the switching. With electronic dimming, the energy saving (and hence carbon saving) is realised as soon as the luminaire begins to dim. The more the luminaire is dimmed, the greater the saving, and when the luminaire is switched off, there is no energy use.

Luminaire Occupancy Auto-Control

The system senses when the room is unoccupied, and automatically switches off the artificial lighting. Particularly useful in cellular rooms such as store rooms, and WC's. The risk of leaving the lights on in unoccupied cellular rooms is mitigated, and therefore a carbon saving is made.

Time-clock and Photocell Control

For external lighting, the combination of a time-clock and photocell ensures that the lights do not switch on before they are needed, which can save carbon. Also, the time-clock may be used to switch off the lighting after a given time (e.g. 2am when the lighting is unnecessary), and then switch them back on again when they are deemed necessary (say at 6am for example).

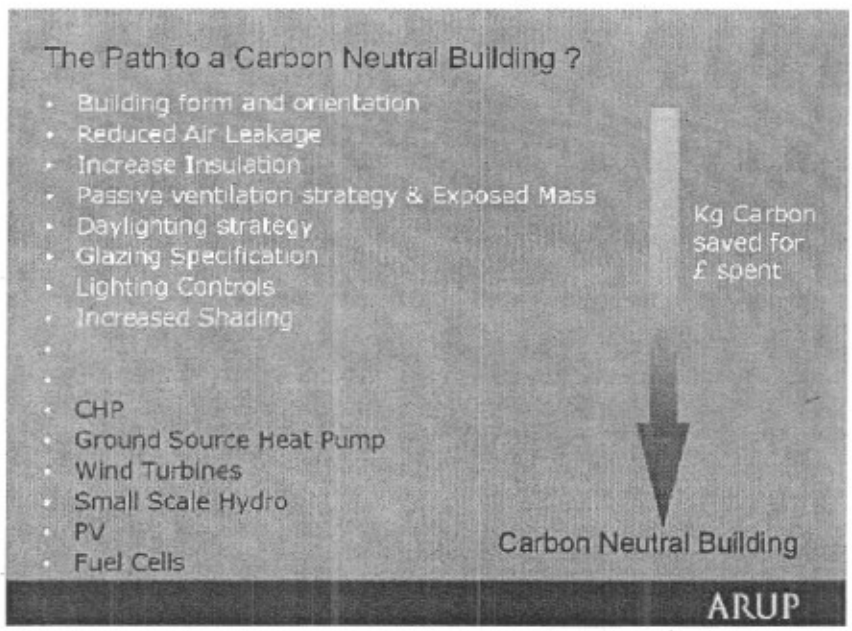

Figure 1. Relationship between Carbon Reduction versus Cost