

Getting a Lot for a Little

Improving the Quality of ESFA-Funded School Designs

March 2018



# Contents + Introduction

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|   |       |
|---|-------|
| Contents + Introduction                         | 2     |
| Executive Summary                               | 3     |
| Evidence of a Problem                           | 4-5   |
| Improving the Process to get Better Outcomes    | 6-7   |
| Example 1. Becket Keys Church of England School | 8-11  |
| Example 2. Cromer Road Primary School           | 12-13 |
| Special Schools and Alternative Provision       | 15    |

## Introduction

This statement is written to help improve the quality of design on the Free School and PSBP building programmes without exceeding the budgetary constraints. It highlights some areas of the ESFA processes for procurement of design and construction on Free School and PSBP programmes that seem to be compromising quality in recent projects and provides recommendations for how these can be improved. Examples are given of projects where these recommendations have been adopted and a higher design quality achieved.

Through distribution of these proposals, and discussions with contributors to these programmes, we will be seeking feedback and encouraging further thoughts on how amended processes can improve design outcomes. Fundamental to our approach is the belief that selective design innovation and collaboration with the right contractors are capable of achieving a very good quality of design and construction even on limited budgets.

*Innes Associates, March 2018*

# Executive Summary

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In pursuit of a consistent standard and reduction in the cost the ESFA has established a number of processes and written specifications to guide design and construction. Through this approach some problems of previous construction programmes have been tackled with success. Extravagance and whimsical designs have gone, and the waste of human resources in competitive processes has been reduced. However, the latest completed projects emerging from this method display some serious and consistent compromises in the quality of the school environment, as well as wasted funding. These are likely to have an impact on the teaching, learning and staff-retention capabilities of these schools.

## Six Weaknesses + Six Recommendations

In this statement we give examples of weaknesses in the process from six different stages of the design and procurement process. These are:

1. Design and construction teams are reporting boredom and disappointment in working on ESFA programmes as a result of repetition and low expectations of quality from the commissioning client
2. Complaints from contractors about the poor quality of briefing and survey information are making projects less attractive to bidders
3. Lack of care in masterplanning work (particularly in the PSBP2 programme) is setting some projects off on the wrong foot and causing delay and frustration
4. In Free School projects the lack of design advice during the competitive stage misses an opportunity to get the best design from bidding teams. The ESFA is losing control of design quality and a poorer quality of building is the result.
5. Completed buildings are showing a poor quality of space, particularly in their circulation areas and main halls
6. Over-complicated mechanical systems are being specified and installed. They are expensive to buy and run.

Five recommendations are provided to improve design outcomes. These are:

1. Have higher expectations. Attract a better calibre of design and construction teams by showing an interest in the design quality of projects.
2. De-risk projects and improve significantly the quality of information in feasibility studies. Resource and support a proper job when masterplanning is required.
3. Make the projects more attractive to bidding contractors by combining the feasibility work with the right survey work at the right time
4. Deploy design advice for the Client Engagement Meetings during the competitive stage to get the most from the intense work carried out by design teams working with the contractors
5. Apply thoroughly the principles of fabric first and passive design written in the Output Specification to improve the quality of spaces, particularly circulation spaces and main halls. We recommend setting up a pilot study with design and contractor teams to explore how the use of over-complicated mechanical systems can be reduced.
6. Extend the Client Engagement process from 6 weeks to 10 for non-competitive projects.

**The best design and construction teams can do amazing things and create excellent value for money when they are asked. Conversely, low ambitions discourage the best and lead to poorer outcomes. These recommendations are about improving quality without higher budgets.**

# Evidence of a Problem

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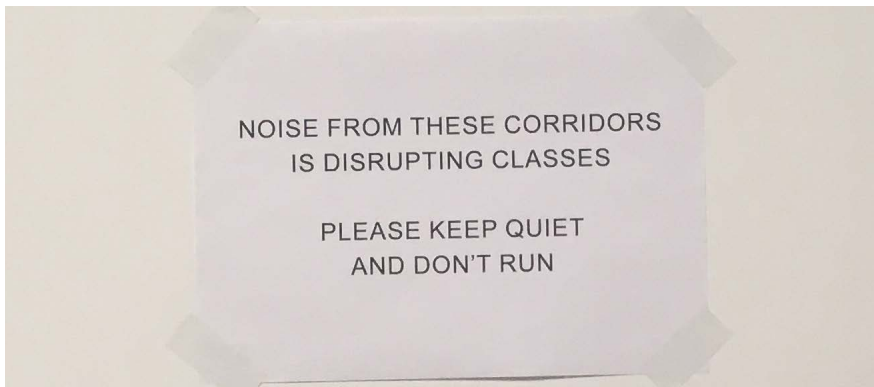
1 *Lack of Windows in Hall Spaces*



2 *Mechanical ventilaion is complicated and expensive to run and maintain*



3 *Circulation spaces lack daylight*



4 *Inadequate space causes congestion*

# Evidence of a Problem

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In some respects the ESFA programmes are working well in their aim to control expenditure and provide a baseline standard of accommodation. However, we can report from seven years' participation in the processes, and observe in recently completed projects, some common sources of delay, waste of funds, and recurring compromises on the design quality of new school buildings. These sources are the following:

1. Design and construction teams are reporting boredom and disappointment in working on ESFA programmes. Low expectations from the commissioning client are a turn-off for talented professionals.
2. Contractors have consistently complained about the poor quality of information and the level of risk being passed down the chain from the feasibility stage. Fore-shortened and thinly-resourced studies are missing an opportunity to set a good brief and provide valuable information for later teams. Common standards for buildings are useful, but not all sites and schools are the same. A proper feasibility study is what starts the important task of making the two things work well together.
3. Masterplanning work for school sites during the feasibility stage (particularly with the PSBP2 programme) can be weak, leading to plans showing the wrong buildings in the wrong places, and sometimes the wrong buildings being demolished. Later teams are restricted from correcting the mistakes by the requirement to remain consistent with the original proposals. The potential value of landscape spaces, particularly on the denser urban sites, is not being recognised.
4. ESFA is losing control of design quality during the ITT stage of Free School projects because it engages no formal design advice during the competitive procedure. This stage presents the appropriate time to challenge bidding teams to get the best design for the money available, but professional advice is lacking to provide the right guidance.
5. Completed buildings are displaying a poor quality of space in their circulation areas and main halls. Natural daylight and ventilation is severely compromised in many recently completed schools.
6. Over-complicated mechanical ventilation systems have high running costs and are not in accordance with the "fabric first" approach in the ESFA's Output Specification. While such systems are sometimes necessary to deal with the problems of pollution, or the special character of the rooms they serve, in many cases they are employed where daylight, tranquillity and fresh air are available in abundance.

*(Opposite)*

1. *Lack of windows and no views can compromise the quality of spaces*
2. *Mechanical systems are standard solutions*
3. *Restricted daylight and no views reinforce negative quality of circulation*
4. *Sign in newly remodelled Academy where corridors are congested*

# Improving the Process to get Better Outcomes

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Using the building blocks provided by the ESFA's considerable work on standardisation, our recommendations to improve outcomes involve relatively modest changes to existing processes. We recognise the limitation of existing resources and our proposals are intended to work within current budgetary constraints. The following six proposals, if applied carefully and thoroughly, will create a dramatic improvement in the quality of finished buildings and increased value for the capital sums spent.

## **1. Have Higher Expectations**

The best design and construction teams can do amazing things and create excellent value for money when they are asked; conversely, low ambitions discourage the best and lead to poorer outcomes.

Recently, one Member of the National Contractor's Framework explained to us that they need to rotate teams regularly away from school projects because they were bored by the repetitive and uninspiring nature of the projects. To get the best teams working for the ESFA we need, collectively, to raise the expectations for the quality of the buildings and, when it arrives, celebrate those achievements.

## **2. De-Risk Projects with Better Feasibilities + Adequate Survey Information**

Valuable work needs to be done on understanding a particular school's needs, selecting and optimising the accommodation and adjacencies, and gathering essential survey information at the feasibility stage. The opportunities and constraints of the site need to be understood and potential design options explored. The accommodation schedule needs interrogating from the point of view of the school's pedagogical approach and key adjacencies explored in detail. Key surveys need to be provided before the production of the Control Option. Plans of the Control Option need drafting at a scale where the success of the design can be tested and key risks identified.

Masterplanning work, particularly for the PSBP2 programme, requires well-qualified designers to consider and test options thoroughly before making a recommendation. This will help put the right buildings in the right places and avoid the risk of hard-to-reverse poor judgements. Opportunities for good quality landscape, particularly for primary and special schools, need to be considered at this stage to guide future investment

## **3. Set a Good Quality Brief**

A good school-specific brief will improve the attractiveness of schemes to bidding contractors and make more efficient use of later design and construction resources. A good brief is more than a basic accommodation schedule and must include: clear statements about a school's specific aims and priorities (both now and in the future), explanation of how a school is planning to exploit its site's potential (both inside and outside the red line) and a description of how bidding teams are to shape the allocated accommodation to get the most from the site and support the work of the school. This information comes from thorough work and dialogue complete at the feasibility stage. When done properly, it helps to get more value from the following competitive stage.

# Improving the Process to get Better Outcomes

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## **4. Provide Free Schools with Good Design Advice during Competitive Stage**

Value is created by design teams during the competitive stage when they interpret the school's brief, generate suitable design concepts and resolve the site-specific challenges in an intense period of hard work. The addition of design advice for the school and ESFA during this period is essential to get the most use from this work. A well-qualified design adviser will help the school respond to design team's proposals, provide clear feedback to the contractor teams and act as a source of ideas if the contracting teams are struggling to create solutions to problems. It is a small investment to increase the value of the most critical stage of the design process.

We propose engagement of a design adviser for the six Client Engagement Meetings to maximise the value of design work during the competitive stage.

## **5. Support Quality of Space and the Output Specification**

The following statements from the 2017 Output Specification need to be applied thoroughly to give better quality of space in buildings that are cheaper to run.

"A sustainable approach to design, construction and production.....shall deliver a cost-effective and resource-efficient facility that: ...optimises passive design measures, including fabric first principles" paragraph 1.6.7.1

"The Contractor shall design any Buildings....to create an environment that supports behaviour and pastoral care" paragraph 1.7.4.1

"The Contractor shall ensure that the quality of light provided supports a positive teaching and learning environment" paragraph 2.7.2.1

"The Contractor shall ensure that the use of passive measures [is] considered before active measures are proposed..." paragraph 2.8.1.3

The design work necessary to achieve this specification means creating the right fenestration and ventilation air-paths. It requires a change in thinking in the design of classrooms, halls and circulation spaces and a reduction in the use of mechanical ventilation. The result is a higher level of well-being for pupils, a better working environment for teachers and lower running costs. Over the usable life of these buildings these improvements provide considerable value.

We recommend a pilot study with design teams, involving framework contractors, to explore how the current approach can be modified to achieve a better standard of passive design.

## **6. Give Time for Good Design**

Give an option to extend the Client Engagement process from 6 weeks to 10 for non-competitive projects. Not all sites are the same and when a tricky plot needs information and surveys to resolve it is a false economy to push through solutions too quickly.

We think the six proposals described above can reinvigorate the ambitions to create a good quality of building within the constraints of available funding. The following section provides examples of where this has already happened, through processes that have employed some of the recommendations described above.





## Example 1. Becket Keys Church of England School



*Cromer Road Primary School [PSBP2 Programme]*

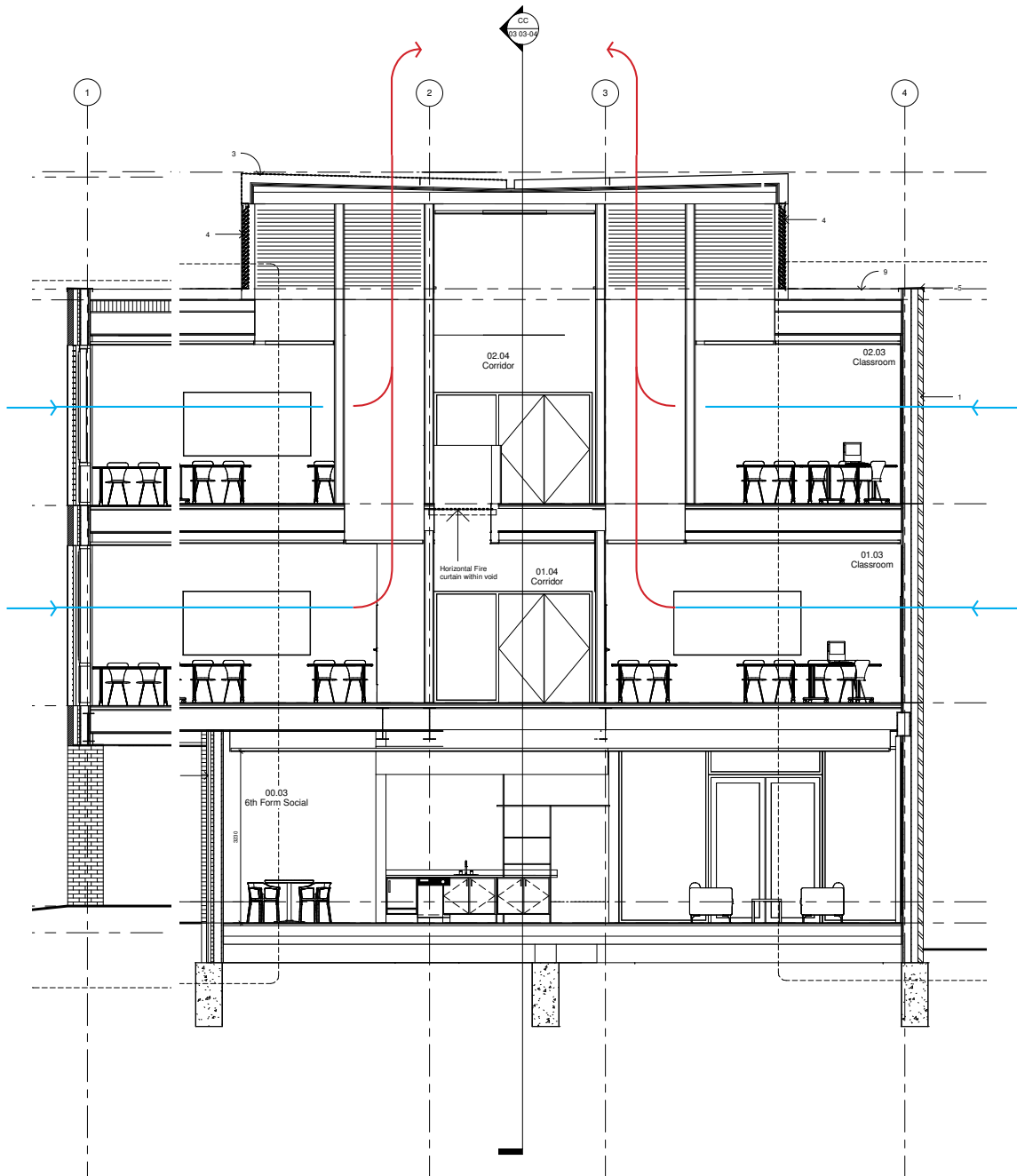
When the 16-classroom Welby Building for Becket Keys School was opened in Autumn 2017, the Headteacher and Russell Educational Trust expressed their heartfelt admiration for the design and construction quality of the new building. They described it as "...our fabulous new state-of-the-art Welby Building." The building also provides a new 6th-form centre and multi-purpose hall. Particular praise was given to three design innovations that are rarely seen on new ESFA-funded projects: a new colonnade that enhances the courtyard play area and provides covered social space, double-width and clerestory-lit circulation spaces that reduce stress and encourage good behaviour, and entirely naturally ventilated classroom spaces with large windows. The ESFA also expressed its satisfaction at the outcome of the project and now use it as an example of good practice. The project was completed on-time and within budget by Logan Construction.

Flexibility in the brief, recognition of the value of good design and excellent teamwork were the three key factors that enabled the quality of outcome to be achieved. School and Trust were clear on their priorities and challenged the teams to reach above the normal standard. Very close teamwork between Client, ESFA, Contractor and design team, and flexibility in the accommodation schedule, allowed a solution to emerge that achieved the added value of additional space and a design that added to the school as a whole. Early feasibility work had been unusually thorough, and the Contractor's openness to innovation and control of costs underpinned the design dialogue.

*(Above and Opposite) External photographs of the Welby Building at Becket Keys School*



# Example 1. Becket Keys Church of England School



Natural ventilation and daylight in all classrooms is achieved with simple but carefully engineered designs to model heat loads, comfort conditions and air paths that meet the ESFA Output Specification. The classrooms have been singled out as unusually attractive but the school will also have lower electricity bills as a result.

Future investment in the school has been guided and encouraged by the strong ideas about masterplanning and landscape applied to the scheme. By recognising the building's gateway position and its potential to shape the courtyard,

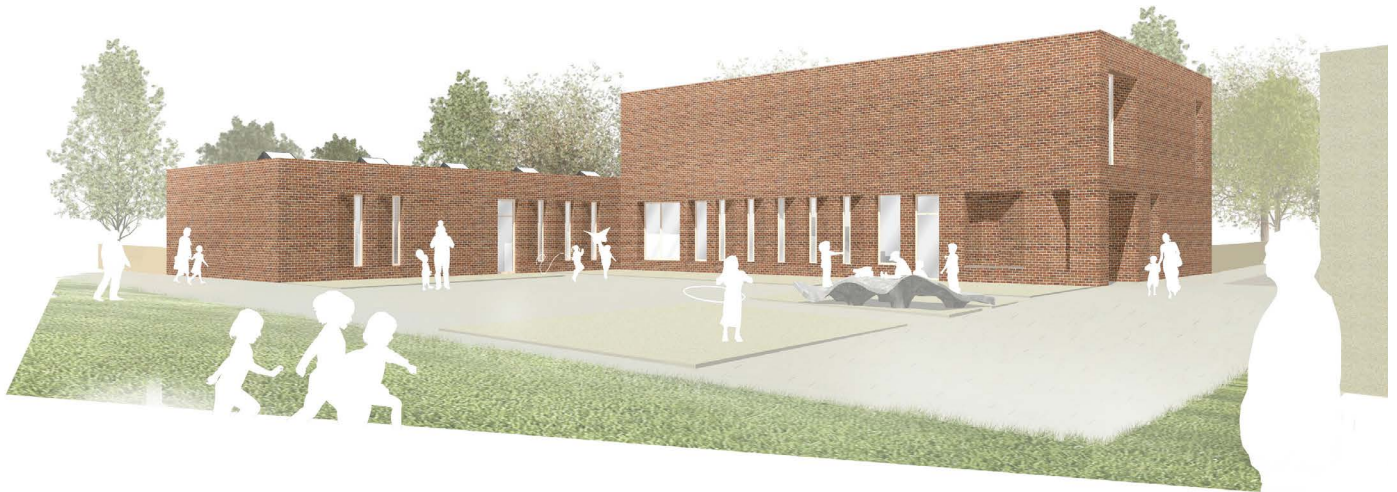
the design has helped to define a new shape for the school. While funding was not available at the time for new trees and benches, the school is now on a fund-raising drive to buy these and install them into the play area. In this way the project will get even better over time, and the value of the ESFA's funding and future investment will be increased by its contribution to a common goal. It was the willingness of the whole team to contemplate the bigger picture, and in particular the value of landscape to the success of a school that made this possible.

(Above) Detailed cross-section showing natural air-path

(Opposite) Photograph of the internal circulation in the Welby Building

## Example 2. Cromer Road Primary School

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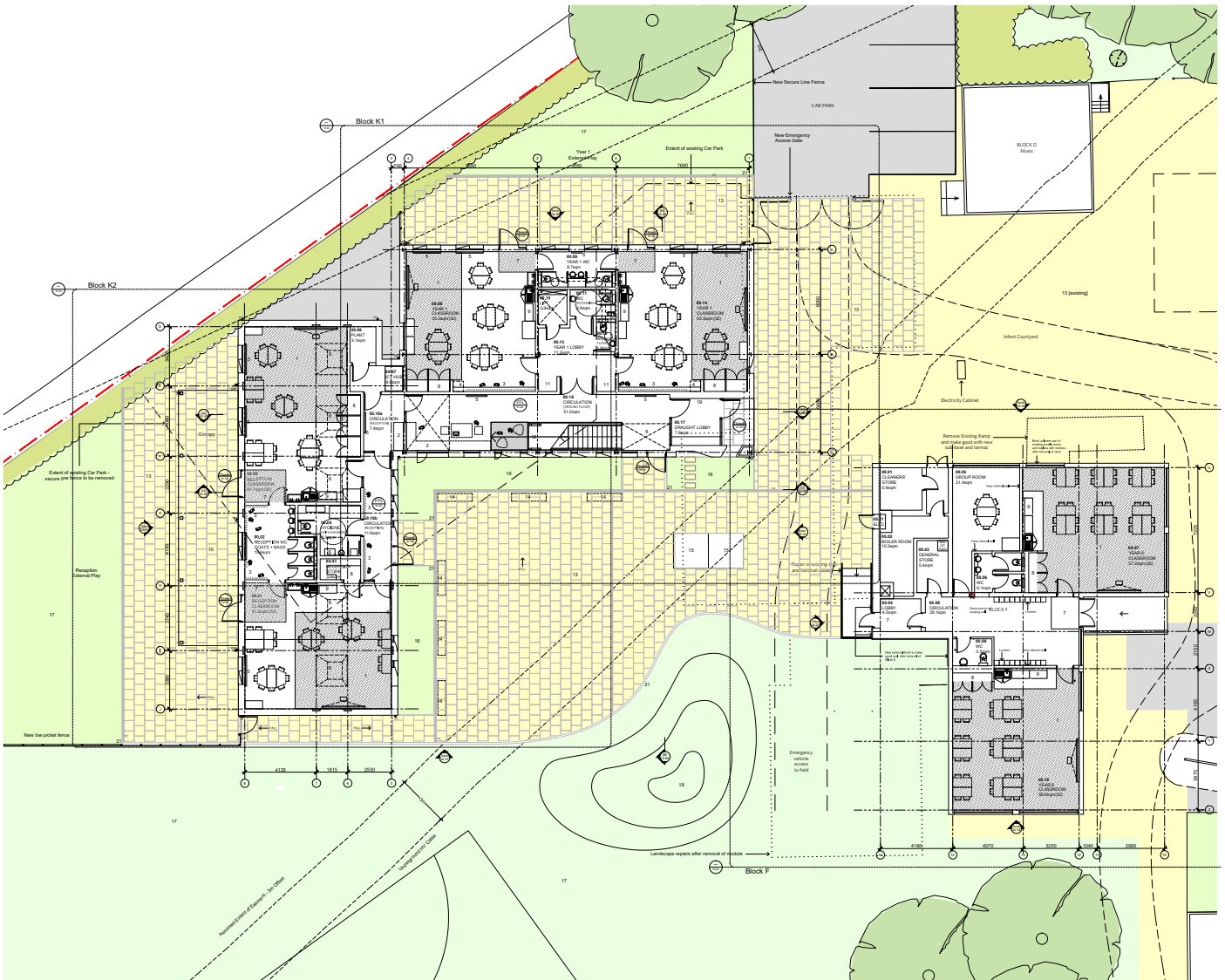


*(Top) 3D view of garden*

*(Above) 3D image of south elevation*

*(Opposite) Ground Floor Plan for the new and refurbished blocks at Cromer Road Primary School*

## Example 2. Cromer Road Primary School



### *Cromer Road Primary School [PSBP2 Programme]*

On a congested site with a variable quality of buildings, an appropriate position for the new Reception and Infant Block was not easy to find. It was the integration of Early Years' playspace and need to rationalise the circulation between buildings that led to a solution the school are now delighted to accept. It has been commented, by an ESFA design advisor, that the solution as proposed at Cromer Road is an example of good, resourceful design within the PSBP2 budget. The design creates added value through a focus on landscape design, a creative use of circulation space and double-aspect classrooms to aid daylight and natural ventilation.

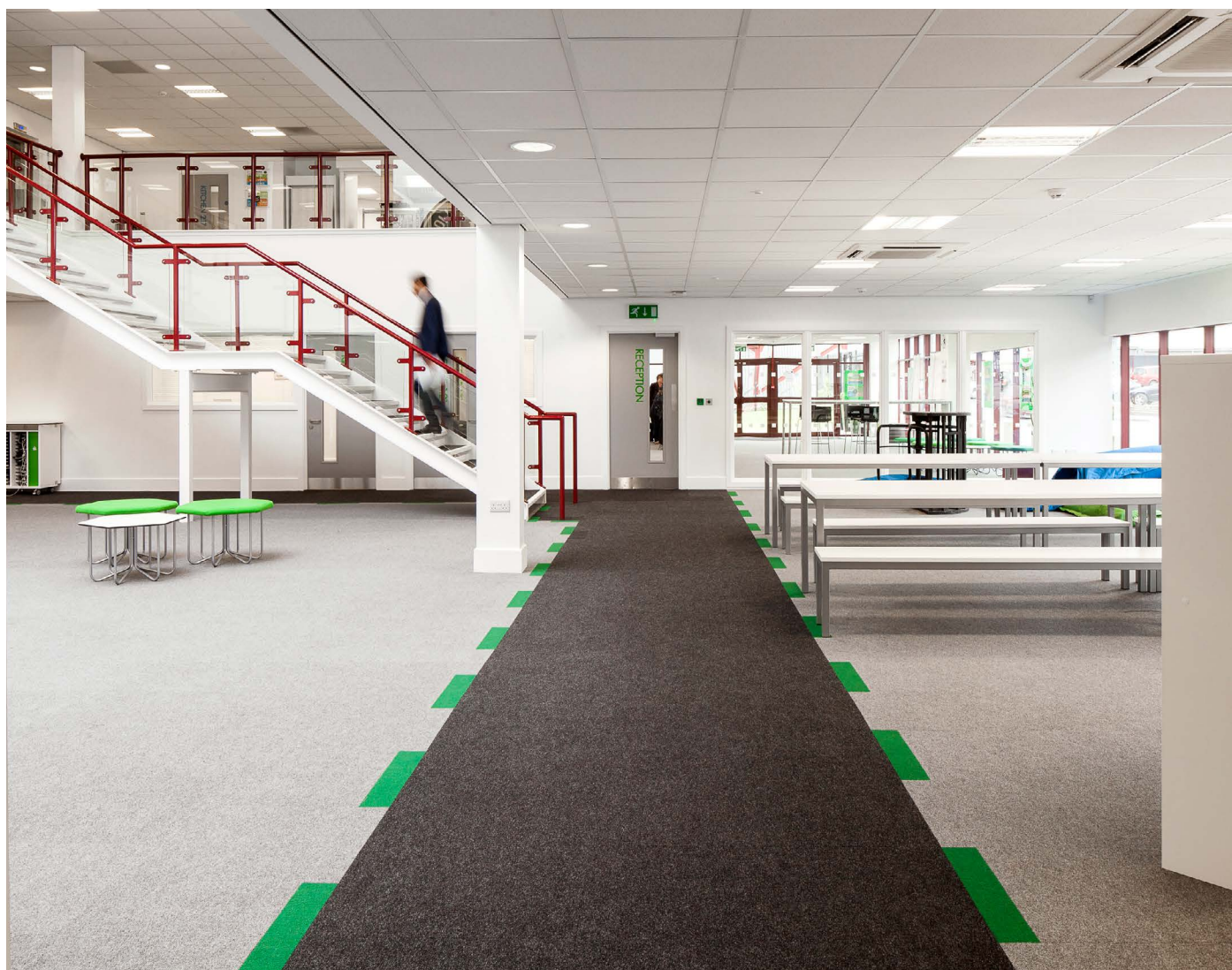
The new building starts on site in April 2018 and will provide 2 Reception and 6 Infant Classrooms and enclose a new courtyard for educational use by the whole school. The layout of the spaces was driven by a single-staircase solution designed to meet the strict area allocation for the project. Turning this constraint to an opportunity, the design wraps the

staircase volume and circulation space around the new garden like a cloister. Internally, these spaces double-up as a break-out workspace for children that opens onto a planting bed in which the school can invest over time. A previous sculptural concrete bench will be repositioned into this courtyard to create an attractive space and enhance its use as an outdoor classroom.

With collaborative working between school, ESFA, contractor and design team these targeted design innovations have been made possible within the budget and while maintaining the programme. We look forward to a successful opening and hope to report a positive outcome at completion similar to Becket Keys.



# Special Schools and Alternative Provision



The particular thing about special schools and alternative provision is that the quality of building design has even more impact on whether a school can be run well or run badly. Every day these organisations have to manage disruptive behaviour, high levels of anxiety in students and significant stress for staff. If the building is well-designed and constructed the teaching staff are given a very effective tool for managing these situations; if the briefing process during procurement was flawed, or if the building is poorly designed or constructed, the teaching staff can be severely compromised.

Local Authorities also have to defend themselves regularly against claims of insufficient or poor provision, and the ability of a local authority to maintain a good quality of care is directly affected by the quality of their accommodation for special schools and Alternative Provision.

The recommendations given above apply in the case of special schools and alternative provision, but there is a greater need for flexibility in the brief to reflect the greater variety of pupils' needs and pedagogical approach in these schools. Class-sizes, curriculum offer and pupil management show considerable variation across different organisations and it is necessary for design work to respond to these differences.

These pages illustrate the One in a Million school in Bradford, opened by Lord Nash in 2013. The design to convert the former Bradford City football kit shop introduces daylight into the deep plan with a new atrium roof and uses innovative furniture layouts to support the teaching methods.

(left) central atrium  
(above) resources area and dining space

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