

INVESTIGATION INTO THE CHOICE OF SINGLE OR MULTI-STOREY DESIGN SOLUTIONS FOR NEW-BUILD PRIMARY SCHOOLS AND THE IMPLICATIONS FOR THE QUALITY AND DELIVERY OF EDUCATION

To: Cabinet

Date: 5 July 2010

From: Executive Director: Children and Young People's Services (CYPS)

Electoral division(s): All County Council electoral divisions

Forward Plan ref: 2010/033 **Key decision:** Yes

Purpose: **To:**

- i) Inform Cabinet of the report and key findings from the research undertaken by the University of Cambridge into the choice of single or multi-storey design solutions for new build primary schools;
- ii) Consider these findings in relation to current County Council policy; and
- iii) Seek Cabinet's consideration and approval to a change to the County Council's current policy.

Recommendation: **Cabinet is asked to:**

- i) Note and comment on the findings from the research undertaken by the University of Cambridge into the choice of single or multi-storey design solutions for new build primary schools; and
- ii) Approve a change to the County Council's current policy which favours single storey primary schools to one where multi-storey schools would be provided, *where appropriate*, taking account of site constraints and the overall development context within which the school site is located.

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1. BACKGROUND

- 1.1 In September 2007, Cabinet endorsed a series of policy recommendations to inform future new school specifications set out in a report entitled *New Schools – Competition Arrangements, Policy and Decision- Making Process*. A policy area not covered was that of the storey height of primary schools.
- 1.2 In July 2009, Cabinet considered a report on *Primary School Site and Design Principles*. The report was prepared in response to challenges posed by the developers of major new housing sites to single storey design solutions. Developers often perceived single storey schools to be more costly to construct and to require larger sites to be provided as part of the Section 106 agreements. Cabinet was informed that analysis undertaken by officers indicated that the building cost of single storey and multi-storey schools was broadly neutral and that, for multi-storey schools, the overall site area required was only marginally less as the major components of a school's site area were not buildings related.

Cabinet also considered views expressed by officers from the Learning Directorate that single storey primary schools can offer better access to outside space; enable independent movement; are easier for children with special needs and enable better drop-off/collection of pupils. Cabinet's decision was to approve a policy that new primary schools should be single storey in line with existing/established practice on the grounds that they not only provided a successful teaching and learning environment, but that the changes sought by developers would not deliver the land and cost savings they were seeking.

- 1.3 Since these reports were considered, the pressure to provide sufficient school places to serve both the proposed housing growth and the existing population has increased significantly. The Council, in responding to this significant pressure on overall school capacity, has had to review some of its existing policies on the size of schools and access to playing fields and external areas where additional capacity is required in new and existing schools which operate from restricted sites. These policies were considered by the Children and Young People's Policy Development Group (CYP PDG) on 9 November 2009. As a result, some existing primary schools in Cambridgeshire will expand to provide 630 places and some of the new primary schools in the major development areas such as the North West fringe of Cambridge will be planned to be 630 places schools from the outset (the previous preferred maximum size for a primary school was 420 places). The Council has also recently concluded pre-application consultation for the design of a new primary school in Cambridge City in Gunhild Way, which is for a two-storey build. In addition, the expansion of Abbey Meadows Primary School to take the school from 2FE (form of entry) to 3FE, approved by Cabinet on 15 June 2010, will be through a two-storey extension.
- 1.4 The current economic climate has placed increased focus on the overall viability and sustainability of planned housing developments leading to significant pressure from developers to reduce the size of land parcels and capital funding allocated through Section 106 agreements. The combination

of circumstances requires the Council to revisit current policy in terms of single storey versus multi-storey buildings for new build primary schools.

2. RESEARCH BY THE UNIVERSITY OF CAMBRIDGE

- 2.1 To ensure the debate surrounding school design was not dominated by cost and site size alone, independent research was commissioned to better understand the effect of the building environment on the quality and delivery of education experienced by children and school staff. This also offered the benefit of providing a much needed credible evidence base for Council officers to inform negotiations with developers.
- 2.2 The University of Cambridge was commissioned to investigate the impact that storey heights for new build primary schools may have on the quality and delivery of education and to produce a report to inform the Council's future decision-making. The research took place between November 2009 and March 2010 and cost £6300, jointly funded with Cambridgeshire Horizons.
- 2.3 The scope of the research included:
- Literature Review of the history of school design
 - Key Informants Survey of current international experts within this field
 - Overview of emerging key themes and issues
 - Case studies of six schools:
 - Prior Western Primary School, Islington, London
 - Montessori School, Amsterdam
 - Willemsparkerschool, Amsterdam
 - Brook Community Primary School, Hackney, London
 - Argyle Primary School, Camden, London
 - Sharrow Nursery Infant and Junior School, Sheffield
 - Stakeholder presentation.
- 2.4 The culmination of this work was a detailed report presented to Members and other key stakeholders on the 29 March 2010. Stakeholders were asked to submit any further comments by 16 April 2010.

3. KEY FINDINGS FROM THE RESEARCH

- 3.1 The conclusion reached was that there was no overwhelming evidence in favour of either multi or single storey buildings and that each style presented a range of issues to be considered. The main findings are summarised below.

1) Pedagogy. The various recent reviews of the primary curriculum (The 'Rose' Review¹ and the Cambridge Primary Review²) have indicated the need

¹ The Rose Review of the Primary Curriculum, by Sir Jim Rose, reported in 2009. It focuses on the curriculum rather than the whole of primary education, however, it highlights important areas where pedagogy and assessment intersect with the curriculum. The review can be download at: <http://publications.dcsf.gov.uk/default.aspx?PageFunction=productdetails&PageMode=publications&ProductId=DCSF-00499-2009&> Since concluding the research, The Rose Review has been abandoned by the new coalition government.. All primary schools have been informed that a more subject based curriculum is favoured by the new government and local government has been told to postpone conferences. References to the 'new

to shift towards a greater variety of learning and teaching formats and emphasised cross-curricular learning and teaching and learning outside of the classroom. Building design can help to facilitate this especially in providing ample spaces for flexible use of in-between classrooms or learning bases. Multi-storey and single storey schools can equally be designed to allow for cooperative teaching strategies, the mixing of age groups and a variety of different sized spaces. The research shows that it is the actual habitation of buildings, the beliefs, values and principles held by adults and the extent to which children are viewed as having control over their environment which really makes a difference as opposed to whether they are designed over one level or a number of levels.

2) Size and Scale. The Council's demographic forecasts previously indicated that the new town of Northstowe will require six 420-place primary schools (updated information indicates that some of these schools will now provide up to 630 places). These are large schools with each requiring extended school facilities, staff offices and meeting rooms. The research has demonstrated that schools of this size can be designed on several storeys resulting in integrated communities of learners and teachers of all ages. The research has also shown that regard to scale is important in school interiors so that the sense of size is reduced through the use of integrated smaller group and individual working areas. In particular, scale can be brought to child-size through attention to domesticated areas that recognise children's need to be "hugged" by the building.

3) Ease of access to the outside. This can be facilitated or hindered through design at single or multi-storey levels. Newly built multi-storey schools pay particular attention to ease of access to the outdoors and as such may encourage more spontaneous use by classroom teachers than those operating in single-storey schools with access along corridors.

4) Quality of outside playing and learning environments. Ground level environments are likely to be able to sustain more natural features that children rely upon for their imaginative play and learning. Trees provide natural shade and a wide range of rough and ready materials for construction and play. This is more difficult to achieve on higher level terraces. If building several storeys adds to the *quantity* of natural grounds available then this can be an advantage if they are still available in addition to verandas and terraces at higher levels. But the quality will always rely on a deep understanding of children's needs for play and learning in the outdoors.

5) Legibility of a building relates to how the layout of the building is understood by those who use it in order to enable successful navigation. A legible multi-storey school may be seen as one in which the overall pattern can be grasped by staff, children and parents, including areas, landmarks and pathways that are easily identifiable. Such landmarks may be architectural or personal, for example children's own artwork or links to their community may be used to identify a particular staircase and to distinguish it from other

curriculum' have been withdrawn from the Department for Education website until further notice, see <http://www.education.gov.uk/curriculum> for more information.

² The Cambridge Primary Review was led by Professor Robin Alexander of the Faculty of Education, University of Cambridge. It is a comprehensive enquiry into English primary education for 40 years. Further information can be found at <http://www.primaryreview.org.uk/>

staircases. This legibility can be supported by design features but is also related to the pedagogy and organisation which exists within the school. This raises the importance of supporting children and adults to understand how a building works and fits together.

6) Inclusion. Primary schools are inclusive learning environments supporting a range of diverse interests, needs and aspirations. Inclusion is strengthened by connectivity, collaboration and communication. Design can certainly emphasise and permit this. Multiple levels can add variety and complexity to school interiors and if designed with transparency in mind, can offer views of an extended learning community. If single storey schools are built they will have to address the same issues. All new primary schools need to be accessible to children with Additional Educational Needs (AEN) and Special Educational Needs (SEN).

7) Sustainability. New primary schools are required to meet design guidelines on sustainability. Multi-storey schools may have an advantage over single storey schools in terms of footprint and the extent of external walls requiring insulation, but this is a complex subject and requires accurate research to audit.

4. CONCLUSIONS

- 4.1 The Council needs to ensure new primary schools are built to meet the forecast growth in new housing and school age population. Given the current economic climate and the demands on Section 106 agreements to meet the capital costs of schools, there will inevitably be a focus on finance and land. However, all factors relating to the viability and success of new schools, particularly those relating to teaching and learning, need to be considered.
- 4.2 The County Council is already considering larger primary schools in response to the urgent need to provide additional school places. The changes to education policy post 1997, including the Early Years Foundation Stage, inclusion of children with SEN and provision of extended services, all contribute to the need for primary school sites to provide more facilities and, therefore, have larger footprints. As a result, a single storey school of this size (3FE 630 places) with a range of extended school and other services provided from the site has the potential to be very sprawling with a disconnected feel. Having a wider range of design options would assist in providing solutions to these issues that have a direct impact upon teaching, learning and child well-being. The use of multi-storey buildings may be a solution to some of these issues.
- 4.3 The building design may have the potential to help resolve some financial viability issues of major developments when the school is first built but this is more likely to arise from creative solutions to co-locating a range of services rather than because one or other method of construction in itself delivers financial savings.
- 4.4 The overall success of any school building needs to be supported by good pedagogy to ensure the way the building is intended to be used is not forgotten; that there is an attractive range of all types of spaces for the pupils

and staff to use; that good management practices are in place and the school is well organised. The need for designers to work with the promoters and leadership teams of new schools will become increasingly important to ensure that the design solutions available support the teaching and organisational approaches of the users of the building.

- 4.5 Whilst none of the case studies were new schools specifically built within new housing developments, they demonstrate how each design has adapted to the site constraints and the local areas they serve. The report traced how the design of schools had over time reflected the communities they served from the first maintained schools constructed in the old urban areas of towns and cities in the latter part of the 19th Century to the schools built from the 1920s and 30s onwards, which for a large part of the 20th Century, reflected the growth of suburbs. This could prove to be a particularly relevant finding as, while the new developments planned in Cambridgeshire are mostly higher density developments than those suburban developments of the recent past; neither can they be described as sharing the characteristics of our older urban areas. All new primary schools need to be considered in relation to the individual context and community they will serve.
- 4.6 New primary schools built to serve new housing developments also have different social challenges. A new school in a new development needs to operate as a focal point for the community as a service and information centre. New housing developments often have different characteristics than existing communities in that there is often a higher rate of children with SEN, a higher rate of population churn and a disconnected and disparate feel to the community. New schools in these environments often need to act as a community anchor where support services can be located alongside the education provision.
- 4.7 Taking into account of all of the above and the fact that the research does not conclude firmly in favour of either single or multi-storey primary schools, officers are recommending that Cabinet agrees a proposal that the Council implement a change in policy and allows a range of design solutions, including multi-storey primary schools, *where appropriate*. The design and architectural layout of these schools will be considered on a case-by-case basis to ensure all school buildings are appropriate to their own unique set of circumstances and sit comfortably within the overall development context.

5. SIGNIFICANT IMPLICATIONS

5.1 Resources and Performance

Some elements of multi storey construction can be more expensive with more specialist construction techniques being required and additional space needed e.g. the provision of lifts and stairwells. Further additional spaces are also required to ensure the building functions effectively and can provide full access to a range of facilities at all levels within the building for teaching, play and socialisation. These additional elements offset the savings of building upwards, which are a building with a small perimeter and less roofing. Overall, therefore, the cost of delivering multi-storey schools is expected to be broadly neutral. The performance of the building, particularly for energy use

and sustainability, is established through a combination of the planning process and building control regulations. All building designs will be required to meet these standards as a minimum.

5.2 Statutory Requirements and Partnership Working

Designing multi-storey schools would not have any more implications for statutory requirements and partnership working than single storey schools. However, the joint working with the promoters of any new school will be enhanced if a wider range of design options are available to provide the teaching and learning environment required.

The new Government's Free School policy was announced as recently as 18th June. It is not immediately obvious how the various strands of Government policy to promote choice and diversity within the education sector will impact upon the competition process and the promotion of schools.

5.3 Climate Change

In identifying the need for new schools, officers will be guided by the following policy recommendations approved by Cabinet in September 2007:

- Schools should be sited as centrally to the communities they will serve as, unless location is dictated by physical constraints and/or the opportunity to reduce land take by providing playing fields within the green belt or green corridors.
- Where possible, primary schools should be sited so that the maximum journey distance for a young person is less than two miles, the statutory walking distance for children of this age.
- Schools should be located close to public transport links, and be served by a good network of walking and cycling routes. The County Council's School Transport and Sustainable School Travel Strategy actively promotes a reduction in car usage and an increase in the number of children and young people walking and cycling to school. However, it may still be necessary to provide transport for some children. The effect of this in terms of carbon emissions is impossible to quantify at this stage.

The County Council currently adopts the **Building Research Establishment Environmental Assessment Method** (BREEAM) Very Good standard for all its new school buildings, with an aspiration to achieve an Excellent rating. The design for the new primary school at Gunhild Way, a two-storey build, is expected to achieve a BREEAM Excellent rating. Any school buildings provided after 2016 will have to meet the Government target of zero carbon standard.

5.4 Access and Inclusion

The inability to make proper provision to meet the needs of new developments at local schools may have the greatest impact upon those with special educational needs (SEN) or those that are economically disadvantaged and without access to their own private transport. The Council is committed to ensuring that children and young people with SEN are able to attend their local mainstream school, where possible, with only those children

with the most complex and challenging needs requiring places at specialist provision.

Design of multi-storey schools raises issues relating to accessibility. However, the case studies used indicate that this is not an issue if good management practices are in place. In addition, new schools whatever their design form, will have to include the range of facilities to provide for children with SEN. These were considered by the CYP PDG at its meeting on 19 January 2010 when the *Children and Young People's Services Capital Programme – Adoption of Principles in Respect of Building Special Educational Needs Facilities in Schools* report was submitted and detailed the principles for SEN facilities in mainstream primary schools.

5.5 Engagement and Consultation

The consultation process surrounding the development and design of new schools would incorporate full engagement with the local community to ensure its views are considered. Examples include the County Council's commitment to discussing Design Quality Indicators (DQIs) with key stakeholders on all major schools capital schemes and extensive pre-planning application discussions with statutory and representative bodies and the local community in accordance with the County Council's adopted Statement of Community Involvement. No comments were received following the stakeholder presentation of the report held on 29 March 2010.

Source Documents	Location
New Schools – Competition Arrangements, Policy and Decision-making Process , Cabinet report, 11 September 2007	Alison Cook B202, Castle Court, Cambridge CB3 0AP 01223 699783
Primary School Site and Design Principles , Cabinet report, 7 July 2009	
Children and Young People's Services Capital Programme – Adoption of Principles in Respect of Building Special Educational Needs Facilities in Schools – PDG report, 19 January 2010	
Tall Schools – An investigation into the choice of single or multi-storey for new- build primary schools as affecting the quality or delivery of the education provision – March 2010, University of Cambridge	
<i>Investigation Into The Choice Or Single Or Multi-storey For New Build Primary Schools As Affecting The Quality Or Delivery Of The Education Provision</i> - PDG report 11 May 2010	