STAGE
01

FEASIBILITY REPORT - PHASE 2

RUTLAND SECONDARY SCHOOL'S EXPANSION | CATMOSE COLLEGE

nps group

Catmose College

Rutland County Council

SITE	CATMOSE COLLEGE Huntsmans Drive Oakham LE15 6RP
DATE	14th December 2020
DESCRIPTION	Strategic definition Report
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ISSUE	1 - For comment

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1.0 EXECUTIVE SUMMARY

Introduction

Rutland County Council is responsible for providing sufficient school capacity within its administrative area to meet the predicted growth in demand for pupil places. This commission leads on from the Phase 1 studies which explored the protentional for expansion at Catmose College, Casterton College and Uppingham College. On 31st July 2020 RCC cabinet approved the recommendation to undertake Stage Two of the feasibility study for school expansion at the preferred site of Catmose College, Oakham to deliver additional places through the development of an 8 Form Entry secondary school as identified in the Phase 1 study.

This study develops the selected Option 4 to expand Catmose College from a 7FE school to an 8FE entry school through remodelling of the Brightways Centre and a new build extension.

The scope of works for this study is based on the following:

a. A review of available information

b. Developing architectural sketch proposals for the expansion options

c. Provision of a wider understanding of the overall condition of the asset.

d. Developing strategies for mechanical & electrical, structural and sustainability approaches

e. Analysis of site constraints and opportunities

f. Cost estimates for the expansion options

g. Identification of key risks including planning risk and potential implications for project performance

h. Analysis of external areas in accordance with current guideline

i. Developing procurement strategy and programme

The relocation of Brightways Day Centre is to be managed by Rutland County Council.

Background

Catmose College is an oversubscribed secondary academy in Oakham, Rutland. The catchment area is predominantly from Oakham and surrounding villages but pupils choose to attend from across the county.

Catmose College was designed by EllisMiller Architects in 2011 as a new build 6FE 11-16 Secondary School with all accommodation provided in a single 2 storey building. Constructed during the Building Schools for the Future programme, the accommodation provided complied with the requirements in BB98, for a net capacity of up to 945 pupils.

Current provision

The school has expanded to 7FE by carrying out internal alterations. This is the limit to expansion without new accommodation and does not provide sufficient laboratory provision, 8 are required for a 7FE 11-16 secondary and at present there are only have 6 laboratories.

The area required for expansion has been determined by the shortfall in the accommodation based on the area comparison schedules. See pages 6—9.

The building is in good condition and being well maintained. Modifications have been made to the original building particularly in the area between the visitor entrance and the student entrance. The mezzanine floor has been converted for designated special provision area. A separate 1960s building previously used as a nursery has been converted to offices and a conference area.

Issues highlighted by the college at our second meeting include:

— Assembly area not big enough for 8FE 240 pupil year assembly – max 210 at present (one year each lunch time) the drama space is also in use at lunch times and so cannot be made available for expansion of the assembly area. Addition of an Activity Studio to provide a suitable alternative drama facility at lunch times would solve this issue.

— Shortage of science provision for current 7FE is an issue at present.

— Dining, the area added previously is for Harrington School pupils and provides for both dining and social use, this was entirely funded by the Academy trust and should not be included in the area comparison for 11-16 provision.

EXECUTIVE SUMMARY 1.0

— The pupils toilets have not been added to for the increase to 7FE intake, the new facilities should address the shortfall for the full intake increase from 6FE – 8FE

Note: These are not necessarily reflected in the accommodation analysis

The school site

The school site is rectilinear in shape, accommodating the purpose-built school with play areas and sports fields to the rear (west & north) with access, parking and public areas to the front (South & East). The external areas are comprised of soft & hard recreation areas, a four court MUGA, playing fields including a full-size all-weather pitch and a habitat area with balancing pond. These are sufficient for the current pupil role and can accommodate expansion as the all-weather surface counts as double area.

Developed Design

In developing the design, 2 meetings were held with the College Principal. At the first meeting sketch plans for conversion of Brightways and sketch plans for a new 2 storey block in location B were presented for feedback from the college. These sketch plans have been labelled Option 1 and can be found in the report. The Principal stated that they wanted proposals that reflected the ethos of the college of self-contained faculties with classrooms arranged around a shared study area. An alternative location for the new block was also proposed in location D behind the sports hall. NPS took the comments on board and developed sketch proposals for a second meeting. The outcome of the second meeting are the sketch proposals labelled Option 2. This option is the college's preferred option.

The O & M Manuals were obtained and reviewed for design purposes. A more detailed condition was carried out which revealed minor issues requiring attention. The full condition report can be found in Appendix I of this report.

For the proposed structural option we would recommend a frame either in concrete or in timber. The timber option being the more sustainable option. It has not been possible to determine the type of foundations at this stage. A full site investigation would be required in the next design stage. They are likely to be shallow concrete foundations.

Mechanical and electrical strategy is to install energy efficient systems. The full mechanical and electrical report can be found in Appendix D. LED lighting is recommended. Gas fired heating and hot water is recommended with under floor heating and mains fed water system. Mechanical ventilation with heat recovery (MVHR) is seen as the most energy efficient. In the remodelled Brightways area it is proposed to modify the existing systems, but to replace the lighting with new LED lights.

The sustainability statement in Appendix E takes a holistic view and sets measures that could be considered to achieve a sustainable development. A fabric first approach is recommended with consideration to renewable energy production. Photovoltaic panels on the roof of the new block are proposed.

Cost

An all-inclusive budget of £5.25m for the expansion works has been allocated by Rutland County Council. The preferred option has been costed and the total cost of this option is estimated to be £.5,515,300.00 This is over budget by £265,300.00. It is feasible to expand Catmose College for the budget, but value engineering is required. VE options are set out in the conclusion on page 30.

Programme & Procurement

Expansion is required for September 2022. Whilst it will be possible for the Brightways area to be ready for this date, the new building won't be completed. Design and build procurement is recommended to reduce the overall delivery time.

2.0 REVIEW OF AVAILBLE INFORMATION

2.1 ACCOMMODATION COMPARISON

The accommodation comparison of existing provision against EFSA current Schedule of Accommodation for a 8FE 11-16 school has been reviewed; adjustments have been made to the phase 1 schedule based on the schools feedback to the stage 1 feasibility where 7 FE expansion alterations have already been made and incorporating slight revisions to the ESFA's SOA version 7.4.

RCC have advised that the Brightways services are to be relocated making this area available to the school for remodelling to provide additional teaching space.

Review of other available information

Copies of the O & M manuals were obtained from the college. These were reviewed in the development of the sketch proposals, the structural and mechanical and electrical strategies.

COMPARISON AREA SCHEDULE
BASED ON ESFA SCHEDULE OF ACCOMMODATION FOR ANY MAINSTREAM SECONDARY SCHOOL - TYPICAL CURRICULUM
Version 7.4 MaY 2019

	8FE 1200 pupils		Catmose College Existing			Required		Achieved	
Accommodation	No of spaces	Area of space (m2)	No of spaces	Area of space (m2)		No of spaces	Area of space (m2)		
Net Area									
Basic Teaching									
General Classrooms	30	55	16	61	26 suitable classroom spaces	4	55	4	55
			7	56					
			2	64					
			2	38	return to DSP use				
			2	78	1 to return to DSP use			-1	78
ICT / Business	3	62	1	130	existing could be subdivided	1	62	2	62
English Resource IT Area									
Science	9	83	6	85		3	83	3	85
Art (General Art room)	1	83	1	143					
Art (3D Art room)	2	97	1	106					
Art Gallery			1	90					
Music	2	62	1	62					
			1	79					
Drama	1	90	1	84					
			1	115					
Design Technology									
RM Workshop	2	97	1	122		1	97	1	104
Food	2	97	1	123		1	97	1	104
Graphics / Products	1	83	1	106					
Constructional Textiles	1	83	1	106					
Total Area		**3628**		**3520**			**725**		**729**
Large Spaces									
Main Hall	1	226	1	205					
Sports Hall	1	594	1	629					
Activity Studio	1	150	1	108					
Dining & Social		321	1	265	extension desirable		56		
(shared with Harington school - post 16)			1	215					
Stepped Gallery			1	111					
Refectory			1	60					
Total Area		**1291**		**1593**			**56**		**0**

REVIEW OF AVAILABLE INFORMATION 2.0

2.1 ACCOMMODATION COMPARISON

Accommodation	8FE 1200 pupils No of spaces	8FE 1200 pupils Area of space (m2)	Catmose College Existing No of spaces	Catmose College Existing Area of space (m2)		Required No of spaces	Required Area of space (m2)	Achieved	
Learning Resources									
Library resource centre	1	153	1	231				66+18+34	118
Kiln room	1	4	1	5					
Music practice	5	8	6	5					
Music practice	1	16	1	11					
Recording	1	8	1	19					
Lighting / Sound Control	1	6	1	12					
SEN / support spaces									
Therapy / MI room	1	12	1	12					
Resource Base	1	16	3	43					
Small Group Room	4	9	-	-	add due to seperation of new	2	9		
Large Group Room	1	16	4	19				1	34
Total Area		**299**		**525**			**18**		**152**
Staff / Administration									
Staff workroom (with sink)	2	22	2	17.5					
Staff workroom	1	15	3	13					
Staff room (social)	1	48	1	46					
Conference / meeting	1	20	1	22					
Community entrance	1	8							
Head's office	1	16	1	10					
PA to Head	1	8	1	19					
Reprographics	1	20	1	13					
General Office	1	41	1	42				1	39
Entrance / reception	1	16	1	10					
Interview room	1	6	1	9					
sick room	1	6							
Office (1 person)	4	7							
Office / meeting (1 person)	7	9	2	11				1	10
Office (SENco)	1	11	1	17				1	15
Office (ICT tech)	1	11	1	11					
Office (premises)	1	11	MAT finance & premises off site						
Total Area		**372**		**295**			**0**		**64**

2.0 REVIEW OF AVAILBLE INFORMATION

2.1 ACCOMMODATION COMPARISON

Accommodation	8FE 1200 pupils		Catmose College Existing		Required		Achieved	
	No of spaces	Area of space (m2)	No of spaces	Area of space (m2)	No of spaces	Area of space (m2)		
Storage: Teaching								
General	5	6	3	8	1	6	1	2
Science prep.	1	90	2	35	1	26	1	38
Chemical store	1	7	1	16				
Specialist store (Art)	6	5	2	15				
Multi-materials prep.	1	41	1	39				
Food store/prep.	1	10	1	10	1	10	1	15
Specialist store (DT)	4	5	2	10	1	5	1	8
General store (Music)	2	5	2	10				
Drama store	1	10	1	20				
Food store	1	5			1	5		
Teaching store (Library)	1	3	-	-				
Teaching store (SEN)	1	5	1	5				
PE store/s	1	60	1	56				
PE store (community)	1	4	1	46				
PE store (Activity studio)	1	15	1	7				
PE store (external)	1	8	1	5				
Storage: Non Teaching								
Chair/table store (Hall)	1	23	1	18				
Central Stock	2	6	1	17				
Secure exam / archive	2	8	2	8				
Wheelchair / appliance bay	4	1.5	included in circulation		2	3	incl. in circulation	
Retractable seating (Hall)	1	16	1	27				
Lockers (pupils)	5	12	11	3.21	2	12		15
Lockers (community)	1	3						
Cleaners store	8	1.5	3	2.6	2	3	2	1.5
Maintenance store		8	1	19				
Total Area		**504**		**508**		**88**		**81**
Total Net Area		**6150**		**6441**		**887**		**1026**

REVIEW OF AVAILABLE INFORMATION

2.0

2.1 ACCOMMODATION COMPARISON

Accommodation	8FE 1200 pupils No of spaces	8FE 1200 pupils Area of space (m2)	Catmose College Existing No of spaces	Catmose College Existing Area of space (m2)		Required No of spaces	Required Area of space (m2)	Achieved	
Non-net Area									
Kitchen & servery	1	102	1	160					
Kitchen office	1	4							
Kitchen dry store	1	5							
Kitchen cold store	1	5							
Kitchen freezer store	1	3.5							
Kitchen toilet / changing	1	6.5	1	8					
Personal care									
Pupils changing & showers	2	68	4	39					
Accessible / staff changing	2	6	2	7					
Hygiene room	2	12	1	11		1	12		
Pupils Toilets (suites)	5	39	-	-					
Pupils Toilets (suites)	2	6	-	-					
Pupils Toilets (individual)	1	2	27	1.56		16	1.56	15	2
Staff Toilets (suites)	2	6	8	1.37					
Accessible / Staff toilets	6	3.5	3	4.6					
Accessible / Pupils toilets			7	4.6		2	4.6	3	5
Plant (indicative area @ 1.9% of net area incl. ICT Hubs & risers)									
Central plant room	1	77		194				1	15
Distribution boards	13	1	10	1.34		1	1		
Risers & flues	7	1	voids	176		1	1		15
Server room	1	15	1	12		1	3		
Circulation (@ 25.2% of net area)									
Stairwells	12	27					54		
Lift	3	4	5	4.6		2	4	2	3
Main Circualtion		1201		1832	inc internal stairs	25% of net	213	120+183+160	463
Partitions (4.4% of net area)		271		567			38	13+32+21	66
Total Non-net Area		2460		**3258**			**364**		**610**

3.0 SKETCH PROPOSALS

3.1 REMODELLING, CONVERSION OF BRIGHTWAYS EXISTING RECORD PLAN

REMODELLING

Remodelling of the Brightways area was considered first to enable the final new build accommodation requirements to be determined.

The plan for this shows the formation of 4 suitable general teaching classrooms is possible in this area. The school propose that this will be utilised for Modern Foreign Languages (MFL). Various layout iterations were considered and there is scope for further adjustment in subsequent design stages. This does however result in the loss of one large classroom formed in the alterations to accommodate the expansion to 7FE.

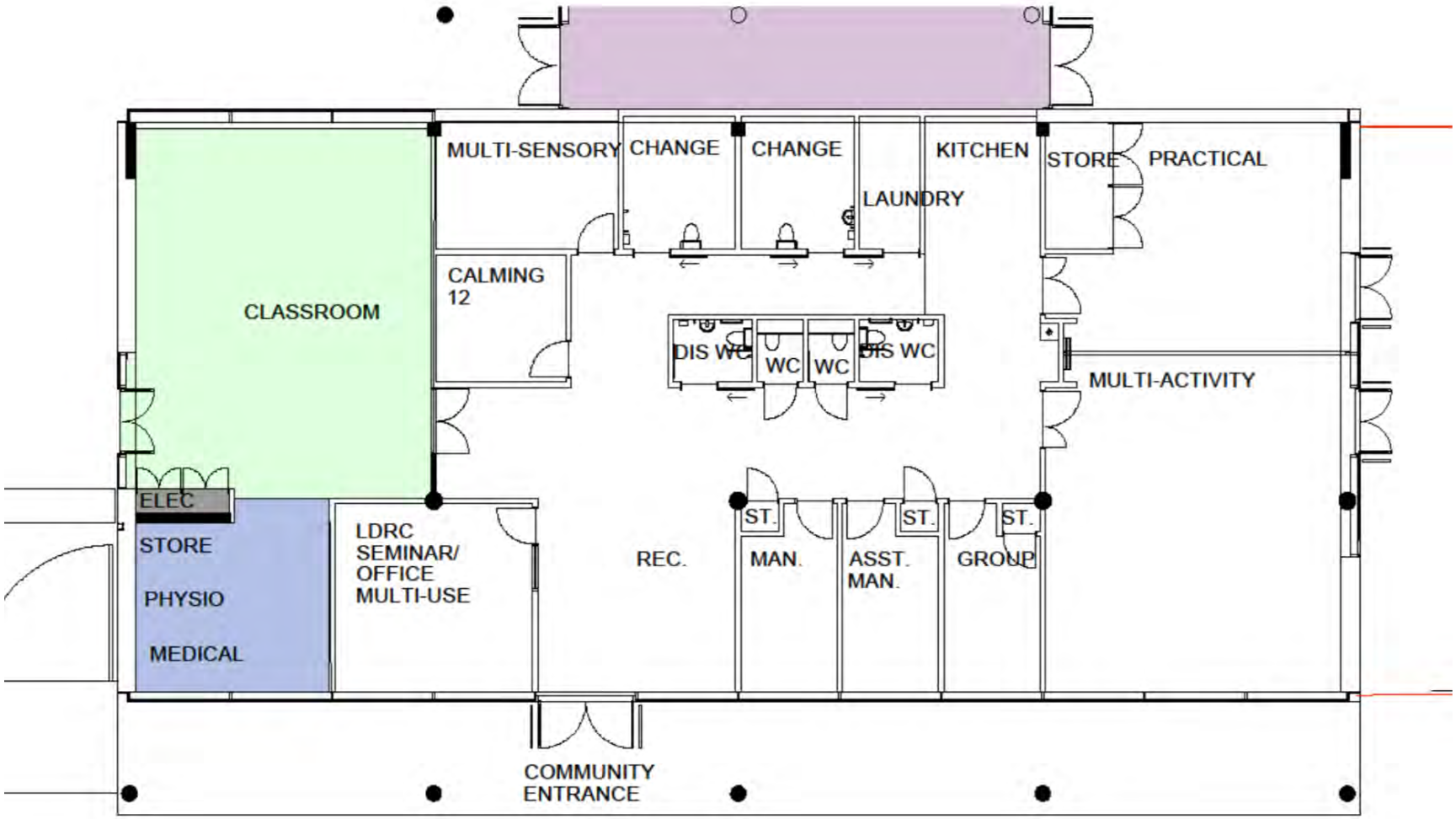
MFL has been temporarily located in the area originally designated for DSP facilities and DSP were relocated to the mezzanine area. The school propose to relocate the DSP function back to the original location and utilise the mezzanine area to provide a less fragmented Administration facility; as the 7 FE remodelling included the formation of two general classrooms by remodelling of the central administration office. These changes do not include remodelling and have not been included in the scope of works and resulting budget.

The adjusted area schedule indicates the possible inclusion of expansion of the Dining area to enable the space to accommodate 336 pupils. This has not been included in the current scope as the school have added a further servery area by remodelling and are utilising the central stepped gallery area for snack dining. A relatively simple extension could be added into the adjacent external area. Whether this is a desirable way forward to enhance dining facilities would need further discussion should additional scope be agreed.

New partitions, the school prefer to use fair faced blockwork with painted finish for robustness. Where these were originally constructed of the floor slab this is acceptable. New construction from floor level could be an issue if the crushing strength of insulation below the screed is not adequate. Partitions should be restrained at the head but allow for structural deflection without load transfer they also need to be checked for stability and may require inclusion of posts to improve this. Where underfloor heating installations run through the line of proposed new partitions masonry is unlikely to be suitable. Metal or timber studwork would be more suitable and can be clad in Fermacell board or British Gypsum ‘Rigidur H’ board which have much a greater strength than standard paper faced gypsum boards for improved durability and fixing applications. Where underfloor heating areas are sub-divided by new partitions sole plate fixing locations will be critical and pipe tracing essential.

SKETCH PROPOSALS 3.0

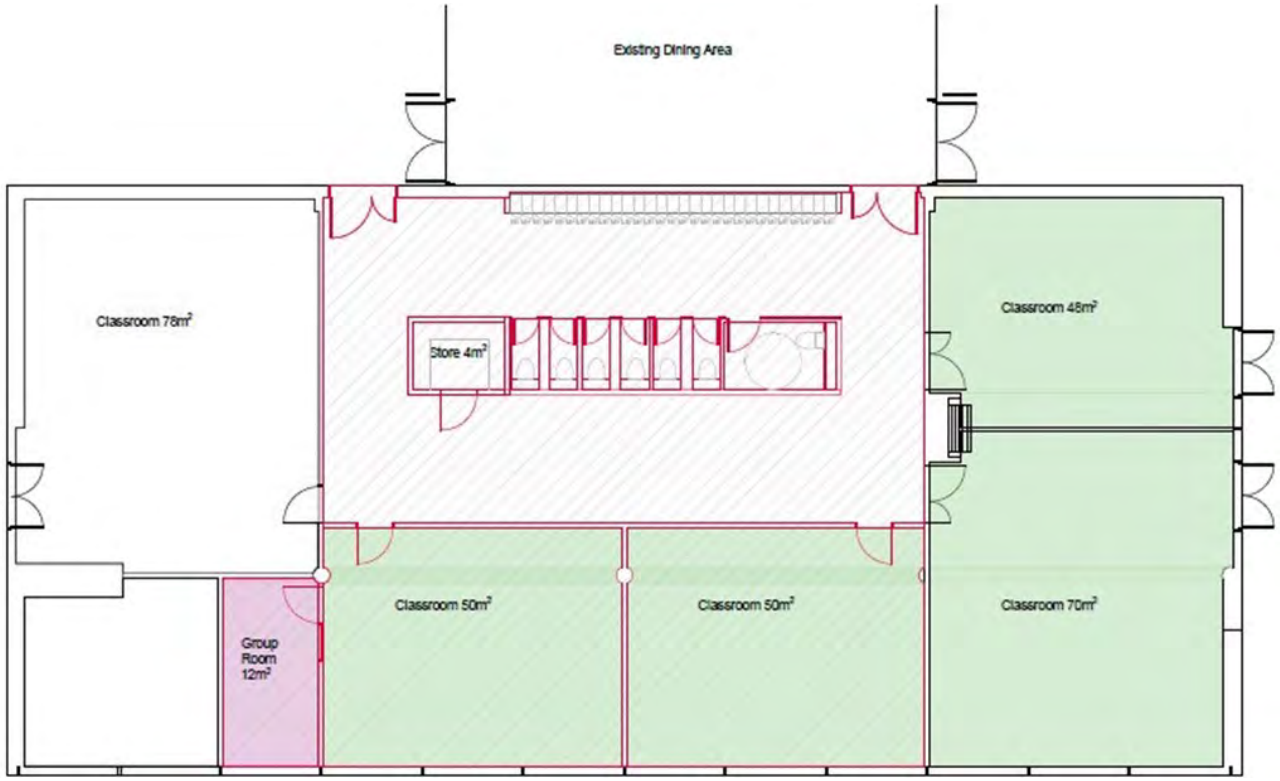
3.1 REMODELLING, CONVERSION OF BRIGHTWAYS OPTION 2



EXISTING RECORD PLAN OF BRIGHTWAYS

3.0 SKETCH PROPOSALS

3.1 REMODELLING, CONVERSION OF BRIGHTWAYS EXISTING RECORD PLAN

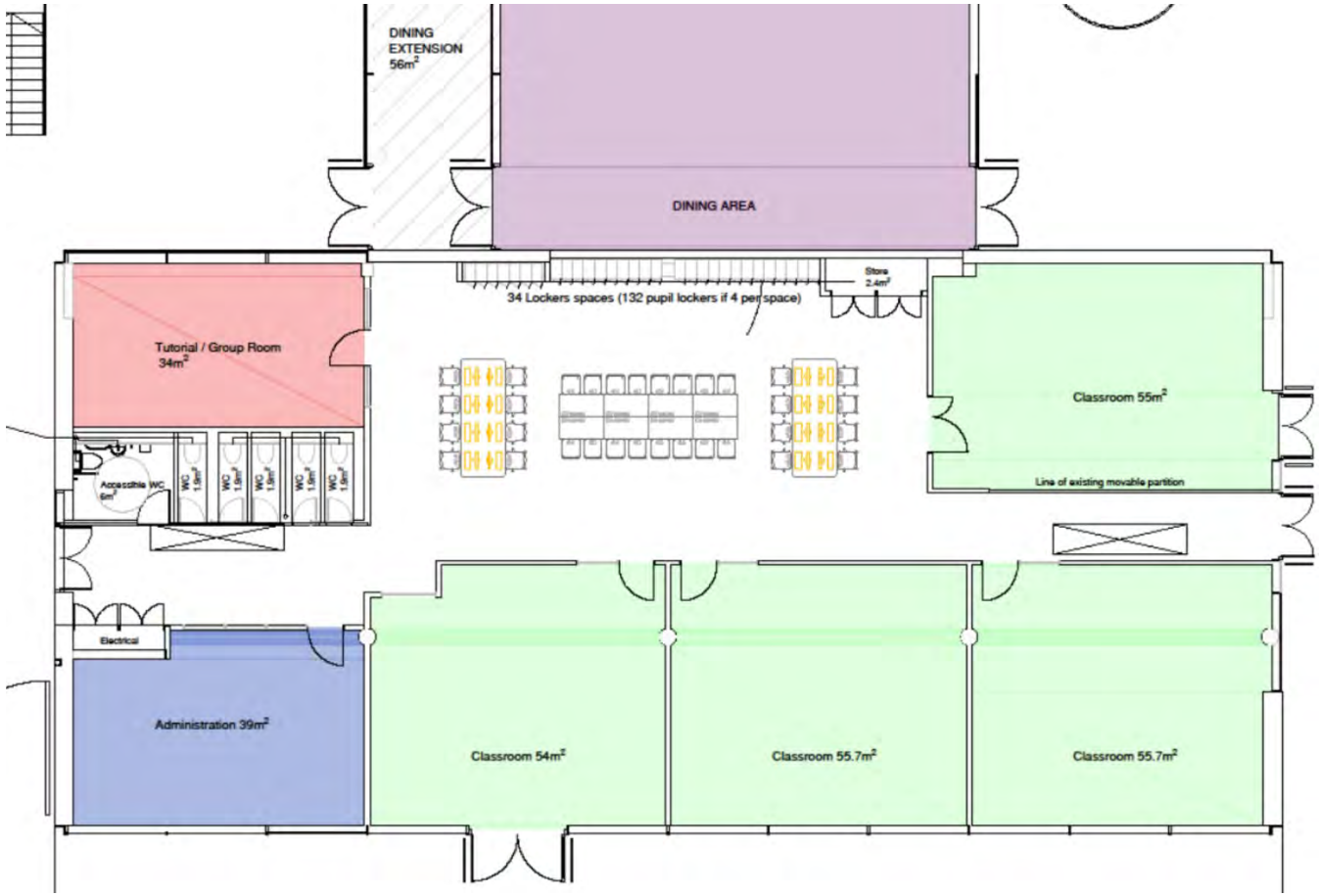


PROPOSED SKETCH OPTION 1

SKETCH PROPOSALS

3.1 REMODELLING, CONVERSION OF BRIGHTWAYS OPTION 2

3.0



PROPOSED SKETCH OPTION 2

3.0 SKETCH PROPOSALS

3.2 NEW BUILDING

The teaching accommodation required in the new building to complete the provision for expansion to 8FE is comprises:

2 classrooms of 62m2 for IT/Business and general use.
2 DT rooms for cookery & RM workshop
3 Laboratories.

The Phase 1 Feasibility study identified 3 possible locations:

A & B opposite the existing school
C at the back of the Harrington Post 16 School

Location C was not considered suitable as it is remote from the school and this area would need to be available for future expansion of Harrington School.

Location A & B must be in close proximity with the existing school to retain the new provision within the permitted development area defined in the local plan. This restricts views out from existing teaching spaces and reduce daylight to them. To mitigate it is possible to provide the new accommodation as single storey development, reducing the daylight loss but still restricting outlook from the ground floor Art and DT rooms. Single storey would be a less cost-effective build solution and result in greater loss of external amenity space. Locations A& B enable the use of existing external first floor walkways to connect to the main school reducing the need for new stairs and a lift, the school are unhappy to increase the use of these routes for safety reasons. At present pupils are only permitted to use them for emergency evacuation.

The school suggested an alternative location to the West, opposite the end of the Sports Hall. The current proposals have adopted this as the location. Connection to existing foul drainage may be an issue which should be explored early in the next design stage. The proximity to the existing SUDs swales should enable roof drainage to be discharged into the swales to avoid surcharge of the main below ground storm water drainage. The new location will also result in less disturbance to teaching during the construction phase.

The new block accommodation is laid out to emulate the existing school design (a clear requirement of the senior leadership team) with teaching spaces having an adjacent shared IT area & pupil locker provision within the main circulation zone and related accommodation accessed from this central area. Pupil's WC's are separated but in close proximity to this space; lines of sight from staff areas provide good visual control of all circulation areas.

Design Technology (cookery & workshop) and 2 IT rich classrooms are provided at ground floor with related storage. The school intend to develop the new workshop as a more up to date sophisticated technology space to encourage pupils to consider engineering and design as a desirable future with CAD CAM, 3D printing and other more sophisticated equipment.

The new science provision at first floor. As the school provide double and triple science options it is most likely that the science labs will need to be usable for Biology, Physics and Chemistry. The preparation area is therefore more generous than the EFSA brief due to a greater diversity in stored materials and remoteness from existing science making some degree of duplication unavoidable.

The planning grid has been matched to the existing to enable the external appearance to be very similar.

Toilets – both floors of the new block and the alterations proposal include the provision of 5 WCs and one accessible WC. 18 in total which added to the existing pupil toilet provision of 42 gives a total of 60, a ratio of 1 for every 20 pupils which is in accordance with the old statutory requirement and current British Standard.

Pupil Lockers – each of the three new areas incorporate pupil lockers. These are to be in recesses with locker widths of 300mm and in stacks of 4 (1800mm high). The total shown at present provide more locker provision than required for the additional pupils.

SKETCH PROPOSALS

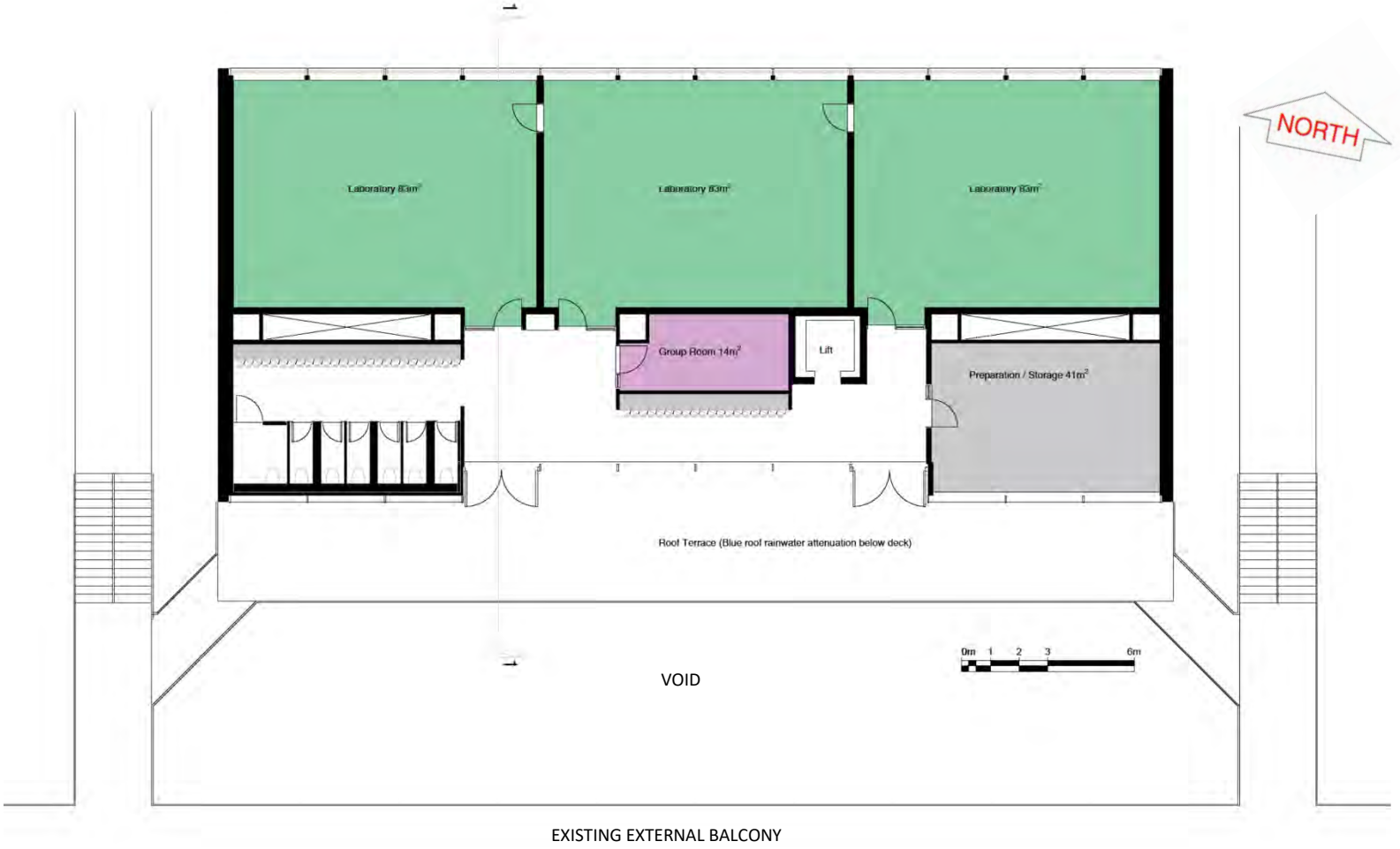
3.2 NEW BUILDING

3.0

3.0 SKETCH PROPOSALS

3.2 NEW BUILDING, OPTION 1

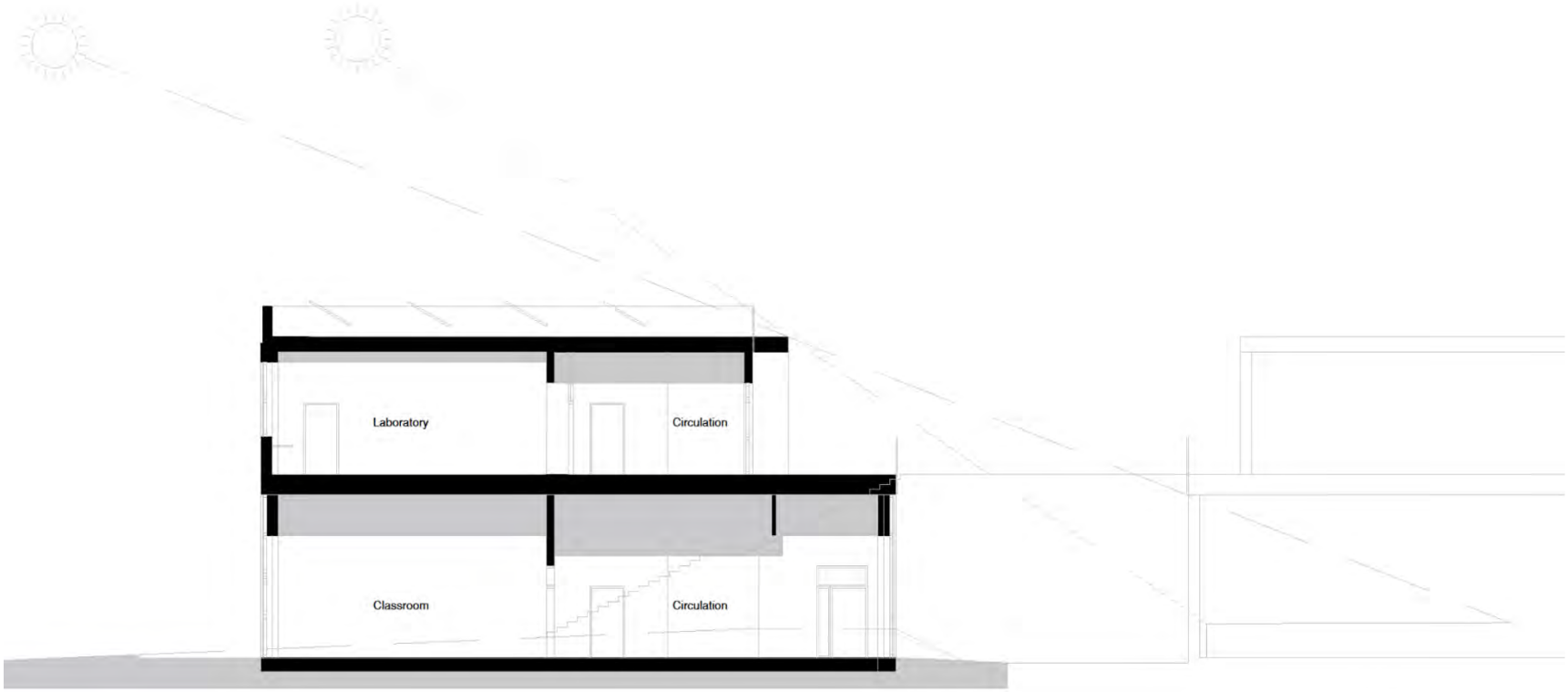
PROPOSED SKETCH GROUND FLOOR PLAN



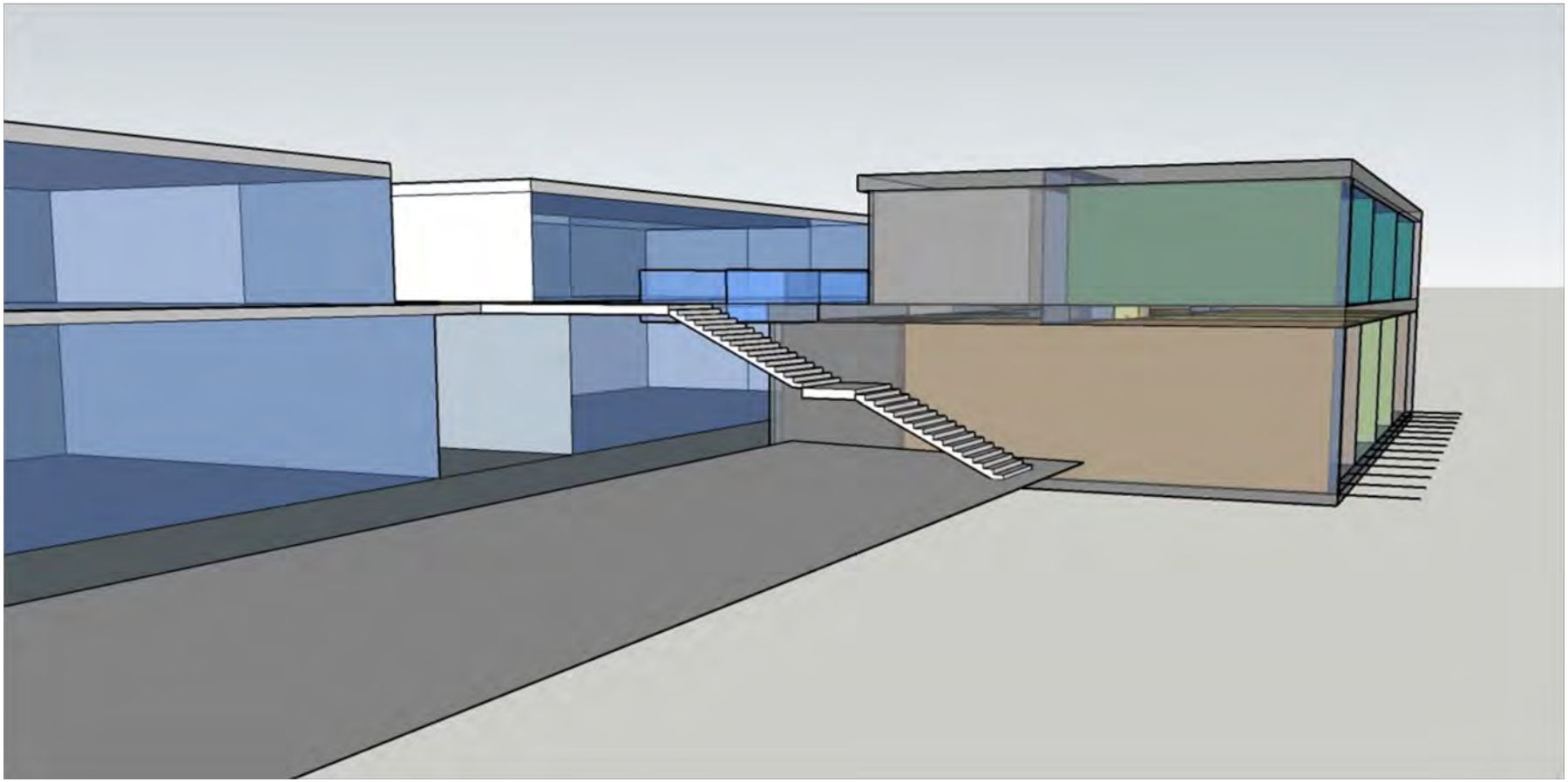
PROPOSED SKETCH FIRST FLOOR PLAN

3.0 SKETCH PROPOSALS

3.2 NEW BUILDING, OPTION 1



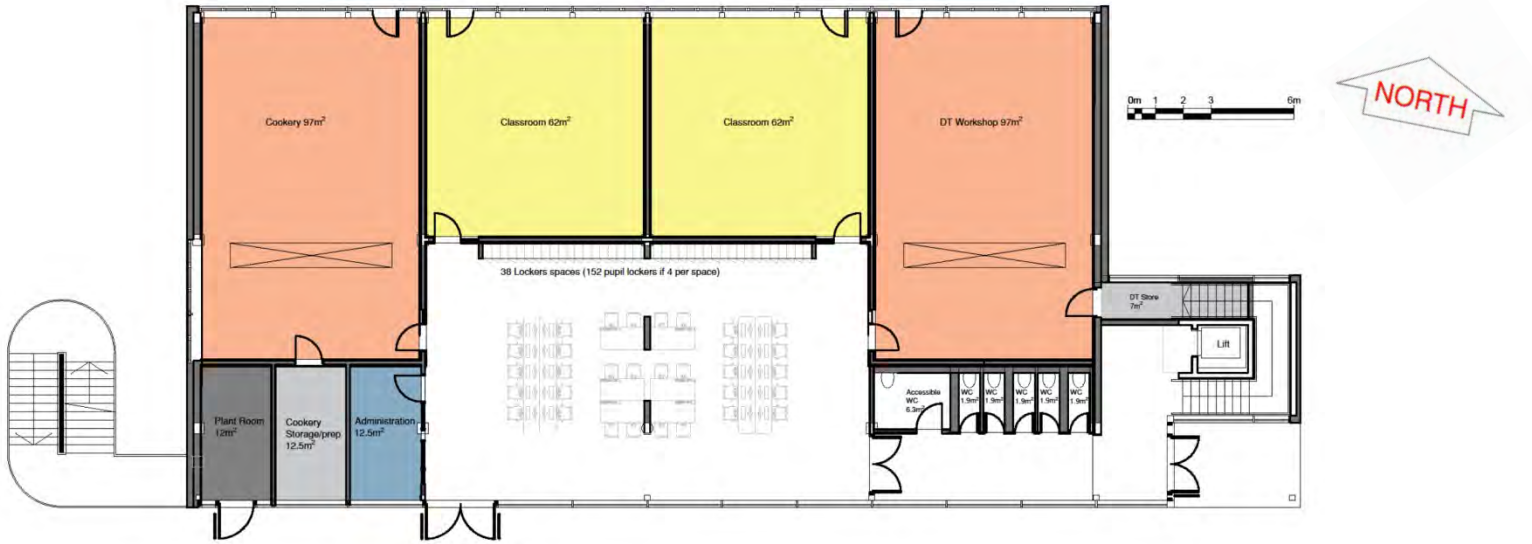
CATMOSE - NEW BLOCK
SECTION 1-1



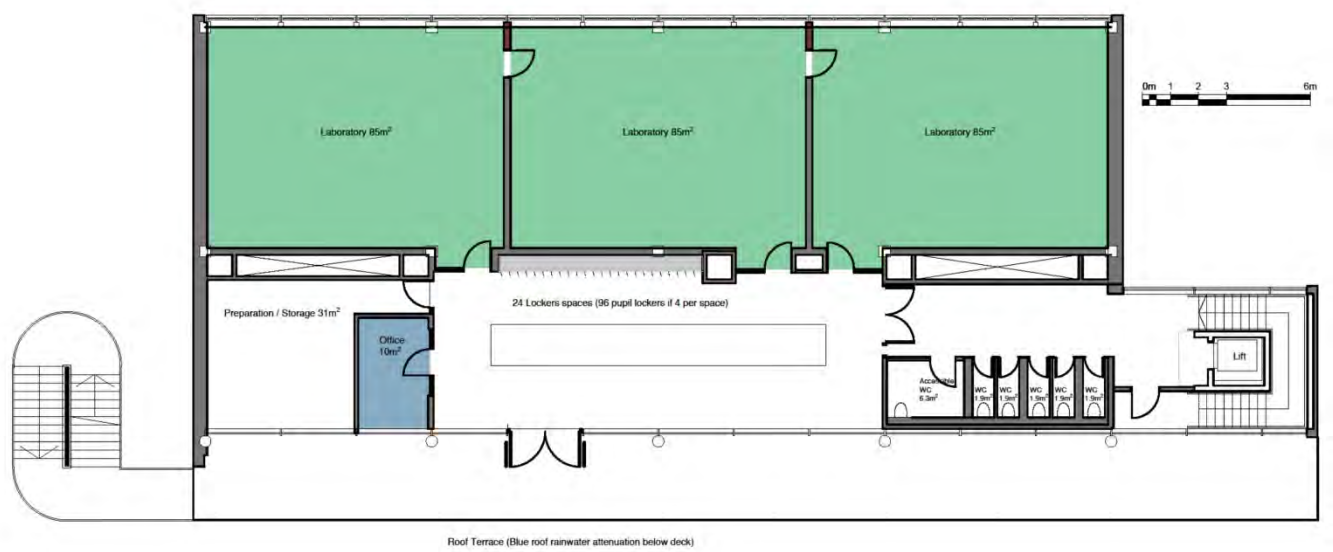
SKETCH 3D BLOCK VIEW

3.0 SKETCH PROPOSALS

3.2 NEW BUILDING, OPTION 2



PROPOSED SKETCH GROUND FLOOR PLAN



SPORTS HALL LOCATION

PROPOSED SKETCH FIRST FLOOR PLAN

4.0 M&E, STRUCTURAL & SUSTAINABILITY APPROACHES

Mechanical Strategies

The full mechanical and electrical report can be found in appendix D of this report.

Ventilation

- Aim for an air-tight building with high thermal insulation and provide heating and ventilation with the MVHR (mechanical ventilation with heat recovery) systems and incorporate night-time purge ventilation to cool teaching spaces.
- As above but utilise NVHR (natural ventilation with heat recovery) systems. Ventive have systems that can be installed in external walls and roofs that can provide up to 5 degrees of heating and cooling gain to the spaces they serve with very low energy input (80watts per unit).

Heating

Make use of Air Source heat pumps as the primary heating source, these are not suitable for radiator solutions and the school have voiced concerns with maintenance of underfloor heating. If this is to be followed the concerns should be addressed to ensure they are not a future issue. Underfloor heating does have the disadvantage of reducing flexibility for future change however this is generally provided in secondary education by the provision of a range of different sized teaching spaces that can be timetabled to accommodate changes rather than the need to resort to remodelling.

Possibly extend the existing heating system if there is adequate capacity but would require below ground ducting, which is not very desirable under the fire / service access route.

Hot Water

Local electric water heating with small storage adjacent to point of use to minimise run length heat losses and Legionella risk.

Electrical Strategies

Lighting

- Maximise daylight with high window heads for maximum room depth penetration and add light shafts from roof level to ground floor level and roof windows (avoid horizontal roof lights due to heat gain issues) at the rear of large first floor rooms and sun pipes to internal spaces.
- Use energy efficient LED fittings with occupancy detection controls and dimming connected to daylight detection.

Power

Install roof mounted Solar Photo Voltaic panels to reduce the carbon footprint of the development. If there is insufficient space on new roof for the extent of power generation targeted, then an array could be added to a suitable roof area on the existing building.

Maximise energy efficiency of all fittings.

Structural Strategies

The full structural report can be found in appendix C of this report.

- The school prefer a structure similar to the existing concrete one. Concrete production has high embodied energy which impacts on attempts to target a carbon zero solution. There is some gain from the thermal mass of exposed concrete for temperature regulation, particularly coolth storage in hot summers. If concrete is selected; maximise the use of recycled aggregate and specify a reduced cement content mix, possible use of post tensioned slabs to minimise slab thickness, the latter may require careful selection of a suitably skilled contractor and reduce competitive pricing. Propping periods may need to be extended for some mixes and other design considerations, which will impact on programme increasing preliminaries costs.
- Timber structure would be carbon neutral. Cross Laminated Timber (CLT) possibly with some Glue laminated columns or beams incorporated would be more energy efficient cleaner on site and reduce the construction period for the structural frame substantially. Less thermal mass but can still help with coolth storage.

M&E, STRUCTURAL & SUSTAINABILITY APPROACHES

4.0

Sustainable Approaches

The sustainability statement in appendix E of this report relates to sustainability by particular elements. In addition to this the following should be considered in future design stages. Some will be essential to achieving an appropriate BREEAM rating to meet planning requirements.

- Sustainable Urban Drainage Scheme (SUDS) the existing school site already incorporates a SUDS, the new building location is on porous paving and porous amenity grass areas. The roof drainage should be connected to the existing SUDS system, preferably to the swales in the playing field area, to minimise surcharge of the lower pond which the school roof, paving and parking areas drain into. Without access to the modelling for the original drainage scheme as installed being certain of the most appropriate changes will be difficult to determine, however there is probably more than sufficient capacity built into the original design. The school advised that they have not seen the main pond area close to a flood level since it was first occupied.
- Enhancement of the current site ecology / biodiversity. Incorporate a biodiverse green roof to the first-floor roof area, planted with mixed native grasses and flowering plants and varying substrate depths.
- Possible consideration of additional planting or other site areas with native trees & shrubs for carbon offset.
- Possible consideration to the incorporation of a blue roof design below a green roof finish and on the lower deck level, to reduce the roof discharge rate. This has structural implications depending on the depth to be retained, the structure will need to be designed to minimise deflection which will be potentially costly for the current 8.1m structural grid.

5.0 SITE CONSTRAINTS & OPPORTUNITIES

-

Constraints

The key constraints to expansion are:

The school site is within the Oakham & Barleythorpe Neighbourhood. Part of the school grounds to the north and west of the building falls within the 'Planned limits of development' that cover much of the green space in Barleythorpe Civil Parish. This will determine where additional buildings can be sited. No consultation with the planning department has been held.

A fire appliance access road is located around the building. This area has to be kept clear restricting development between the access road and the Planned Limits of Development.

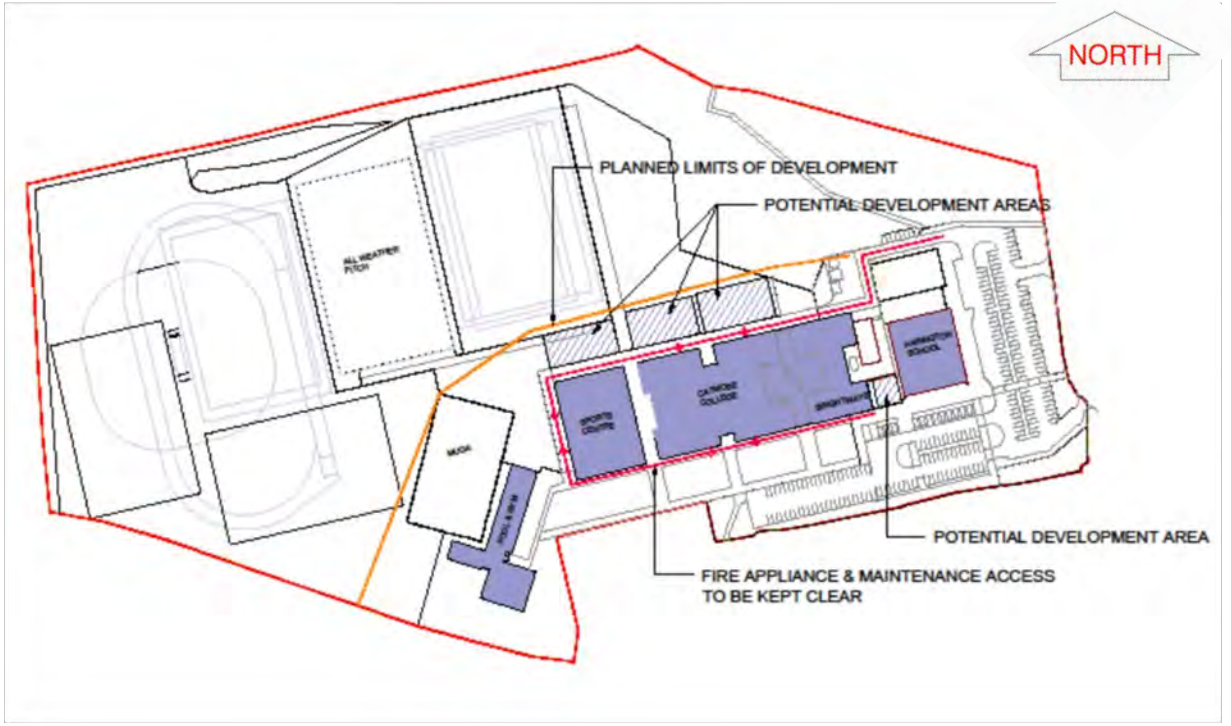
Expansion is required by September 2022.

The all-inclusive project budget of £5.25m.

Opportunities

Opportunities are limited. Possible development areas are highlighted on the adjacent plan.

It would be relatively easy to extend the dining hall into the courtyard to the west.



ANALYSIS OF EXTERNAL AREAS 6.0

CATMOSE COLLEGE & HARINGTON SCHOOL
SITE USAGE - AREA COMPARISON with GUIDANCE
(assuming expansion of both 11-16 and post 16 provision to 240 intake)

Number of pupils 11-16 8FE	1200
Number of Pupils Post 16	420

SITE AREAS	BB103		Current	
	8FE 11-16	480 post 16	Catmose	Harington
Soft outdoor PE	48000	20700	43317	shared
All Weather Pitch (counts as double area)			6185	shared
AWP Equivalent total area			*12370*	
Hard outdoor PE	2200	1030	2760	399
Soft informal and social area	3000	1440	11595	
Hard informal and social area	1400	620	2950	
Habitat	600	210	19915	
Float	6800	2900	4072	715
Minimum net site area	62000	26900	90794	1114
Non-net	8000	4100	26438	1307
Buildings			*7250*	*1307*
Swimming Pool			*1362*	
Parking and service access			*12468*	*shared*
Public Area			*5358*	
New Block Footprint			762	
Minimum total site area	69000	30000	117232	2421
Maximum net site area	69000	30000	98093	
Maximum total site area	86600	37460	119653	

5.0 ANALYSIS OF EXTERNAL AREAS

-

Analysis of External Areas in Accordance with Current Guidelines

It can be seen from the Minimum net site areas that if both the main school and the post 16 school have their intakes increased to 240pupils the net site area (excluding buildings and non-pupil areas) is 91600m^2 and that the school net site is 91908m^2 not including the allowable double counting of an all weather pitch which would add a further 6185m^2 to the school total.

The soft playing field provision does fall short if use by Harrington School pupils is considered, the current total is 55687m^2, 48000m^2 is required for 8FE 11-16. If the Harrington school is included however there is a deficit. For 1200 11-16 plus 300 post 16 pupils 64500m^2 are required. If the post 16 provision is further increased to 420 this would increase to 68700m2; at present the area counting all weather as double is 55687m^2. It would probably be desirable but not essential to consider the addition of a second all weather pitch in the underused playing field area closest to the school when/if funding is available. A typical Sport England pitch would be 101.4m x 63m an area of 6388m^2 which would count as 12776m^2 and give much greater winter use with potential for increased community use.

The school have access to very extensive indoor facilities with a large double sports hall, a further small sports hall and a swimming pool. Which will make timetabling for sport less of an issue related to the playing field deficit, particularly in winter months.

Hard outdoor PE requirement for 8FE 11-18 is 3230m^2 the two schools have a total of 3159m^2. This is a little light, consideration could be given to adding a MUGA .

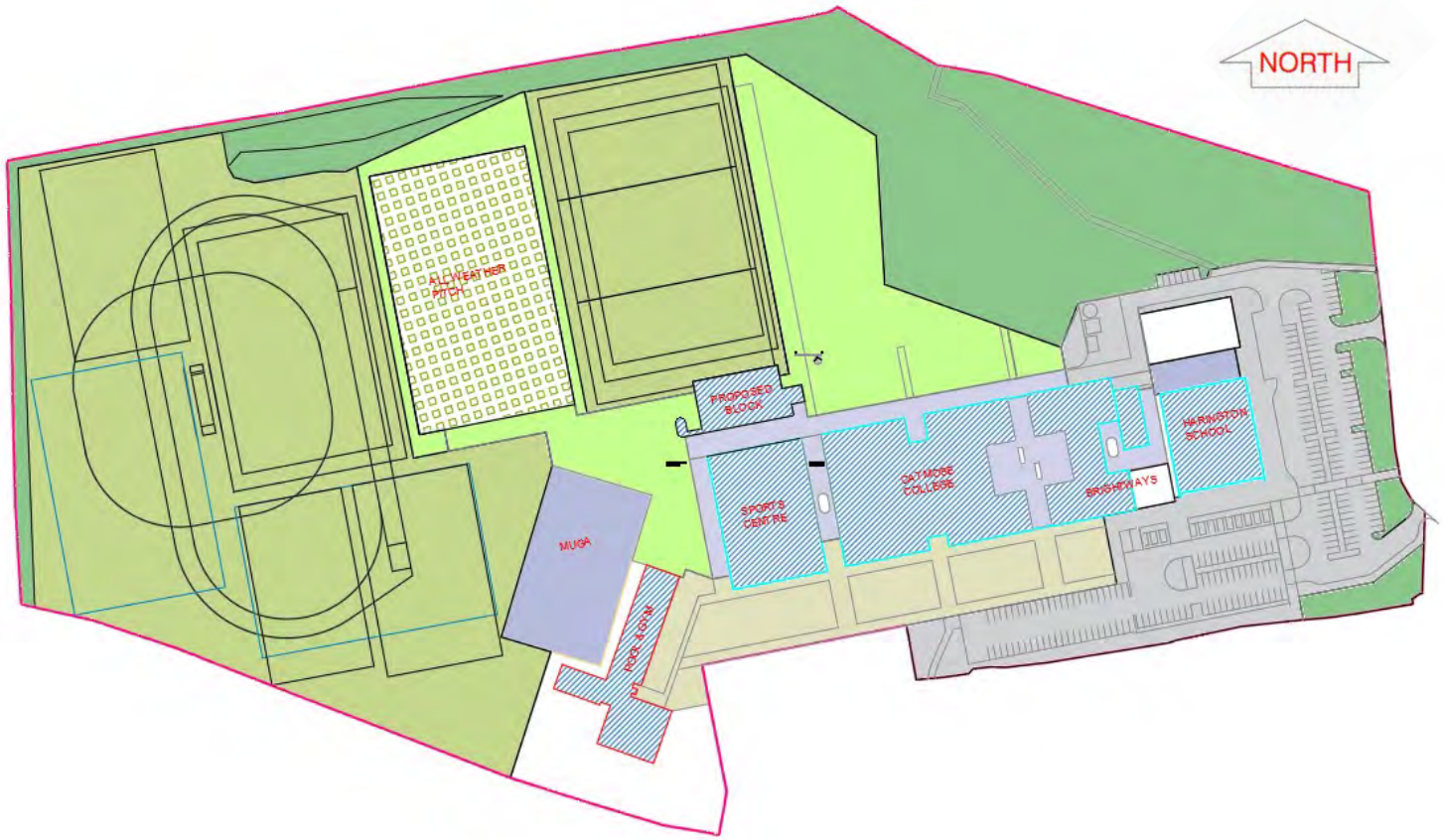
Soft informal and social areas exceed the guidance by 7155m^2

Hard informal and social areas exceed the guidance by 930m^2

Habitat areas exceed the guidance by 19105m^2

ANALYSIS OF EXTERNAL AREAS

5.0



SOFT OUTDOOR PE

ALL WEATHER SURFACE

HARD OUTDOOR PE

SOFT INFORMAL

HARD INFORMAL

HABITAT AREAS

BUILDING FOOTPRINT

PARKING ACCESS ETC

PUBLIC ACCESS AREA

USE TO BE DETERMINED

SITE BOUNDARY

7.0 PROCUREMENT STRATEGY & PROGRAMME

7.1 PROCUREMENT STRATEGY

Procurement Options

The following procurement options below could be considered for the expansion works.

1. Traditional route: appoint full consultant team for RIBA stage 2 to completion. Tender to selected contractors following a PPQ process or use an existing framework. Typically use a JCT form of contract.

2. Design & Build route: (this could be a two-stage process).Appoint a consultant team for RIBA Stages 2 & 3 to submit a planning application and prepare tender documents for D&B tender.

    a. Tender to selected contractors following a PPQ process or use an existing framework. Appoint Contractor for RIBA Stages 4 & 5 Technical design and construction. Typically using a JCT D&B contract or NEC D&B partnering contract.

    b. Tender with current information for a contractor to develop the project through RIBA stages 2-5. Typically use a NEC D&B partnering contract.

If CLT is selected for the structural frame, then early appointment of a specialist manufacturer for design input will be essential. This may make the second D&B option the most suitable route. If other two procurement options are chosen up front cost for this structure will be required at design stages 2&3.

Traditional procurement would give the client most control over the design development, specification and construction quality but normally has the longest programme and is perceived to have the greatest cost and programme risk.

A two stage D&B tender on an existing framework is likely to be the fastest route but also has a cost risk and inevitably leads to value engineering which generally involves reduced scope and / or reduced quality.

D&B tender after planning would give more control of the design and specification of the works.

Programme

The choice of construction method and materials will impact on the programme:

An off-site modular solution was not favoured by the school but would reduce the onsite programme significantly, with unit fabrication while the ground works are carried out. Possibly seeing some completed projects would overcome the school's concerns.

A reinforced concrete frame with post tensioned slabs superstructure, will have the greatest impact on the construction period.

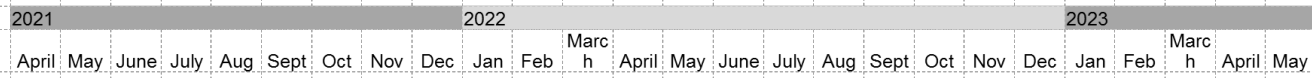
Some materials and components may have long lead in times, a CLT super structure would require early design input from the manufacturers with consequential upfront cost risk.

PROCUREMENT STRATEGY & PROGRAMME

7.2 PROGRAMME

7.0

DRAFT INDICATIVE PROGRAMME



Traditional Phase 1 - Remodelling of Brightways

- Stage 2 (Assumed start) (1 month)
- Stage 3 (1 month)
- Stage 4 (1 month)
- Tender Process (2 months)
- Lead-In (1 month)
- Construction (3 months)
- Defects Period (12 months) (Bar not shown)

Traditional Phase 2 - New Block

- Stage 2 (Assumed start) (2 months)
- Stage 3 (3 months)
- Planning Submission (1 month)
- Planning Decision Period (4 months)
- Stage 4 (Progressed at risk before planning decision) (4 months)
- Tender Process (2 months)
- Lead-In (1 month)
- Construction (12 months)
- Defects Period (12 months) (Bar not shown)

Assumptions

1 - Effect of Covid 19 on material supplies not known.
2 - Effect of Covid 19 on working processes not known.
3 - Assumed a framework will be used to tender the works.
4 - Assummed that the authority will allow stage 4 to progress prior to planning decision.
5 - Impact of Brexit on Labour and Materials availablity not known.
6 - Brightways works are entirely internal therefore planning approval is not required.

8.0 CONCLUSION & THE WAY FORWARD

Conclusion

NPS have developed the selected option from the Stage 1 feasibility study. Sketch Proposals for the remodelling of the Brightways area and for the new extension have been developed in consultation with Catmose College. For Brightways two options have been produced. Option 1 provides 5 classrooms and Option 2 4 classrooms. For the new building a two storey block is proposed in either locations B or D. The block in location B links to the existing school balcony at rear of the main building. This negates the need for staircases in this block. The block in location D behind the sports hall is completely detached and requires two staircases. Option 2 for the Brightways area and option 2 for the new block is the college's preferred option.

The all-inclusive budget for the expansion is £5.25m. A cost estimate has been produced for the college's preferred option. This option exceeds the budget. The following value engineering options are suggested to bring the scheme within budget:

Option A

Reduce area of current proposal with 2m depth reduction at GF 1m min depth reduction at FF and reduced stair width to 1250mm (1350mm o/a)

New Build GIA – ground floor 602m², first floor 497m² – TOTAL 1099m²

Remodel GIA – 484m²

Option B

Relocate to Site area B and connect to first floor bridges for access to upper floor, omit stairs and lift but there will need to be improvements to the guarding height and gates at routes in front of classrooms to overcome the schools H&S / supervision concerns for the bridges being in everyday use.

New Build GIA – ground floor 568m2, first floor 443m² – TOTAL 1011m²

Remodel GIA – 484m²

Option C

Brightways Remodel plan to provide 1 classroom at 62m² for IT rich teaching space and 4 classrooms at 55m² Toilets will have to be located in central zone as a dead-end solution currently designated for administration area.

Re-plan the ground floor option for the new build to omit 62m² classroom.

New Build GIA – ground floor 506m², first floor 463m² – TOTAL 969m²

Remodel GIA – 484m²

The Way Forward

We recommend that the scheme progresses to RIBA Stage 2 and is value engineered as necessary. Required surveys should be commissioned and a pre-application meeting held with RCC's planning department. Procurement routes should be considered. If design and build is chosen from Stage 2 onwards a consultant would need to be appointed to draw up tender documentation and review the tenders received. Should the chosen procurement route be for design and build from the end of stage 3 a design team should be appointed for stages 2 & 3. For a traditional procurement route a design team would be required for stages 2 to 6 inclusive and stage 7 'In-use' as necessary.

APPENDICES 9.0

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A APPENDICES

CLIENT BRIEF

Terms of Reference for NPS
Expansion of Catmose College to 8 Form Entry – Amended taking account of RCC dealing with relocation of Brightways

Note – Planned Relocation of Brightways is Confidential and not for sharing or discussion beyond the project group.

RCC commissioned NPS to prepare a Feasibility Study for Secondary School Expansion in Rutland. The commission comprised two stage:

- Stage 1 study looking at three existing school sites
- Stage 2 study dealing with the detail of the preferred site

Cabinet on 31 July 2020 approved the recommendation to undertake Stage Two of the feasibility study for school expansion at the preferred site of Catmose College, Oakham to deliver additional places through the development of an 8 Form Entry secondary school as identified through Stage One of the study.

The Stage 2 feasibility study brief is set out below:

The detailed Phase 2 feasibility for Catmose will build on the outputs from the phase 1 work and will
Include:

a. A review of available information
b. Developing architectural sketch proposals for the expansion options
c. Provision of a wider understanding of the overall condition of the asset.
d. Developing strategies for mechanical & electrical, structural and sustainability approaches
e. Analysis of site constraints and opportunities
f. Cost estimates for the expansion options
g. Identification of key risks including planning risk and potential implications for project performance
h. Analysis of external areas in accordance with current guidelines
i. Developing procurement strategy and programme

RCC intend relocating Brightways Day Centre to an alternative location. The preferred new property will be within RCC's existing portfolio. RCC will manage the relocation and all other matters, to enable the planned extension of Catmose College within the school expansion scales. RCC will keep Catmose College and NPS updated about activity and progress for Brightways, along with any impact arising from issues that may impact on the planned extension of Catmose College. The Brightways premises are therefore expected to be available to support the expansion of Catmose College.

Client and Catmose College Engagement

RCC are the instructing client but Catmose College will jointly agree the terms of reference of the Stage 2 feasibility study and have full input to the report outputs as set out below:

NPS will have an initial project meeting with RCC and Catmose college to understand roles and responsibilities and agree timings and outputs
Initial sketch proposals will be produced jointly with Catmose College.
Sketch proposals will be shared at a final engagement meeting with RCC and Catmose College, with any resulting feedback used to develop final sketch proposals.
Final sketch proposals will be issued to the NPS Design Team for their input.
A procurement strategy, project programme and project risk register will be developed.
Full cost estimates will be produced.
A draft of the report will be shared with RCC and Catmose College for comment. Any comments/amendments will be made by NPS and agreed by RCC and Catmose College prior to final issue.

RCC
M Walsh
Head of Property Services
15 Oct 2020

QS

ORDER OF COST ESTIMATE - STAGE 1

for Rutland County Council

Feasibility

Catmose College

School expansion to 8FE

14.12.2020

nps group

B APPENDICES

COST ANALYSIS

CONSTRUCTION ORDER OF COST ESTIMATE

nps group

CONTENTS

104327 Rutland Catmose Stage 1 Feasibility 14.12.2020 Final

CONSTRUCTION ORDER OF COST ESTIMATE

nps group

1.1 EXECUTIVE SUMMARY

1.1.1 INTRODUCTION

The proposal evaluates whether the school's buildings and site have capacity to support an expansion to 8FE. The expansion work is located within the school grounds of Catmose College, Rutland County Council.

Quantities for Building Works have not yet been determined due to insufficient design information, the areas used have been provided by the Architect.

This Cost Estimate is based on the following scope of works: new build block and remodelling works to some areas of the existing together with associated external works

A number of assumptions have been made in order to complete this estimate. These are noted under section 2.1.2 Basis and Assumptions.

NPS London Ltd Project 09-01-104327

School Type	Location	BCIS Location Factor	BCIS Inflation Factor
College/Secondary	Rutland County Council	107	1.22%

1.1.2 KEY FINANCIAL INFORMATION

A summary of the construction and project costs is as below and detailed buildup is included in this document.

Item	Total Construction Cost	Cost/ m2 (GIA)	Total GIA m2		Cost per pupil *	
8FE Expansion	£4,756,300	£2,777	1713		£15,854	**

Item	Total Project Cost	Cost/ m2 (GIA)	Total GIA m2		Cost per pupil *	
8FE Expansion	£5,515,300	£3,220	1713		£18,384	**

*** based on Pupil 300

B APPENDICES

COST ANALYSIS

CONSTRUCTION ORDER OF COST ESTIMATE

nps group

1.1 EXECUTIVE SUMMARY

1.1.3 VALUE FOR MONEY

In assessing whether the construction proposal is value for money, it may not take into consideration other factors i.e. school pupil & staff disruption, access difficulties, planning consent, environmental issues increased traffic impact or school preferences.

1.1.4 AREA SUMMARIES FOR EACH PROPOSAL

In assessing the likely construction costs, a more detailed assessment with different rates were applied depending on the type of construction, i.e extension, remodel or new links between existing and new works, as table below.

	GIA/m2		Remodelling (m2)	Total Including New, Remodel and Links (m2)
B) 2FE New Block	1229		484	1713

Version	Date	Description	Originator	Authorised by	Date
Final	14.12.2020	Feasibility	Marian Asare-Boapeah	Keith Dyke	14.12.2020

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2.1 BASIS AND ASSUMPTIONS

2.1.1 BASIS FOR THE ORDER OF COST ESTIMATE

This estimate is based on a collection of in house data and school projects NPS are currently working on as well as BCIS analysis. A location factor from BCIS has been applied to ensure the costs are relevant to Rutland County Council.

The Information Provided follows the requirements of NRM Checklist.

Drawing/Document Register:

The following design information received :

2.1.1.1 Architecture

NPS-ZZ-00-SK 001 Rev P1
NPS-ZZ-01-SK 002 Rev P1
NPS-ZZ-00-SK 003 Rev P1

2.1.2 PRICING ASSUMPTIONS

1 All costs are based on normal working hours. Costs associated with night working and weekends are not allowed for within this estimate.
2 Costs are based on current BCIS Cost Analysis, together with cost from Education projects NPS London are currently working on.
3 Areas in this report are provided by the Architect and based on above design, more detailed measure will be carried once the scheme is signed off and developed.

2.1.2.1 Fit Out

1 No specification available for the fit-out, scope of works based on NPS site survey.
2 Allowance for new floorings, small power and data adaptation works, acoustic treatments, fixed fittings and fixtures to general/ classrooms, new Entrance Gate, and etc.

2.1.3 GENERAL EXCLUSIONS

The following general costs have been excluded from this report: -

1 VAT
2 Land costs, Professional, Legal and survey fees and other fees or Finance costs.
3 Planning and Building Control fees (unless stated)
4 Development management costs
5 Party Wall Agreements including any easements requirements for sub station access
6 Section 105 works
7 Section 106 payments or contributions
8 Section 278 works that may be required outside the site boundary
9 Rights of Light, Daylight/Sunlight matters
10 Out of hours working
11 Cost of maintenance agreements

B APPENDICES

COST ANALYSIS

2.1 BASIS AND ASSUMPTIONS

GENERAL EXCLUSIONS - Cont'd

12 Internal Management costs (unless stated)
13 Rights of Light compensation allowance
14 Client Contingencies (unless stated)

2.1.4 PROJECT SPECIFIC EXCLUSIONS

The following project specific costs have been excluded from this report: -

1 Works to other buildings and highways outside the specific site demise
2 Removal of hazardous or contaminated material arising from the ground or demolition works.
3 Ground improvements or adverse ground conditions
4 Relocation, diversion or replacement costs in relation to existing services
5 Abnormal costs, other than those stated
6 Protective Installations such as sprinklers.
7 Oversailing (cranes/access equipment etc.)
8 Compensation to neighbours during the construction work that may be required
9 Professional fees (unless stated)
10 Archaeological works Public Art and Sculptures
11 Movement of school furniture, teaching aids or staff/pupil work

2.1.5 MARKET TESTING

This Order of Costs Estimate is based on current BCIS Cost Analysis, together with cost from Education projects NPS London are currently working on.

2.1.6 DEVELOPMENT PROGRAMME

The order of cost estimate is based upon the construction works being completed in a single phase. The development programme is not defined at this stage and costs have been allowed to September 2021, when construction works is anticipated to commence on site.

2.1.7 PROCUREMENT

This cost plan assumes that the project will be competitively tendered on two stage design and build procurement route, using either an appropriate Framework Agreement or through a Selective Questionnaire process. We have also included 15% as a Contingency allowance for Design Development and Construction Risks at this stage of the project.

2.1.8 INDEXATION

Costs included in this report are considered to reflect 4Q 2020 market conditions based upon achieving competitive market returns. We have made an allowance for cost inflation of the works and costs have been assessed on the basis of 3Q 2021, programme notes provided assumes construction works commences September 2021. No allowance has been made for the likely impact that Brexit or COVID-19 restrictions may have on the economy.

2.1 BASIS AND ASSUMPTIONS

2.1.9 GIFA AREAS
The estimate has been based on the GIA's for the building as provided by the architect.

2.1.10 DISCLAIMER
This cost plan has been prepared to assist Rutland County Council in the control of the design development and to allow formal sign off.

B APPENDICES

COST ANALYSIS

CONSTRUCTION ORDER OF COST ESTIMATE

3.2 COST PLAN SUMMARY

Rutland BCIS Location 108 GIA 1,713 m2
NIA 1,625 m2

				Total Project Cost
1	**Facilitating Works**			86,375.00
2	**Building Works Estimate**			
	New Works			2,439,329.00
	Works to Existing Building			544,900.00
	External Works			167,850.00
	BREEAM, L2 Allowances and Sustainability Items			84,260.00
				3,322,714.00
3	**Main Contractor Prelims**		17.00%	564,861.38
4	**Contractor OH&P**		10.00%	388,757.54
5	**Contractor Design Fees**		5.00%	213,816.65
				4,490,149.57
6	**Construction Risk**		15.00%	673,522.44
7	**Construction Inflation**	(Q3 2021)	1.22%	62,996.80
	BCIS Location Factor Adjustment	107/118	-9.00%	- 470,400.19
				4,756,268.62
	Total Construction Cost			**4,756,300.00**

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CONSTRUCTION ORDER OF COST ESTIMATE

3.2 COST PLAN SUMMARY

Rutland BCIS Location 108 GIA 1,713 m2
NIA 1,625 m2

8	**Professional Fees (Stage 2-6)**		312,611.95
9	**Additional Costs**		
	Disbursements		31,300.00
	BREEAM Assessment Fees		2,500.00
10	**Client Costs**		
	ICT and FF&E		150,000.00
	Contingency	5.00%	262,635.60
	Management Cost		Excluded
			5,515,347.55
	Total Project Cost		**5,515,300.00**

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B APPENDICES

COST ANALYSIS

CONSTRUCTION ORDER OF COST ESTIMATE

Base 327

4.1 WORKINGS COST PLAN SUMMARY - 8FE

		Quantity	Unit	Rate	Sub-Total	TOTAL
1	**Facilitating Works Estimate**	**1,800**	**m2**			
	Site Preparation					
	General site clearance, strip site of all remaining vegetation, debris, perimeter fences and railings etc	**1,800**	m2	35.00	63,000.00	
	Demolition				-	
	Demolition of existing buildings including grubbing up foundations	**-**	m2	65.00	-	
	Break up existing hard paved areas, including grubbing up shallow brick wall foundations	**735**	m2	25.00	18,375.00	
	Asbestos Removal				-	
	Provisional allowance for asbestos surveys and removal works	**-**	Item	5,000.00	-	
	Works to existing buildings & External works				-	
	Alteration works to existing buildings, breaking through, blocking up etc	**-**	Item	25,000.00	-	
	Reuse of existing fixtures & fittings				-	
	Remove & refit existing furniture & equipment (allowance only, scope to be determined)	1	Item	5,000.00	5,000.00	
		Sub Total			**86,375.00**	**86,375.00**
2	**Building Works Estimate**					
	New Build Extension and Remodelling	**1,713**	**m2**			
	New Build - 1nr two story new block				-	
	New Build	**1229**	m2	1,901.00	2,336,329.00	
	Abnormals: E.O.additional Staircase	2	Nr	7,500.00	15,000.00	
	Abnormals: E.O.WC fit out	4	Nr	8,000.00	32,000.00	
	Abnormals: E.O.WC fit out - Accessible WCs	2	Nr	3,000.00	6,000.00	
	Abnormals: E.O.Science Lab	3	nr	5,000.00	15,000.00	
	Abnormals: E.O Computer Science	2	nr	2,500.00	5,000.00	
	Abnormals: E.O DT Room	1	nr	5,000.00	5,000.00	
	Abnormals: Lift	1	Nr	25,000.00	25,000.00	
		Sub Total			**2,439,329.00**	**2,525,704.00**
	Major Refurb					
	General ? Multiple rooms	**484**	m2	1,100.00	532,400.00	
	Abnormals: E.O.additional Staircase	**-**	Nr	7,500.00	-	
	Abnormals: E.O.WC fit out	**-**	Nr	2,500.00	-	
	Abnormals: E.O.Science Lab	**-**	nr	5,000.00	-	
	Abnormals: E.O Computer Science	1	nr	2,500.00	2,500.00	
	Abnormals: E.O DT Room	2	nr	5,000.00	10,000.00	
		Sub Total			**544,900.00**	**3,070,604.00**

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CONSTRUCTION ORDER OF COST ESTIMATE

4.1 WORKINGS COST PLAN SUMMARY - 8FE

Base 327

	Quantity	Unit	Rate	Sub-Total	TOTAL
Minor Refurb					
General	-	m2	500.00	-	
Sub Total				-	3,070,604.00
Decorations only Refurb					
Sub Total				-	3,070,604.00
External Works					
Hard Landscaping - allowance	300.00	m2	197.00	59,100.00	
Soft landscaping - allowance	765	m2	50.00	38,250.00	
Existing Drainage Works (outside boundary)				-	
Alterations to Surface water drainage	1	item	15,500.00	15,500.00	
Alterations to Foul water drainage	1	item	15,000.00	15,000.00	
Existing Services (outside boundary)				-	
Mechanical upgrade	1	item	15,000.00	15,000.00	
Electrical upgrade	1	item	15,000.00	15,000.00	
Data upgrade	2	item	5,000.00	10,000.00	
Sub Total				167,850.00	3,238,454.00
Other Abnormals					
BREEAM	1,713	item	20.00	34,260.00	
Carbon Reduction (L2A compliance)	1	item	50,000.00	50,000.00	
Sub Total			-	84,260.00	£3,322,714.00
4 TOTAL			Rounded £ '000	3,322,714.00	£3,322,700.00

Notes: See Cost Plan Summary and Basis & Assumptions

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B APPENDICES

COST ANALYSIS

5.1 PROFESSIONAL FEES SUMMARY

9th December 2020

		£	
(i) Professional Fees :		312,612	312,612
Design Team and Project Management Fees: (1)			
* Full multidisciplinary design team (Architect, QS, SE, M&E & Principal Designer) based on design & build procurement, stages 2 to 6 @ 6% of construction costs (1)	270,342		
Civil Engineer @ 0.35% (5)	15,770		
Energy Consultant (5)	12,000		
BREEAM Assessor (5)	9,500		
Acoustic Consultant (5)	5,000		
Technical Project Manager Fees			
Clerk of Works Fees: (3)			
* Clients representative to monitor quality of works on site.			
(ii) Disbursements:		31,300	
* Planning application fee (4)	9,000		
* Building Control plan fee (5) (12)	2,200		
* Building Control inspection fee (5) (12)	4,400		
* Drain survey (5) Use as built drawings.	0		
* Soil and contamination survey (5)	9,000		
* Land survey and services search (4)	1,500		
* Asbestos survey and re-instatement (4) (5)	0		
* Structural investigations (5) (6)	0		
* Condition survey (5) (7)	0		
* Fire assessment survey (5) (8)	0		
* Noise / vibration survey (5)	2,000		
* Party Wall Surveyor (5)	0		
* Environmental survey (5)	0		
*Archaeological Assessment & Listed Building Report (5)	0		
*Air quality survey (5). May be able to use survey from the main development.	0		
*Arboricultural Survey (5)	0		
*Phase 1 Habitat & Invasive Species Survey	1,200		
*Transport Assessment (5)	2,000		
(iii) FFandE & ICT Works: (5)		150,000	
(iv) Client Set-up Costs : (14) No allowance included.		0	
(v) Client Contingency : (14) 5% of total project cost		see cost plan summary	
(vii) Client Site waste Management Plan Production : (14)		0	
* Fee allowance for clients responsibilities under The Site Waste Management Plans Regulations 2008			
(viii) BREEAM : (15)		2,500	
* Fee allowance for certification to required standard.			

Notes :
(1) : Overall fee % allowance for Architect, Quantity Surveyor, Structural Engineer, Mechanical and Electrical and Engineer and Principal Designer.
(2) : Allowance for CDM service relating to clients obligation on Health and Safety matters required between scheme inception to
(3) : Clerk of Works service to be agreed with client for a pre-agreed period per day, to ensure daily presence on site and to monitor quality
(4) : Assumed survey/reinstatement costs only, removal works if required need separate funding.
(5) : Allowances only at this stage
(6) : Potential investigation of existing foundations / structure.
(7) : To inform adequacy of condition related works allowance within costings. Using client supplied document.
(8) : To inform of any issues with existing schools proceedures/management.
(9) : No works in proximity to boundaries.
(10) : Value of works is outside strandard fee scale range, therefore cost assumed subject to formal quote.
(11) : Planning - internal remodel only no external changes, therefore application not required.
(12) : Local to proposed WC installation only.
(13) : Works only to existing building predominantly interior therefore not required.
(14) : Allowance to be confirmed with Client.
(15) : Not applicable to remodel / refurbishment works.
(16) : Figures based on QS estimate.
(17) : Assumed works undertaken under 1 contract with separate phases.
(18) : Works proposed do not include teaching spaces therefore no requirement
(19) : Not used
(20) : VAT not included in figures

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6.1 SUMMARY OF AREAS

2FE Expansion	Area
A - Site Area - (Compound)	1,800 m2
B - Foot Print of New Build	735 m2
C - New Build - GIA	1,229 m2
D - New Build - NIA	1,161 m2
E - Remodelling Works - Existing Building GIA	484 m2
F - Existing Building - NIA	464 m2
G - Hard Landscaping	300 m2
H - Soft Landscaping	765 m2
Total NIA	1,625

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STRUCTURAL REPORT

Introduction

Engenuiti has been appointed by NPS Group to provide structural engineering design services for the proposed new classroom block at Catmose College, Oakham, Rutland, LE15 6RP. The site is a greenfield location adjacent to the existing Catmose College School

The purpose of this Structural Engineering RIBA Stage 2 Report is to present the conceptual structural engineering design proposals as they stand. The topics covered are:

1. Structural Framing Options

- **Concrete Solution**
- **Cross Laminated Timber (CLT) Solution**
- **Summary**

2. Structural Framing Carbon Calculation

3. Foundation Options

The proposed new building footprint is approximately 32m long x 20m wide at ground floor, and is approximately 32m long x 16m wide at first floor with a 4m balcony. There is a staircase and lift core on one side of the proposed new block that is to have access to all floors including the roof.

Structural framing options are described based on the architectural stage 2 design and foundations and substructure solutions are suggested from limited desktop study data. For a full understanding of the foundation options (including depths) a full site investigation is to be completed at a later stage.

This report has been produced for the exclusive use of NPS Group and Catmose College, and should not be used in whole or in part by any third parties without the express permission of Engenuiti in writing.

This report should not be relied upon exclusively for decision making purposes and should be read in conjunction with other documents and drawings produced by the design team.

The information being communicated as part of this RIBA Stage 2 report is intended to provide the basis for a preliminary and initial cost plan and for the client to understand their options structurally. The RIBA Stage 2 design information does not constitute a complete and fully detailed technical design, and suitable cost allowances should still be made in respect of risk and design development.

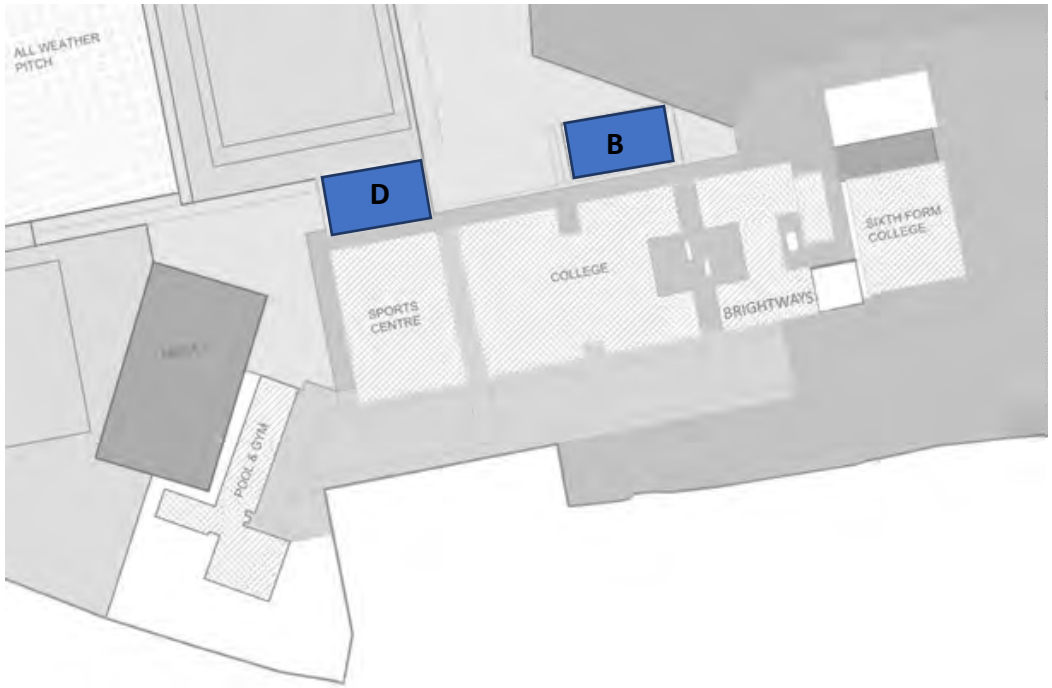

Figure 1 - Site plan showing two potential site locations

Structural Framing Options

Two possible superstructure options are proposed:

Concrete Frame

A concrete frame is the baseline scheme as it is a tried and tested approach that offers the benefits of exposed thermal mass and robust acoustic performance. It is proposed to have exposed soffits on the scheme. A concrete frame with flat slabs can achieve the 8m grid that fits to the proposed architectural layout. Flat slabs offer the additional advantage of facilitating horizontal services distribution. That said, it should be noted that reasonably thick slabs will be required at these spans. To make the structure more efficient, it would be necessary either to reduce the grid spans or potentially to adopt downstand beams on columns lines.

Figure 2 Concrete Frame

Cross Laminated Timber Frame

An alternative to the concrete frame solution is a cross laminated timber structure (CLT). CLT again offers good acoustic performance and excellent airtightness. CLT structures have the added advantage of being extremely quick to erect with minimal site waste or mess. As with the concrete frame option, 8m spans can be achieved, and become more efficient if there are at least two adjacent spans so as to achieve continuity. That said, 8m is beyond the most efficient span length for pure CLT, and there may be some material efficiencies in introducing some primary steel or glulam beams in the primary spanning direction at closer (say 3-6m) centres with the CLT then spanning the secondary direction between primary beams.

The additional benefits to a CLT frame are its sustainability. As typically 50% of a building's lifetime carbon output is in the building itself (the other 50% is in operational carbon), timber is considered a carbon sink or carbon negative structure and can offset the carbon emissions in areas that will require carbon to produce (e.g the concrete foundations). This is covered in more detail in the Structural Framing Carbon Calculation.

Downstand beams have been proposed to reduce the slab depth and reduce the 8m bays into 4m bays. This results in a 3-bay 4m span totalling 12m that is within the practical limit of 13.5m to transport a CLT. Alternatively, 16m double spans could be reviewed at a later stage with flat soffits and a deeper 280mm slab.

Another arguable benefit is the appearance of CLT. As a natural wood

Figure 3 CLT Frame

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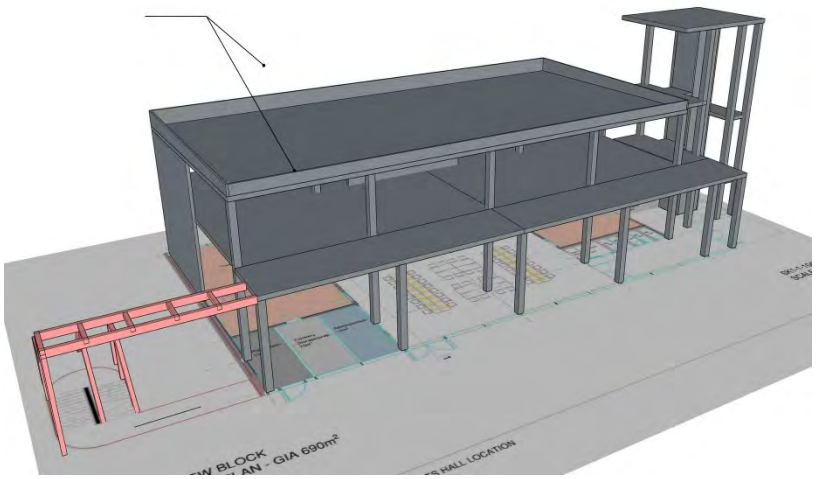
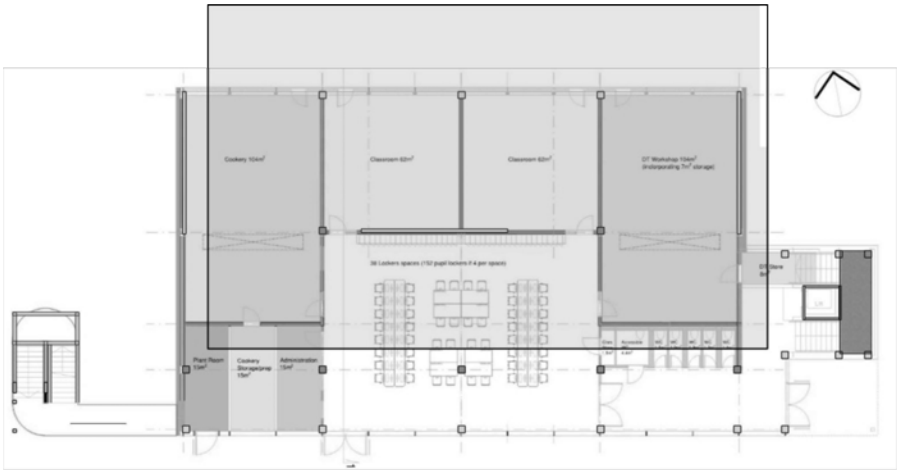
STRUCTURAL REPORT

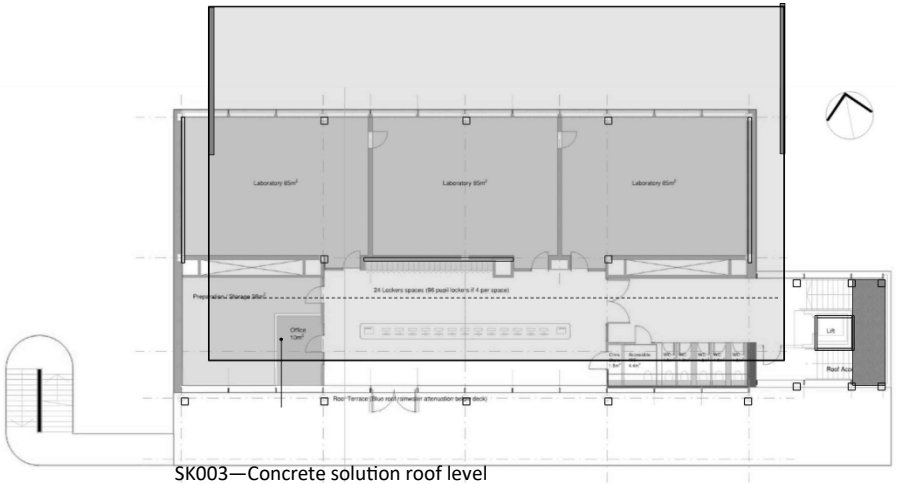
Structural Framing Options - Concrete



SK001—Concrete Solution 3D

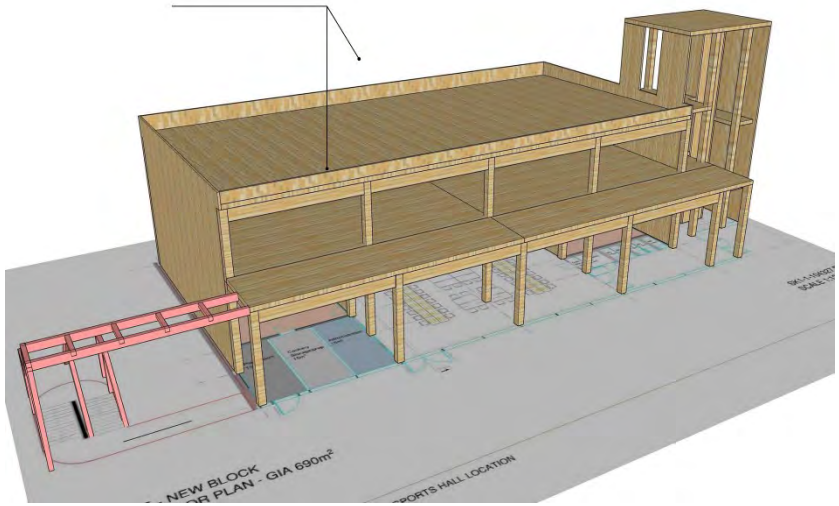


SK002—Concrete solution first floor

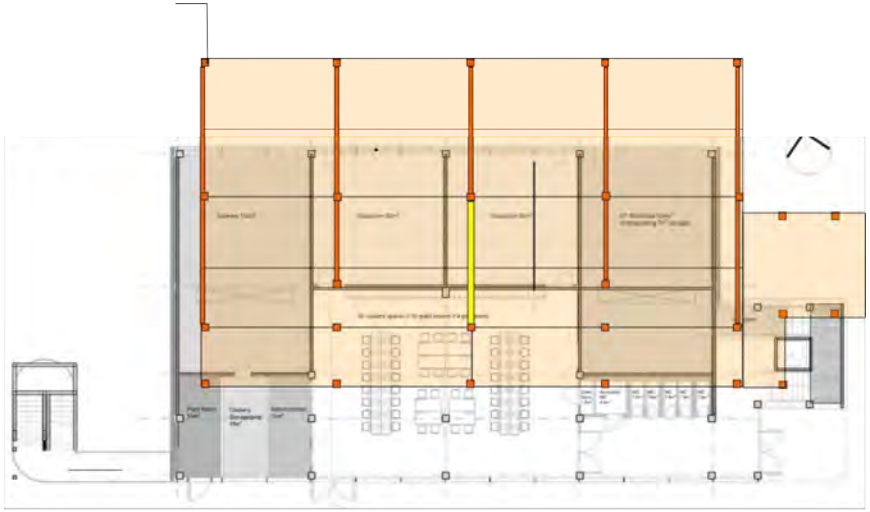


SK003—Concrete solution roof level

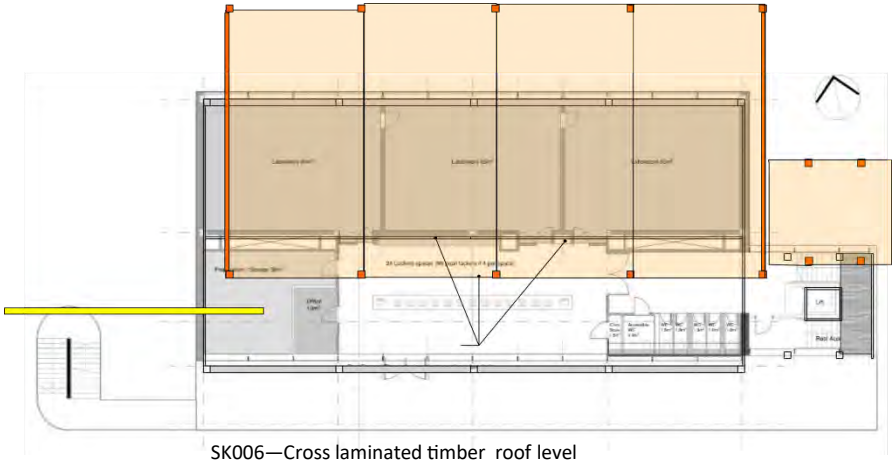
Structural Framing Options – Cross Laminated Timber (CLT)



SK004—Cross laminated timber 3D



SK005—Cross laminated timber first floor



SK006—Cross laminated timber roof level

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STRUCTURAL REPORT

Structural Framing Options – Summary

Concrete Pros

- Robust
- Thermal Mass ((thereby reducing/eliminating need for mechanical cooling)
- Flat soffits possible, facilitating horizontal services distribution
- Minimal structural walls so maximal flexibility/ adaptability of spaces
- Good acoustic performance

CLT Pros

- Robust assuming properly specified and applied waterproof membranes
- Notably reduced carbon emissions when compared to the concrete option.
- Very quick to build. Also construction is clean (as minimal wet trades and low wastage)
- Lighter weight structure so foundation sizes reduced

Durability Considerations

Both the concrete and timber solutions will be visually flat roofs. However, a nominal 1:40 fall to achieve a minimum 1:80 fall once deflections are taken into account must be allowed for at roof level and at the balcony level for the CLT option.

CLT is made from untreated softwood. It is recommended that that CLT should have a two-layer direct applied waterproof membrane, and minimum 300mm concrete upstands around the perimeter timber. Careful consideration of drainage points and detailing for waterproofing will be required, particularly if green or blue roofs are to be incorporated.

Nominal 1:40 to achieve 1:80 Fall

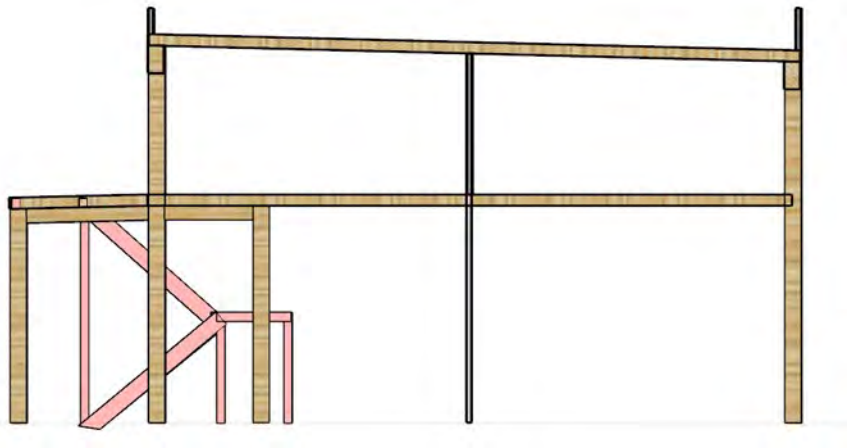

Figure 4 - Nominal Falls Required

Structural Framing Carbon Calculation

Rutland Council has agreed draft new targets to tackle climate change. A Climate Change Action Motion was presented by Councillor Gordon Brown, Cabinet Member for the Environment, at Rutland's Full Council Meeting on Monday 14 October 2019.

"It's clear that the impacts of climate change are causing serious damage around the world and that we need to do all we can to try and keep global temperature rises below 1.5°C. Local councils have a duty to act and cannot simply wait for national government to change its policies. We fully accept this important responsibility and will soon be putting forward proposals for a wide range of measures aimed at making our operations more sustainable and environmentally friendly. This is something that all local authorities must do if we are to help limit the effects of climate change on a global scale."

From this the council have set the following commitments

- Make sure the Council's activities achieve a net-zero carbon footprint before 2050
- Achieve 100% clean energy across all council functions by 2050 or earlier
- Provide a climate change impact assessment on all relevant council decisions
- Request that scrutiny panels consider the impact of climate change and the environment when reviewing council policies and strategies
- Review council activities to take account of production and consumption emissions
- Set up a Climate Change Partnership Group involving councillors, residents, young people, climate experts, businesses, and other relevant groups
- Encourage the UK government to provide the powers, resources and funding needed to help tackle climate change

With typically over 50% of a building's carbon output coming from the construction itself, it is important to consider the structural options in respect to their carbon output in production and manufacturing.

A simple carbon calculation has been carried out to compare concrete and CLT options. The carbon calculation takes into account the following elements

Substructure

- Concrete Strip Foundations
- Concrete Slab at GF

Superstructure – Concrete Option

- Concrete slabs at first and roof level
- Concrete Columns
- Concrete Walls

Superstructure – Timber Option

- Timber slabs at first and roof level
- Timber Columns
- Timber Walls
- Glulam Beams

The carbon calculator does not include the following at this stage

- Facades and finishes
- The lift core structure
- The stair structure

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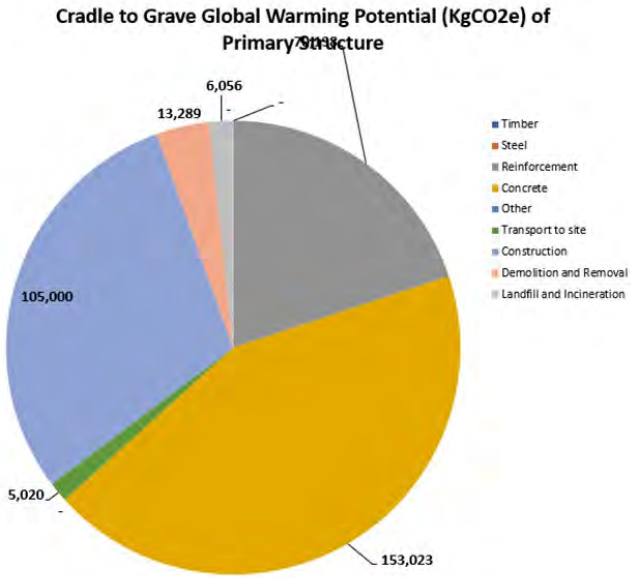
STRUCTURAL REPORT

Structural Framing Carbon Calculation

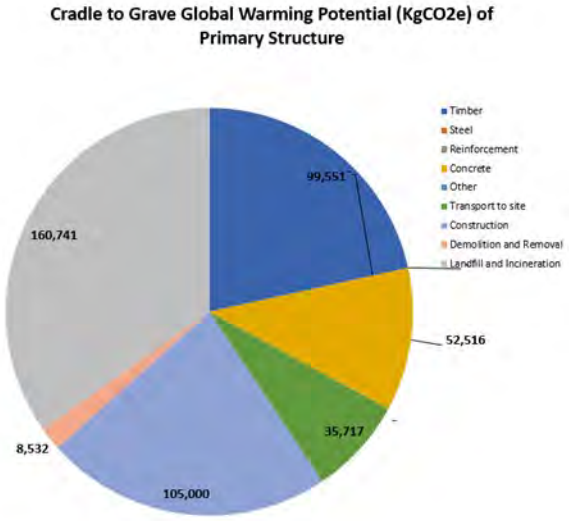
The following shows the embodied carbon for both the concrete and timber options. The embodied carbon of the CLT option is approximately 1/3rd of the concrete option. The RIBA have set a target for 2030 for embodied carbon to be <300kg/CO2 m2. However it is worth noting that the calculations below do not include fit out or façades.

Concrete – 305kg/C0^2 m^2



CLT – 85kg/C0^2 m^2 (*)

***Accounts for sequestration**



Foundation Options

A full site investigation is required to determine the foundation options.

A desktop study has been undertaken to look at boreholes records in the area and adjacent similar precedent foundations.

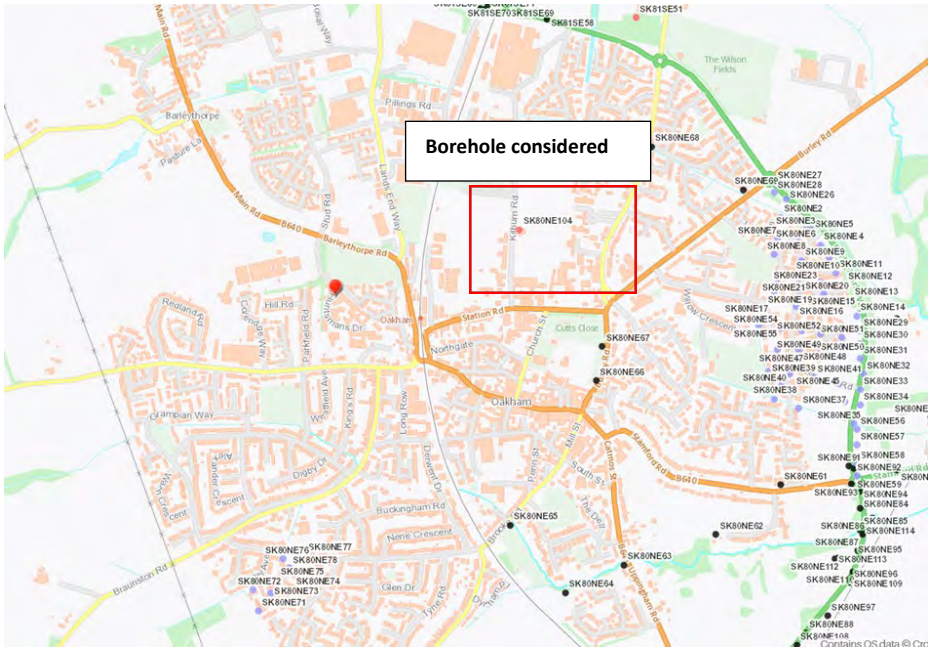
British Geological Survey Map

There are no boreholes from BGS records within 1km of the site.

The nearest borehole record (see figure 5) indicates underlying clay to a maximum measured depth of 50m.

It should be noted that the clay described in this borehole record is likely to be a suitable bearing material for shallow foundations. However these will need to be at least 1m deep to allow for expansion and shrinkage of the clays and may need to be significantly deeper than this in the proximity of trees.

Strata Description	From ↑	To ↓	Total ↕	Sample Info
Topsoil	G/L	0.20	0.20	
Stiff brown clay with sandstone and ironstone bands	0.20	2.40	2.20	
Stiff grey clay	2.40	5.00	2.60	
Stiff grey clay with shaly bands	5.00	10.00	5.00	
Stiff grey clay with mudstone bands	10.00	45.00	35.00	
Stiff grey clay	45.00	50.00	5.00	



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STRUCTURAL REPORT

Foundation Options

Precedent Foundations

The adjacent school building was founded on strip and pad foundations onto bedrock with a capacity of 300kN/m2.

MAIN BUILDING M.C./R.C PAD FOUNDATIONS
BELOW COLUMNS:
- FOUNDED ON UNWEATHERED BEDROCK (ALLOWABLE BEARING CAPACITY 300KN/M².

The underside of the foundations appears to vary between 115.750m to 116.500m

Foundation Option Summary

From the borehole information and information regarding the adjacent building foundations, it is expected that strip and pad foundations are likely to be adequate, located under column and wall locations.

In the best case scenario, good bedrock is located at reasonably shallow depth and new foundations can bear directly onto this rock, taking the benefit of reasonably high bearing capacities.

Failing this, if there is found to be an intermediate layer of clay, the foundations could bear onto the clay, providing they go deep enough to avoid any negative impacts from shrinkage or expansion of the clays (particularly where close to trees).

In the worst case, if a significant depth of Made Ground was found to be present, a piled foundation solution (potentially mini-piles or screwpiles) might need to be considered.

The level of any groundwater will also need to be verified by means of a full Site Investigation.

If clay is present, a suspended ground slab solution may need to be considered to mitigate the effects of shrinkage and heave. If the underlying natural ground is rock or granular material (and any shallow Made Ground can be replaced with granular fill) then a ground-bearing slab solution can be employed.

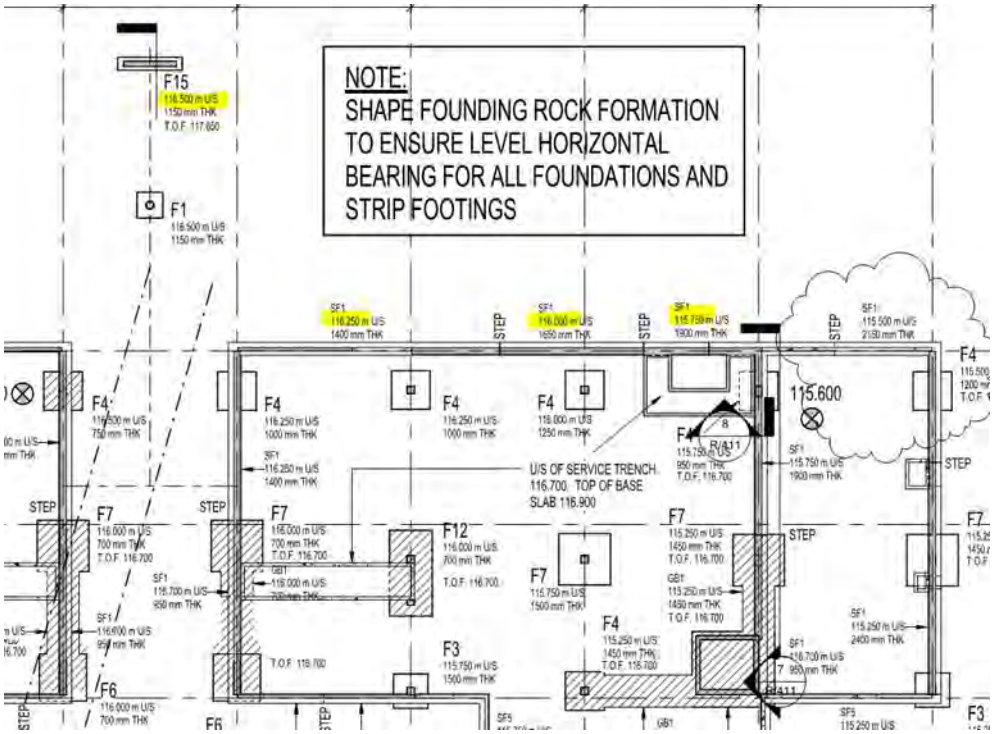

Figure 6 - Adjacent Building Foundation Sample Drawing

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MECHANICAL & ELECTRICAL REPORT

Background

Catmose College is an over-subscribed 7 Form of Entry (FE) secondary academy and is part of the Rutland and District Schools' Federation.

There are plans to extend the school and the Client Group wanted to establish the condition of the existing building prior to plans being set for the expansion.

There is a good set of Operating and Maintenance Manuals with Record Drawings provided.

Executive Summary

The current building was built in 2010 and handed over in February 2011, the school is generally in a good condition, regularly serviced and largely trouble-free.

Whilst the existing T5 / Compact Fluorescent lights are in good repair, it would be self-financing over a 7-year period to replace these lights with LED equivalents. This has not been allowed for in the main school except where the lighting is being remodelled.

The Biomass boiler is available to operate but has fallen into disuse due to the high cost of the wood-pellets compared to the alternative gas-fired systems. This affects the decision whether to extend the existing main school system to the extension.

It appeared that there would be spare capacity in the existing mechanical and electrical systems to accommodate a new extension if required although the incoming services are located in the boiler room at the far end of the building from the new extension location so generally local connections to the incoming water and gas services have been allowed. The electrical supply is being taken from the intake room.

It is anticipated that the new extension will incorporate LED Lighting and Part M Compliant switches and socket outlets. The new lift would be fully accessible.

Electrical systems i.e. access control, intruder alarms, fire alarms, CCTV ICT Data etc. would be extensions of the existing main building systems to ensure compatibility and full integration with the main school systems.

Mechanically the systems are recommended as gas fired heating and hot water with underfloor heating and a central mains-fed water system.

Ventilation is recommended as a room-by-room based mechanical ventilation with heat recovery (MVHR) strategy. Ground-floor through the perimeter wall and first floor through the roof.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing M&E system as required by the remodelling of the partitioned layout.

M&E Services Review

Electrical Services

There is a new sub-station on site and the main building is provided with a 2000 Amp, 3-Phase panel board in the electrical intake cupboard adjacent to the main boiler plant room. On the day of the visit with the classrooms full of pupils and the kitchens preparing for lunch, the building was drawing approximately 500 Amps per phase indicating that there would be spare capacity for the new extension. We recommend that a new sub-mains cable be run from a spare way in the electrical intake room to the new extension, run through the building.

Incoming / Small Power

The main power distribution boards were all compliant, operational and in good condition as would be expected for a building of this age.

A new electrical service cupboard is recommended in the new extension to house a new sub-metered, split distribution board to ensure that the usage is sub-metered by use as required to achieve the BREEAM Very Good sub-metering credits. Final circuits to be protected from RCBOs (Residual Current Circuit Breakers) on the sub distribution boards as recommended by wiring regulations.

New distribution boards and small power would be installed to meet the requirements of the new premises, including mechanical plant requirement and other special services requirement. All the wiring will be in compliance with the current wiring regulation and BS7671.

Light switches and power outlets in the rooms and circulation areas will be plastic and in plant room it would be metal clad. Installation heights and colour appearance of the front covers of the outlets will comply with Building Regulation Part M which is for full accessibility and use of the buildings.

The current approximately 400 sq.m. Brightways Adult Education Centre occupies the South West corner of the ground floor and is to be remodelled to form classrooms with relocated partitions and toilets, the electrical installation and lighting to this area will need to be removed and remodelled / re-wired from the local distribution board.

General Lighting

The new extension and the remodelled Brightways Adult Education Centre would be provided with LED luminaires designed to SLL Code for Lighting 2012, CIBSE Lighting Guide 7 sections 2.4, 2.13 to 2.15, 2.20, and 6.10 to 6.20 as required to achieve the BREEAM Very Good visual comfort credits. Lighting controls shall be as the main building for consistency with manual 'On' and absence 'Off' automatic switching with separate switching / dimming of the Whiteboard row and window row of luminaires.

Emergency Lighting

New emergency lighting to be integrated into the new main lighting and provided in accordance with BS5266, following the new fire evacuation planned route covering high risk areas and escape routes out to the street.

Intruder Alarm

There is an Intruder Alarm system installed comprising PIR sensors, window and exit door contacts to the main school generally. The new extension would have new intruder alarms to ground-floor accessible doors and windows with internal PIRs and sounders. The new intruder alarm system would be an extension of the existing main school system to ensure compatibility and full integration but with local control panels and keypads.

The new intruder alarm services to be compliance with BS EN 50131 2017.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Intruder Alarm system as required by the remodelling of the partitioned layout.

CCTV System

There is CCTV cover to internal and external areas of the building. The new extension would have new CCTV as agreed with the local Crime Prevention Officer to cover ground-floor approaches to doors and windows with internal CCTV as considered appropriate with the School. The new CCTV system would be an extension of the existing main school system to ensure compatibility and full integration.

New CCTV services would be provided with 30 day recording facility in accordance with BS EN 50132.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing CCTV system as required by the remodelling of the partitioned layout.

Fire Alarm

There is Fire Alarm cover to the main building, the system was operational and without faults. The new extension would have new fire alarms throughout to BS5839-1 with internal smoke/heat detectors, break-glass-units on exits and sounders / visual alarms. The new fire alarm system would be an extension of the existing main school system to ensure compatibility and full integration but with local repeater alarm panel.

Wiring will be LSF sheathed FP200 Gold fire resistant cables routed within service voids where available, otherwise surface mounted.

The Fire alarm system will initiate automatic release of access control door maglocks and door hold-open devices to meet the requirements of BS 7273 part 4: 2015.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Fire Alarm system as required by the remodelling of the partitioned layout.

Refuge Alarm

There will be 2 No. refuge alarm calling points in secure lobbies by the staircases on the 1st floor and alarm indicator will be by the main fire alarm panel. Refuge alarm system will need to be connected to the main fire alarm system.

ICT

There will be required to be a new local data network with ICT server cabinet for the facility support staff. This system would be provided and extended from the main school ICT System to suit the new requirements, All new data cabling would be CAT6 standard and outlets would be RJ45. There would be additional data outlets at high level on walls in selected areas to provide WiFi facility.

Data outlets will be provided in the new rooms as required and to be fed from the local relevant new ICT patch panels.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing ICT Data

system as required by the remodelling of the partitioned layout.

Access Control

New access control units will be provided to suit the client's requirement and British Standards. Fob access will be required at each door with programme and data review facility.

The new Access Control system would be an extension of the existing main school system to ensure compatibility and full integration.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Access Control system as required by the remodelling of the partitioned layout.

New Extension Lift

To ensure that the new extension is fully accessible, the new extension would be provided with a new 2-floor 8-person Accessible lift designed for use by wheelchair users to BS81.

New Extension Rooftop PV

To achieve the required sustainability criteria necessary to achieve BREEAM Very Good, we anticipate that a large proportion of the new extension roof would need to be covered by PV Panels. The final amount will be subject to detailed design and the associated Thermal Modelling.

Mechanical Services

Gas Service

A 125mm gas supply runs close too the rear wall of the main school and enters the premises via gas meter located in a meter cupboard adjacent to the main boiler house. As this live unmetered main supply runs between the new extension and the Sports Hall, we recommend that the local Gas Utility Co. is employed to cut into this live main and provide a new metered supply to the new extension to serve the gas-fired central boiler plant, the cookery classes and the science benches.

Gas-fired plantrooms would be provided with gas safety detection, manual and automatic alarm devices and automatic gas shut-off valves.

Classrooms with gas-fired equipment would be provided with gas safety systems comprising manual emergency knock-off/go-home buttons and automatic alarm devices and automatic gas shut-off valves per classroom.

Heating Plant

The main school is provided with a Hoval STU 425kW Biomass Wood-Pellet boiler supported by 2 No. Hoval UltraGas 300 high efficiency gas boilers each rated at 273kW operating at 80/60 Deg.C. Whilst the Biomass boiler is designed to take the lead on the heating with the gas-boilers in support, the Biomass boiler has not been used for several years due to the cost of the wood pellet fuel being significantly more expensive than gas. There is a large buffer vessel to help smooth the load. We were advised that the gas boilers operate sufficiently to hold the load and well within their capacity as they usually only need one boiler to hold the load, there is therefore likely to be spare capacity on the heating system for the proposed new extension, if required.

The main school boiler house is approximately 100m from the new extension location and as the low-carbon Biomass boiler is not in use, there is little cost or efficiency benefit in connecting the new extension to the main boiler plant. As we already need to have gas in the new extension for the classrooms, it would be most cost effective to serve the new extension heating and hot water from new self-contained gas-fired plant.

Whilst heat pumps are more carbon efficient, they are more expensive to install and more expensive to operate due to a shorter economic life and higher maintenance costs. Additional PV if required to achieve the same carbon efficiency would be a more cost-effective option.

Heating Systems

The main school heating strategy is generally for perimeter convectors under the external classroom windows, radiant heating panels for Labs and Cookery areas with underfloor heating to central core areas, all served from local VT/CT manifolds around the building. The mechanical services are all controlled and monitored via a Trend 963 control and monitoring system.

To ensure that that the perimeter walls in the cookery classrooms and science labs remains clear for benches and cupboards etc. we would discount the use of radiators and perimeter convectors and recommend either over-head radiant heating panels or underfloor heating. Radiant heating needs full temperature heating water to be effective whilst underfloor heating can operate at low temperatures ensuring better boiler operating efficiencies.

For pricing, we would recommend underfloor heating throughout.

Domestic Cold Water

Whilst there is some confusion on the record drawings, it appears that there is a 65mm underground water main run from the main boiler house tanks to serve the Sports Hall.

As this metered main supply runs near the gap between the new extension and the Sports Hall, we recommend that the route is excavated at the closest point to the new extension to cut into this live main and provide a new sub-metered supply to the new extension to serve the gas-fired water heater, the cookery classes, science benches and the new toilets.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Cold Water system as required by the remodelling of the toilet partitioned layout.

Domestic Hot Water

Domestic hot water heating for the Main School is via a hot water calorifier fed from the main gas boiler plant.

The Sports Hall has its own boiler plant and gas-fired water heaters as it is routinely operated into the evening for use by the local community after the school has closed for the day.

The dispersed requirement for hot water in the new extension cookery classrooms, science labs and toilets etc. lends itself to a new central system with flow and return distribution as required.

Whilst there is likely to be spare capacity in the Sports Hall hot water system for the new extension, it would be more cost effective to provide a local gas-fired water heater in the new extension instead of a long run of flow and return pipework run the length of the Sport Hall and across the intervening walkway.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Hot Water system as required by the remodelling of the toilet partitioned layout.

Water System and Sprinklers

A 100mm cold water metered supply enters the main building via the boiler room and feeds the cold-water storage tanks and booster set serving the building as a whole and an unmetered supply that serves the sprinkler tank in the rear car park.

Whilst the size and the arrangement of the new extension may not be enough on its own to require a stand-alone sprinkler system, given that the main school is sprinkler protected and runs underground to the Sports Hall relatively close to the new extension, we would recommend that the existing sprinkler system be extended into the new extension.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing Sprinkler system as required by the remodelling of the toilet partitioned layout.

Ventilation

The main school classrooms generally have natural ventilation via openable windows although rooms without external openable windows have mechanical extract and automatic openable windows from the internal communal areas and atria. These internal communal areas have automatic air intakes via automatic actuated windows over the exit doors.

The remodelled Brightways Adult Education Centre would be provided with modifications to the existing automated ventilation system as required by the remodelling of the partitioned layout as ventilation is currently built into the partitions that are being removed.

The lowest first cost option for the new extension would be to replicate the main school openable windows strategy but this is not energy efficient as the incoming cold air needs to be heated by the gas-fired heating system.

The more energy efficient option and to comply with BB101, would be to provide heat recovery ventilation units that pre-heat the incoming fresh air with exhausted room air which recovers approximately 80% of the waste heat. Subject to detailed design, to achieve BREEAM Very Good it may be necessary to adopt a Mechanical Ventilation with Heat Recovery (MVHR) ventilation strategy and this is recommended at this stage. These systems can also be used to control over-heating in summer.

Toilets and tea-points would need dedicated extract ventilation in compliance with Building Regulations Part F. Chemical stores and COSSH Cupboards would also need dedicated extract to outside to prevent fume build-up.

Cookery classrooms, especially with gas-fired cooking equipment will require heat and fume extract from the cooking with dedicated make up air to balance the cooker hood extract.

Fume cupboards in the Science Labs also need dedicated chemical resistant fume extract systems discharging to outside with dedicated make up air to balance the fume cupboard extract.

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Subject to detailed design once the Workshop uses are fully established, there may need to be specialist Local Extract Ventilation from sawing / sanding machines, soldering bays etc.

Air-source Heat Pumps / Cooling

As a low carbon alternative to the gas-fired boilers, especially where low temperature underfloor heating is adopted, electric air-source heat pumps could be utilised in place of the gas-fired boilers. The increased installation and operating costs would only be justified where this was necessary to achieve Building Regulations Part L Compliance and/or BREEAM Very Good

Above Ground Drainage

The above ground soil and waste system will be extended in compliance with BS EN 12056 Part 2: 2000 Gravity Drainage Systems Inside Buildings. Sanitary Pipework, Layout and Calculation and Building Regs Part H..

A primary ventilated gravity stack foul drainage system will be designed to collect discharge from all toilets, sanitary ware and kitchen appliances along with mechanical plant requiring safety and/or condensate discharge. The above ground drainage system will connect directly to the underground drainage system at ground floor level and be adequately vented to ensure trap seals are maintained at all times.

Inspection, Testing, Certification and Documentation

All test certificates with operation and maintenance manuals and record drawings for the installed mechanical and electrical services will be provided at end of the project as part of the handover process with familiarisation and training for the operations and maintenance staff.

To help achieve BREEAM Very Good, there shall be a requirement for Seasonal Commissioning with the Contractor returning 3 times during the post-handover season to fine tune the system controls and for the Contractor to provide post-handover Customer Support.

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SUSTAINABILITY STATEMENT—EXECUTIVE SUMMARY

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Overview

The proposed project consists of the development of a new block located immediately next to the sports hall at Catmose College, Oakham to provide a new high-quality education space and the refurbishment of the south east ground floor area of the main school building that is used for adult education. The two storey block will incorporate classrooms, laboratories, cookery, break out space, office and administration space as well as sanitary facilities with a total floor area of 1,288m^2. The adult education area is a total of 484m^2.

This Sustainability Statement will be provided to the client as sustainability brief outlining the potential to demonstrate the development's holistic approach to sustainable design and construction. It summarises the contribution that the design will make to create a more sustainable development, drawing on information provided by specialist consultants involved at Stage 2 of the proposed scheme, and identifying key features intrinsic to achieving low carbon developments.

The following key sustainability features within the development have been considered:

- The project could optimise the use of renewable energy sources such as PV panels or Air Source Heat Pumps reduce total carbon emissions;
- The project could adopt water efficiency measures in order to meet a recommended water consumption target of 110 litres/person/day (including external use);
- The project could utilise sustainable transport measures in order to improve its accessibility;
- The project could adopt a sustainable materials procurement policy and an efficient waste strategy on site to reduce embedded carbon emissions;
- The project could implement design and operational indoor air quality and thermal comfort to ensure health and wellbeing of the occupants; and
- The project could implement measures throughout construction to protect the ecology on site and provide biodiversity enhancement for the long-term.

Key Sustainability Measures

In summary, the key measures to incorporate within the design in order to address sustainability include the following key areas of sustainable design and construction:

- Energy and CO_2
- Adaptation to climate change
- Flood risk mitigation and SuDS
- Waste
- Water efficiency
- Transport and connectivity
- Materials
- Health and wellbeing
- Land use and ecology
- Sustainability Assessment

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Sustainability Introduction

The design team has significant experience in delivering schemes that are considered highly sustainable, either through application of formal green building rating systems, such as BREEAM, Home Quality Mark as well as applying benchmarks from standards such as Passivhaus Design and adopting precedents from industry exemplary sustainable developments.

The scheme is intended to reflect the holistic nature of sustainable development at Catmose College, Oakham. The development offers opportunities to provide high-quality, new build area of need and seek to use local labour to boost employment. Health and wellbeing could be incorporated in the design by maximising daylighting, utilising healthy materials and contributing to the alleviation of fuel poverty in the region. The site is currently a mixture of level porous paving, a grass bank and grass playing field and is assumed to be of low ecological value. Enhancement measures, such a green roof native planting and potentially bird and bat boxes could be implemented to support the local ecosystem.

Description of Development

The proposed development is to be located at Huntsmans Drive, Oakham, Rutland, LE15 6RP. The site is an area occupied by Catmose College and the proposed scheme will form a new building next to the sports hall and a refurbishment of an existing ground floor area part of the main school building.

The proposed project consists of a new block with ground floor area of approximately 690m^2 and first floor area of 538m^2. The proposed ground floor consists of two classrooms, one workshop area, a cookery, break out space with lockers and sanitary areas. The proposed first floor consists of further locker space, three laboratory rooms, preparation and office space and sanitary areas.

The refurbishment at the south east ground floor adult education area will include alterations of the layout. The space will consist of four classrooms, tutorial room, administration, break out space and sanitary facilities.

The aspiration for the scheme is to provide additional space by providing an efficient and inclusive development, which meets the client's requirements and any policy recommendations listed in the Rutland County Council Core Strategy

Figure 1: Proposed Ground Floor of the new block

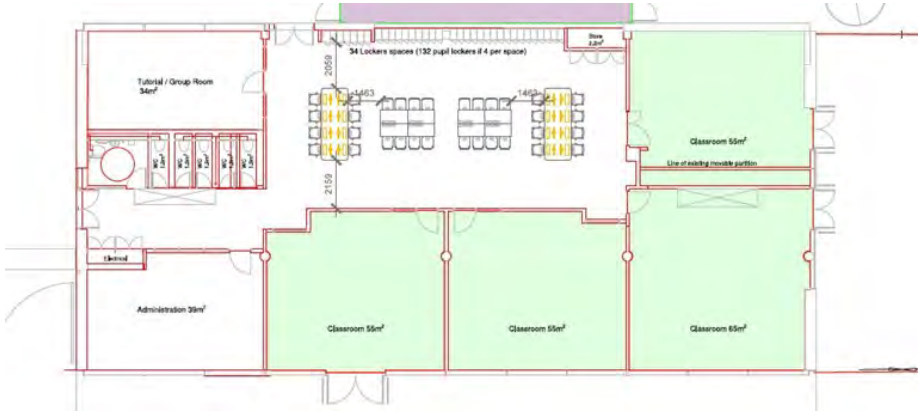

Figure 2: Proposed main school Ground Floor refurbishment

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SUSTAINABILITY STATEMENT—POLICY CONTEXT

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National Context: The 2008 Climate Change Act

The UK Government is committed to reducing the UK's carbon emissions by 100% over 1990 levels through the Climate Change Act 2008. Achieving truly sustainable design and construction and forwarding the green agenda within the construction industry across the UK is inherent to meeting these emission targets. This development would aim to do both of these.

To help monitor carbon reductions and to plot progress being made for future plans and investments in the UK's low-carbon economy, intermediary targets have been established to ensure that the UK remains on course for meeting the 100% reduction by 2050.

Concurrent with reducing CO_2 emissions by 100% by 2050 is the European Climate Change Policy targets. It sets the objective of ensuring 20% of energy consumption is generated from renewable sources by 2020 whilst also reducing Europe's carbon footprint by 20%. Ensuring a fabric first approach with consideration to renewable energy production fits both the climate change act and the European Commission's 2020 targets for reducing greenhouse gas (GHG) emissions.

National Context: National Planning Policy Framework 2019

The National Planning Policy Framework (NPPF) published in 2019 sets out the UK Government's planning policies for England. Planning law requires that applications for planning permission must be determined in accordance with the local development plan unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in preparing the development plan and is a material consideration in planning decisions. Planning policies and decisions must also reflect relevant international obligations and statutory requirements.

The NPPF is supported by a series of Planning Practice Guidance (PPG) documents. The guidance in relation to air quality provides guiding principles on how planning could take account of the impact of new development on air quality. The following policies are relevant to the Sustainability Statement:

- Achieving sustainable development
- Promoting healthy and safe communities
- Promoting sustainable transport
- Achieving well-designed places
- Meeting the challenge of climate change, flooding and coastal change
- Conserving and enhancing the natural environment

Regional Context: East Midlands Regional Plan 2008

The East Midlands Regional Plan 2008 is the overall strategic plan for East Midlands area and as such includes Rutland. This document, therefore, plays an overarching role in the planning process for the area.

The East Midlands Regional Plan sets out an integrated economic, environmental, transport and social framework for the development of East Midlands, including targets on the following key aspects:

- Environment;
- Economy;
- Housing;
- Minerals, Aggregates and Waste;
- Transport

Within the East Midlands Regional Plan there are a number of key targets indirectly related to new developments:

- Policies 26-31 on protecting and enhancing the regional natural and historic heritage.
- Policy 32 on increasing the number of sites with Sustainable Drainage systems and developing new targets for domestic water efficiency.
- Policy 38 on enhancing energy reduction and efficiency through targeting 1.5% reduction in energy consumption per year over plan period.
- Policy 39 on low carbon energy generation through targeting the renewables energy generation of 511 MWe by 2010 and 1120 MWe by 2020.
- Policy 37 on waste management and targeting zero growth in controlled waste by 2016 at the Regional level and decrease in waste disposed of in landfill in line with national targets
- Policy 44 on the yearly increase in the use of travel plans in the public domain as well as increase in journeys made by cycle.

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Local Context: Rutland County Council's Local Plan

Rutland's local development framework consists of Core Strategy Policies, alongside the above mentioned Policies from the East Midlands Regional Plan. Of particular relevance to this report is the Sustainability Appraisal Development Plan Document, which provides detailed guidance on these policies. Together these documents provide a clear guidance on how to sustainably develop the county. At a minimum, ways of compliance with the following policy requirements will be demonstrated in this Sustainability Statement:

Core Strategy Policies (2001-2026)

- Policy CS1: Sustainable Development Principles: New developments are expected to mitigate impact on current and future climate change, enhance environmental assets, ensure wider transport accessibility on site, maximise resource use efficiency in relation to energy, water, materials and waste, and avoid using development land at risk of flooding.
- Policy CS7: Delivering socially inclusive communities: New developments are encouraged to provide spaces that meet and enhance the provision for diverse needs of the surrounding community and do not contribute to the deprivation of services and facilities.
- Policy CS18: Sustainable transport and accessibility: New developments are expected to work with the council to address accessibility to amenities and employment facilities, improve the availability of sustainable transport alternatives such as cycling and walking and provide travel plans
- Policy CS19: Promoting good design: New developments are expected to address security needs, minimise energy consumption and maximise renewable energy generation, minimise water use and risk of flooding through Sustainable Drainage Systems and ensure and allow for adequate construction and operational waste management.
- Policy CS20: Energy efficiency and low carbon energy generation: New developments are encouraged to utilise renewable, low carbon and de-centralised energy sources. All new domestic developments are encouraged to meet Code for Sustainable Homes (now Home Quality Mark) energy efficiency standards beyond compliance with Building Regulations. All non-domestic buildings are encouraged to meet BREEAM design standards for energy efficiency.
- Policy CS21: The natural environment: New developments will be expected to protect endangered sites and species, minimise negative impact on ecology and maintain and enhance the natural environment.
- Policy CS23: Green infrastructure, open space, sport and recreation: New developments are expected to safeguard, improve and enhance existing green infrastructure network such as green spaces, paths, cycleways, open spaces, sport and recreation facilities.
- Policy CS24: Rutland Water: New developments should be carefully designed and located in relation to Rutland Water and its uses.

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SUSTAINABILITY STATEMENT—ENERGY AND CO_2

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Energy Strategy

The current energy strategy for compliance with Part L of the building Regulations for the new build is yet to be developed. The block could be connected to the existing heating network on site which consists of a biomass boiler plant utilising wood chip fuel. In addition, the development could incorporate a number of other renewable energy technologies. Below are some of the most common of these renewable strategies considered suitable for the scheme.

Renewable energy technologies

Biomass

Biomass is normally considered a carbon 'neutral' fuel, as the carbon dioxide emitted on burning has been recently absorbed from the atmosphere by photosynthesis. Although some form of fossil fuel derived inputs are required in the production and transportation of the fuel.

Wood is seen as a by-product of other industries and the small quantity of energy for drying, sawing, pelleting and delivery are typically discounted. Biomass from coppicing is likely to have external energy inputs from fertiliser, cutting, drying etc. and these may need to be considered. In this toolkit, all biomass fuels are considered to have zero net carbon emissions.

Biomass could be burnt directly to provide heat in buildings. Wood from forests, urban tree pruning, farmed coppices or farm and factory waste, is the most common fuel and is used commercially in the form of wood chips or pellets. Biomass boilers could also be designed to burn smokeless to comply with the Clean Air Acts.

A major factor influencing the suitability of a biomass boiler is the availability of the biomass fuel. A local and reliable fuel source would be essential for the biomass boiler to be an efficient replacement for a conventional boiler system. The original school incorporated such systems, however, the above mentioned fuel availability is likely to be an issue if the new block is connected to the service.

PV

Photovoltaic systems convert energy from the sun into electricity through semi conductor cells. Systems consist of semi-conductor cells connected together and mounted into modules. Modules are connected to an inverter to turn the direct current (DC) output into alternating current (AC) electricity for use in buildings.

Photovoltaic systems could be discreet through being designed as an integral part of the roof. An 'invisible' design using slates or shingles as opposed to an architectural statement could be preferable in a sensitive area.

Photovoltaics supply electricity to the building and are attached to electricity gird or to any other electrical load. Excess electricity could be sold to the National Grid when the generated power exceeds the local need. PV systems require only daylight, not sunlight to generate electricity (although more electricity is produced with more sunlight), so energy could still be produced in overcast or cloudy conditions.

The cost of PV cells is heavily dependent on the size of the array. There are significant cost reductions available for larger installations.

Solar PV

Solar water heating systems use the energy from the sun to heat water for domestic hot water needs. The systems use a heat collector, generally mounted on the roof in which a fluid is heated by the sun. This fluid is used to heat up water that is stored in either a separate hot water cylinder or a twin coil hot water cylinder inside the building. The systems work very successfully in all parts of the UK, as they can work in diffuse light conditions.

Like photovoltaic panels the most suitable location for mounting solar hot water panels is on roofs as they usually have the greatest exposure to the sun.

The school's operational pattern and the extensive shut down period during the summer, however, will likely decrease the overall efficiency of the system. The design team has considered point of use electric heating with small storage capacity to minimise heat losses and reduce legionella risk.

Air Source Heat Pumps (ASHP)

Air source heat pump systems work on the same principle as a ground source heat pump although they use the outside air as the heat source. The coefficients of performance given by air source heat pump systems are inferior to that of ground source systems due to varying air temperatures. In the depth of winter the energy efficiency of an air source system will be lower than that of a ground source system, and it is likely that more back-up heat will be required if an air source unit is fitted. This back-up heat often comes from a direct electric heater. They operate over a varying temperatures range of -15°C to +25°C, however, the performance will reduce to below the required 3 to 1 carbon saving ratio in winter, and they also require a defrosting mechanism to melt ice that forms on the air heat exchanger.

ASHPs are cheaper to install than ground source heat pumps but are only

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available on a relatively small scale. If applied across a larger site a number of plant zones would be required for generation of heat, leading to increased plant space requirements. Typical costs for an installation this are in the region of
£10,000 for a smaller commercial or domestic size installation.

Carbon dioxide emissions savings will typically be less than that of the ground source heat pump. Air source heat pumps may be more suitable as an HVAC solution.

Ground Source Heat Pumps (GSHP)

Geo-thermal energy is essentially heat collected from the ground. Heat obtained from the ground may be considered it as a source of heating and cooling within the UK by the use of a geo-thermal heat pump or ground source heat pumps.

A ground source heat pump is a device for converting energy in the form of low level heat to heat at a usable temperature. The heat pump consists of five main parts; ground collector loop/or bores, heat exchanger, compressor, condenser heat exchanger and expansion valve.

At approximately 1.2-1.5 metres down below ground level the temperature is a constant 10 to 12ºC. Any bores would need to be sunk to an effective depth of 50 –120m and a ground feasibility report would be required to ascertain if this method of heat source was viable.

From the bores pre-insulated pipework is laid in the ground to the heat exchanger device. The system is filled with water and anti-freeze. The cooled water is pumped around the loop / bore gathering energy as it circulates. The water that has been heated to 10-12ºC is returned to the ground source heat exchanger where the energy is transferred to the refrigerant gas. For every 1kW of energy used to compress the refrigerant, the process 'gives up' 4 kW of energy for use in the system being used to heat the building.

Typical costs for an installation this are in the region of £16,000-20,000 for a smaller commercial or domestic size installation, with general installation costs at £1200 /kW of energy produced.

Energy Efficiency Strategies

Energy efficiency measures that could be deemed more suitable for the new development at Catmose College include:

- High insulation standards to reduce transfer of heat through the building fabric.
- Use of photovoltaic panel (PV) systems or Solar PV. These would need to be located on the flat roof at an appropriate tilt angle and orientation to maximise performance.
- Use of an air source heat pump system to provide heating and hot water for the whole development.
- Envelope air tightness to reduce unnecessary air infiltration
- Use of Mechanical Ventilation Heat Return (MVHR) system to further contribute to energy demand reduction.
- Daylighting and well-planned floor layouts to reduce the need for artificial lighting; and
- High efficacy LED lighting with automatic controls

Thermal Comfort and Overheating Risk

To minimise energy loss, the building fabric performance could be designed to achieve a balance between retaining heat during winter and allowing the building to dissipate heat during the summer months. Further measures to reduce overheating and the need for cooling include:

- Energy efficient design to minimise internal heat generation. In order to do this energy efficient appliances and lighting could be specified.
- Exposed concrete slab soffits could be incorporated.
- Direct solar gains could be controlled through specifying appropriate location, size and type of windows. Windows with specific properties designed to let a low percentage of solar heat in are to be specified. The current design of the proposed new development includes an option for triple glazing and low g-values on the south elevation.
- Reduced air permeability rate and maximised insulation levels
- Passive ventilation systems with MVHR as well as openable windows.

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SUSTAINABILITY STATEMENT—CONSTRUCTION MANAGEMENT

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Construction Environmental Management

Environmental impacts of the construction works could be mitigated as far as possible through the incorporation of the following:

- Contractor following environmental management system processes (under ISO14001), including the development of a construction environmental management plan (CEMP) specific to the sites;
- Training and site induction of all site operatives;
- Monitoring of energy, water and transport to and from site during construction;
- Management of waste on site;
- Following best practice pollution guidance from the Environment Agency;
- ·Ensuring all site timber is responsibly sourced in line with the UK Government's Timber Procurement Policy;
- Vehicle emissions would be minimised through the use of catalytic converters and the regular maintenance of vehicle engines;
- Damping down of brick walls etc. during any building demolition;
- Regularly inspecting and wet suppressing materials/soil stockpiles where necessary (including wind shielding or completely enclosing, storing away from site boundaries, and restricted height of stockpiles);
- Appropriate orientating of material stockpiles;
- Providing wheel washing and wet suppressing during the loading of wagons vehicles;
- Covering vehicles carrying dry soil and other wastes;
- Shielding of dust-generating construction activities;
- Providing suitable site hoarding;
- Restricting vehicle speeds on haul roads and other unsurfaced areas of the site; and,
- Inspecting unsurfaced haulage routes, and wet suppressing should this be necessary (in times of prolonged dry periods).

Considerate Constructors

The project could also seek to register and certify the site to Considerate Constructors Scheme (CCS) or adopt the scheme's principles. The CCS scheme aims to recognise and encourage construction sites that are managed in an environmentally and socially considerate, responsible and accountable manner.

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Water Management Introduction

The development proposal recognises the need to create a scheme that is efficient and adaptable to future climatic scenarios.

Water Conservation

The design team should consider targeting a significant reduction in internal water use for the development over typical performance, equating to a water consumption target of 110 litres per person per day (including 5l/p/day for external use). This is a 12% improvement over the standard UK Building Regulations Part G requirement.

Water consumption could be reduced through the use of water efficient components for all specified domestic water -consuming components (including low-flow showerheads and taps, dual flush toilets and low water consuming washing machines and dishwashers), water meters linked to a Building Management System on site, water recycling systems where appropriate and flow control devices that regulate the supply of water to each facility according to demand.

A permanent automated water leak detection system could also be installed to alert the building occupants to a major water leak on the mains water supply within the building and between the building and the utilities water meter.

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SUSTAINABILITY STATEMENT—TRANSPORT & CONNECTIVITY

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Public Transport

The development is located North West of Oakham town centre. The network of public transport routes accessible from the site is extensive. There are at least 3 bus stops within less than 500m of the site. The nearest bus stop, Huntsman Drive which is about 350m away, serves bus routes 184, R47, RF1 and RF2. The Rail Station bus stop, about 400m away, serves the same bus routes as well as 146. The Town's Bus station is located 750m walking distance from the proposed site and offers additional two bus services. Oakham train station is located 650m walking distance from the proposed new block and refurbishment and offers Cross Country and EMR services to Stansted Airport, Birmingham, Norwich as well as connections to North England.

Cycling Provision

The provision of cycle parking should be considered as part of the new building in order to address Policy CS18 of the local plan. There are no minimum requirements on the number of cycle spaces required by the policy. The site could incorporate BREEAM New Construction 2018 principles where educational buildings are required to provide 1 parking space per 10 members of staff and students combined.

There are not many cycle lanes available in the surrounding area of the project, however most roads have wide lanes which allow for on-road cycling. In addition, the school is located in a largely residential area and therefore quiet routes are available.

Rutland has a network of cycle routes across the county which begin from Oakham including Oakham to Collyweston / Ketton and Oakham to FotheringhayCastle.

Car Parking Provision

No new on-site parking will be provided as part of the proposals. The existing car parking facilities which include disabled car parking spaces are located immediately south east to the refurbishment and south of the new build part of the project.

Accessibility and Security

Creating a secure but fully accessible development is a key part of the proposed development, in line with Policy CS7. To ensure this is achieved, the design team could adopt, where feasible, the key principles of "Secured by Design" within all elements of the scheme. In addition, Architectural Liaison Officer (ALO) or a Crime Prevention Design Advisor (CPDA) could be consulted at an early stage to provide recommendations of how the CPDA will be implemented within the development's design and layout.

It is likely that the school already incorporates some of the above mentioned strategies and therefore features such as Accessible toilets and potential accommodation for disability access features of the lift provision should suffice in ensuring inclusive design of the new build and refurbishment.

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Materials and Waste Introduction

Sustainable material sourcing and waste management should be considered throughout the life of the building to ensure the scheme's environmental footprint is minimised as far as possible. The scheme could also ensure low embodied carbon is employed throughout the procurement, transport and construction of building materials, together with end of life emissions.

Materials Selection and Sourcing

It is the design team and contractor's responsibility to ensure that efforts are made to reuse materials where feasible and that where required, new materials will be responsibly sourced. New construction materials could be selected, where feasible, with a low environmental impact.

An option the design team are considering for the superstructure is using reinforced concrete with a low cement ratio and possibly the use of post tensioning to keep slab thickness to a minimum. Alongside this strategy, it is recommended that new materials come from a recycled or reused source.

A potential option also considered by the team are using cross laminated timber (CLT) for the superstructure. The use of Cross Laminated Timber (CLT) could offer the double benefit of sequestering CO2 from the atmosphere during the timber lifespan as well as requiring less energy to produce. Minimum standards should apply to all new timber, which must be sourced in accordance with the UK Government's Timber Procurement Policy.

In addition, all timber could be FSC/ PEFC certified, all concrete will be BES 6001 certified and any other material could be ISO 14001 certified for both key processes and supply chain/ extraction processes where feasible to do so.

The Green Guide for Specification is a reference tool, providing guidance on the relative environmental impacts for a range of different building elemental specifications, based on Life Cycle Assessment and the Environmental Profile Methodology. The design team could reference the Green Guide to Specification to help specify materials with a low environmental impact, where feasible. The design could aim for incorporating at least 5 build-up elements that are be A-C rated on the Green Guide.

The design team could also aim for insulation specifications that eliminates hydrochlorofluorocarbons (HCFCs) and ozone depleting materials, wherever possible. All insulation specified could also have a Global Warming Potential (GWP) of less than 5 and be responsibly sourced to have a low embodied impact.

Embodied Carbon Analysis

The development could utilise a number of opportunities to cut embodied carbon, as follows:

- A materials efficiency strategy could be developed and followed throughout the design, procurement and construction stages of the development, to ensure the scheme produces less waste on site. For example, adjustment of some sizes will be made to minimise offcuts of materials, and some bespoke materials will be developed off-site;
- Materials could be procured from the local area where possible, to reduce carbon through transportation;
- Materials and products with a higher recycled content could be preferentially procured where feasible, as these have a low embodied carbon;
- Consideration could be made to use timber as a low embodied carbon alternative to concrete where possible and particularly for the fit-out elements since the fabric build up needs to align with the school's existing fabric; and,
- The design team could seek to commit to the Waste and Resources Action Programme (WRAP) guidance 'cutting embodied carbon in construction projects, where feasible.

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SUSTAINABILITY STATEMENT—HEALTH & WELLBEING

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Occupant Wellbeing

The development should be designed to ensure the wellbeing of occupants in terms of levels of fresh air, thermal comfort and reduction of overheating, access to natural light, good lighting levels internally and externally and acoustic performance.

Internal Air Quality

The design team should specify only low volatile organic compounds (VOC) finishing products, including sealants and paints in accordance with standards such as the EU Directive 2004/42/CE. Avoiding the use of composite wood products that contain added urea formaldehyde is also recommended.

Daylight

At this stage the design appears to be developed to allow the use of daylight within the new build and the refurbishment to be maximised as far as practical through the North façade curtain walling particularly useful for the class rooms and laboratory areas of the new building.

Inclusive Design

The guidance in the Approved Document M (March 2016) should be incorporated to achieve an inclusive built environment that enables users to maximise their individual abilities and enjoy a safe and independent participation. Where feasible, both the new build and refurbishment should demonstrate compliance to Part M1 Access to and use of buildings other than dwelling as well as the specific Part M requirements for educational establishments. All of this already appears to be considered through the proposed disabled access toilets of the new build and refurbishment. The potential for the lift to be used by individual with disabilities should be explored.

Cleanliness and maintenance

The design team have suggested the use of sensor toilet flush devices in order to reduce exposure to pathogens through frequently touched surface areas. In addition, antimicrobial door push plates and handles could be considered in high traffic pedestrian areas within the building.

Site Amenities

In addition to the existing site amenities, the design team is considering the incorporation of blue roof and green roof features with allowed access for students via a stairway access to the roof and parapet of 1.1m height. Should this form part of the final design, disabled access should be considered.

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Protection of Biodiversity

The proposed site location for the new block consist of a mixture of level porous paving, a grass bank and grass playing field with a presumed low ecological value. The proposed development should promote the protection of all the existing trees and soft landscaping surrounding the development from damage during site demolition and the completion of the construction works.

The design team is committed to protecting biodiversity on site and should therefore implement the following measures:

- Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process;
- Ensure that any affected trees and shrubs are cleared out of bird breeding season (March-August). Alternatively, a suitably qualified ecologist should check for the presence of active nests prior to the commencement of works;
- Implement working methods in line with best practice to manage dust and water runoff; and,
- During the construction phase a Biodiversity Champion should be appointed to monitor and limit environmentally detrimental activities. They should also train the workforce on the project to raise their awareness of environmental impacts during construction.

Ecological Enhancements

The design team is also committed to enhance biodiversity on site.

The proposed development should aim to incur no negative change in ecological value and a suitably qualified ecologist should be appointed to provide early design stage advice on:

- How to improve the ecological value of the site;
- Confirm that all relevant UK and EU legislation relating to protection and enhancement of ecology has been complied with during the design and construction process; and,
- Produce a landscape and habitat management plan to cover at least the first five years after project completion, if applicable.

The design team is considering the use of green roof for the new build part of the project The green roof being considered could incorporate a 50mm deep water reservoir and substrate depth varying between 20-150mm and use of a native species grass and flowering plant seed mix. If appropriate, a roof level pond could be formed, with log piles. Batt and bird boxes are also being considered as part of the ecological enhancements.

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SUSTAINABILITY STATEMENT—SUSTAINABILITY ASSESSMENT

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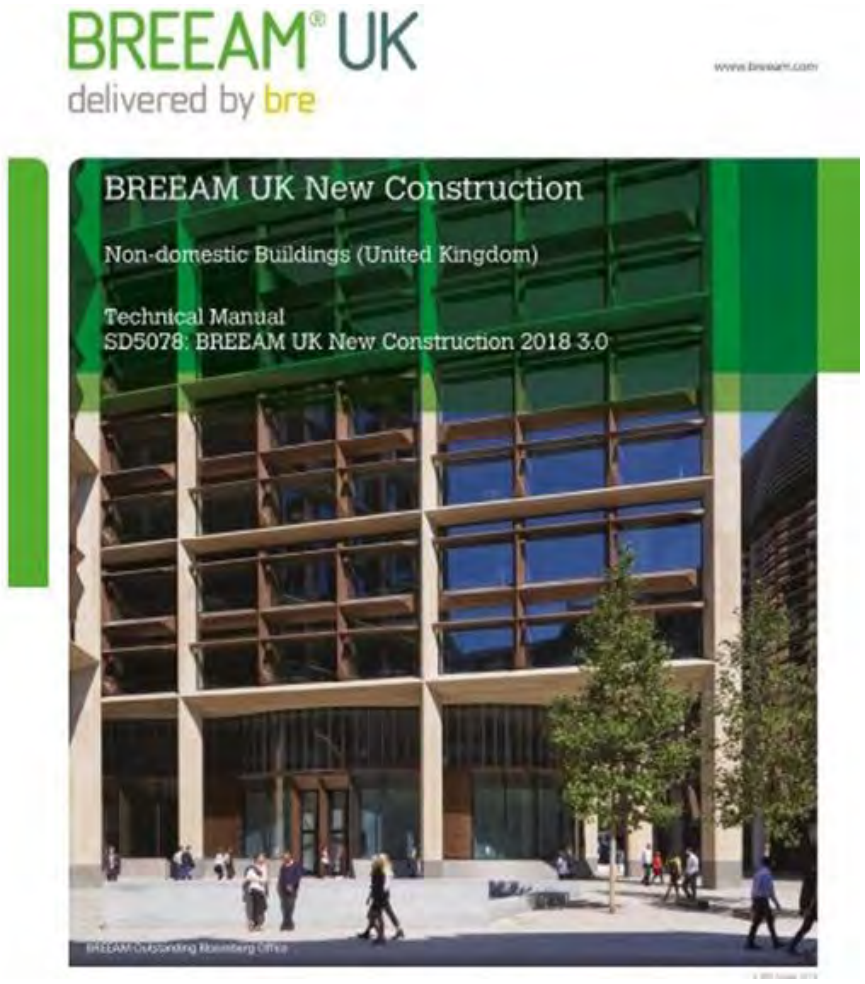
Sustainability Assessment

The new build and refurbishment parts of the project could both target the relevant BREEAM Assessment schemes (New Construction 2018 and Refurbishment and Fit-out 2014 respectively) in order to demonstrate initiative for holistic integration of sustainability within the design. Alternatively, primarily the principles of BREEAM for energy efficiency could be applied to the site in line with Policy CS20 of the local plan.

The scheme offers guidelines based on leading engineering, acoustical, energy efficiency and ecological standards in the UK and could be particularly relevant to the project for enhancements in the following aspects:

- Reduction of material embedded CO_2 emissions through Life Cycle Assessment.
- Enhanced targets for energy efficiency.
- Compliance with Formaldehyde and VOC limits.
- Responsible sourcing of materials.
- Specification of efficient sanitary ware.
- Efficient material selection and responsible waste management.
- Impact of refrigerants and NOx emissions on site.
- Long term impact on ecology and biodiversity.



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Next Steps

Following an extensive review of the proposed new building and refurbishment at Catmose College, Oakham the following steps should be undertaken in determining the most suitable and practically feasible sustainability features of the design:

- Determine the targeted sustainability outcomes required by the scheme and agree on achievable targets in line with all relevant Building Regulations, Rutland County Council's Core Strategy and any relevant environmental assessment schemes.
- Complete energy calculations and thermal comfort modelling for the proposed new building.
- Complete an air quality assessment to inform the indoor air quality and ventilation design.
- Complete a daylighting Assessment to determine the provision of daylight in line with building regulation guidance and BRE recommendations.
- Complete an ecological appraisal to determine the ecological value of the site, any negative impacts and required mitigation strategies as well as biodiversity enhancement strategies.

Conclusions

This Sustainability Statement has been developed as a sustainability brief for the erection of a two storey new building and a refurbishment of a Ground Floor at Catmose College, Oakham

In summary the scheme would be expected to adopt the following sustainable features in order to respond to Rutland County Council Core Strategy and integrate sustainability within its design:

- The project could optimise the use of renewable energy sources such as PV panels or Air Source Heat Pumps to reduce total carbon emissions;
- The project could adopt water efficiency measures in order to meet a recommended water consumption target of 110 litres/person/day (including external use);
- The project could utilise sustainable transport measures in order to improve its accessibility;
- The project could adopt a sustainable materials procurement policy and an efficient waste management strategy on site to reduce embedded carbon emissions;
- The project could implement design and operational procedures, including daylight, optimum indoor air quality and thermal comfort to ensure health and wellbeing of the occupants; and
- The project could implement measures throughout construction to protect the ecology on site and provide biodiversity enhancement for the long-term.

E APPENDICES

SUSTAINABILITY STATEMENT—ADAPTION TO CLIMATE CHANGE

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Climate Change Mitigation

The proposed development will likely utilise the existing heating network on site, some form of additional renewable energy source and passive ventilation with a potential for heat recovery integration. Passive design measures, including openable windows and night-time purge ventilation will also be part of the design.

Flood Risk and Sustainable Drainage

Catmose College is located within Flood Zone 1 of the Environment Agency's Flood Map for Planning, as shown in Figure 3: Flood map showing the approximate location of the development within Flood Zone 1.This is defined as an area with little or no risk to flooding where the annual probability of river, tidal and coastal flooding (with defences where they exist) is <0.1% i.e. less than 1 in 1,000 years.

The drainage strategy for the new build has not yet been fully developed. It is likely that the development already incorporates sustainable drainage strategies, including attenuation measures to manage the risk of surface water runoff and therefore the new development and refurbishment will be able to benefit from this in addition to any standalone measures. The design team is considering implementation of a potential blue roof on the second storey of the new build and blue roof with tile deck for the single storey element of the same building.

The option of incorporating a green roof on the second storey of the new block could contribute to minimising the discharge of water from rainfall on site, also seen as a more sustainable measure compared to conventional water attenuation systems.

Food Map

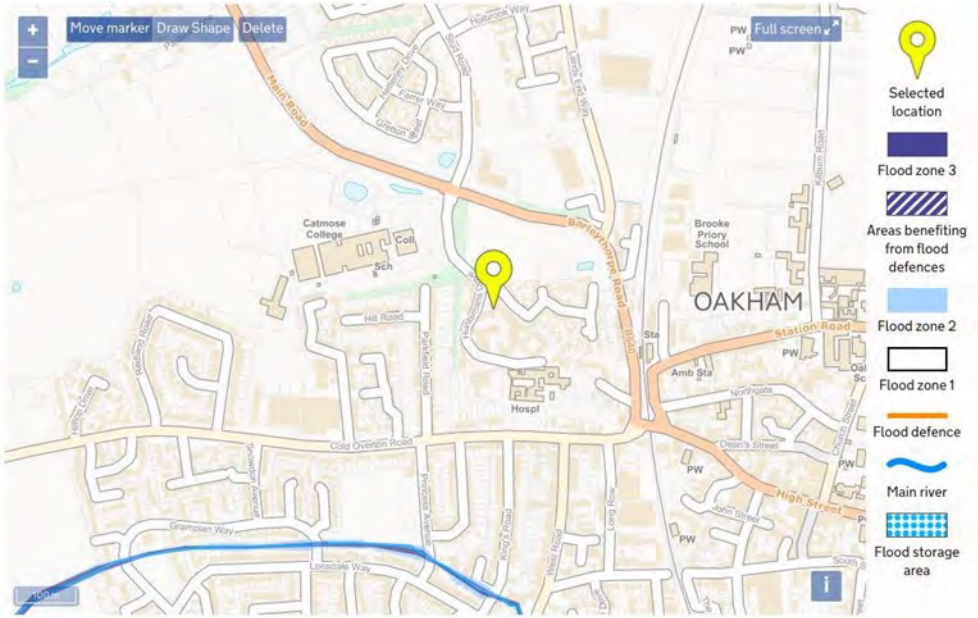

Figure 3: Flood map showing the approximate location of the development within Flood Zone 1.

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Construction Waste Management

Resource efficiency on site could be promoted through effective and appropriate management of demolition and construction site waste.

In line with the waste hierarchy, during the construction phase, it is recommended that the following approach is applied:

- Use reclaimed materials;
- Use materials with higher levels of recycled content; and,
- Use new materials.

Since the new build part of the project is required to match the existing build up which is largely formed of reinforced concrete, the use of reclaimed and recycled content is recommended.

For any demolition, the following approach could be adopted:

- Prioritise the on-site reuse of demolition materials;
- Adopt on site recycling and, where required, use off site recycling; and,
- The least preferred option – disposal to landfill.

It is recommended that a site waste management plan is developed which adopts best practice benchmarks for resource efficiency, details procedures and commitments to minimise non-hazardous and hazardous waste at the design stage and monitors/measures waste production on site.

The site waste management plan could include procedures and commitments to sort and divert waste from landfill through the following:

- Re-use on site;
- Salvage/ reclaim for re-use off-site;
- Return to supplier via a 'take-back' scheme;
- Recovery and recycling using an approved waste management contractor; and
- Compost

Operational Waste

The operational waste on site will likely be managed through the main school facilities and the recycling yard area. The inclusion of segregation bins that are clearly labelled, accessible and of appropriate size waste primarily for the use of the new build occupants needs to be considered alongside with the expected amounts and type of waste generation. It is also recommended that there is provision for the management of laboratory waste as part of the new build.

F APPENDICES

EXISTING FLOOR PLANS - GROUND FLOOR & MEZZANINE


KEY
GENERAL TEACHING
SCIENCE
MUSIC & DRAMA
DESIGN & TECHNOLOGY
ART
ICT / BUSINESS / MEDIA
LEARNING RESOURCES
SEN
HALLS / DINING
ADMINISTRATION
STAFFROOM
KITCHEN
STORAGE
TOILETS & CHANGING
CIRCULATION
PLANT
COUNCIL'S OFFICES

G APPENDICES

SURVEY SCHEDULE

SURVEY SCHEDULE	
Air Quality Assessment/requirement to be confirmed during Planning application	TBC
Electrical logger or Information re: MPAN numbers for loadings	N/A
Utilities quotations	Stage 3
Aboricultural Surveys to BS 5837:2012	Stage 2
Archaeological Desktop Survey	Stage 2
Asbestos Survey	N/A
Topographical /Elevational Survey/Measured Survey inc. underground services scan/Utilities searches	Stage 2
Daylight modelling	Stage 2
Drainage (underground CCTV) Survey	Use Record Drgs
Ecological Survey Phase 1 survey in the first instance. Others to follow if necessary	Stage 2
Fire Consultant to assess against Building Regulations and RRO 2005	Stage 2
Flood Risk Assessment/requirement to be confirmed during planning application	Stage 2
Geotechnical & Contamination Ground Investigation - Survey incl. UXO risk assessment	Stage 2
Noise Survey and Acoustic Consultancy	Stage 2
Party Wall/Boundary Survey and Agreements	Stage 3
Rights of Light Survey - requirement to be confirmed by the Planners	N/A
Thermal modelling	Stage 2
Visual Structural Condition Survey	N/A
Transport Assessment (e.g. Parking/Access Statement)	Stage 2

Survey schedule based on known requirements at this stage. To be reviewed during Stage 2.

APPENDICES

STRATEGIC RISKS

H

Strategic Risks based on known requirements at this stage. To be reviewed during Stage 2.

	ITEM	NARRATIVE
1	SITE: Part of the site is within the Rutland County 'limits of development' zone	Locate new block within limits of development zone. Discussions required with planning.
2	Provision of sufficient Science & DT accommodation by September 2022.	Whilst phased development will provide sufficient classrooms for September 2022 by conversion of Brightways the new block containing additional Science and DT classrooms is unlikely to be ready until the Summer term 2023. This issue needs to be analysed and discussed between the parties.
3	Disruption to school during construction. Proposed works will be directly adjacent to teaching areas.	Locating the new block behind the sports hall would minimise disruption. There is more flexibility for the conversion of Brightways. Works could be programmed for the Summer Holidays.
4	Cost Control	College's preferred option may not be affordable. VE proposals to be discussed and agreed.

APPENDICES

CONDITION REPORT

1.0 Background

Catmose College is an over-subscribed 7 Form of Entry (FE) secondary academy and is part of the Rutland and District Schools' Federation.

There are plans to extend the school and the Client Group wanted to establish the condition of the existing building prior to plans being set for the expansion.

There is a good set of Operating and Maintenance Manuals with Record Drawings provided.

1.1 Executive Summary

The current building was built in 2010 and handed over in February 2011, the school is generally in a good condition, regularly serviced and appears largely trouble-free of major maintenance issues.

Decorations are in good condition with only minor scuffs evident to low areas, floor coverings were in good condition for their age.

The single ply roofing had a few minor issues with a build-up of moss and detritus resulting in blocked gullies causing some ponding. Some displaced cable support feet had become detached, the fixing to which were in danger of penetrating the waterproof membrane. Some anti bird wires were broken and ineffective.

Some minor paving repairs are required to the first-floor escape landings.

There are 3 areas of multi-actuator automatic windows which are non-operational, similar previous faults had been traced to faulty area control panels that cost £2.5k each to repair/replace so a budget of £7.5k is recommended.

Whilst the existing T5 / Compact Fluorescent lights are in good repair, it would be self-financing over a 7-year period to replace these lights with LED equivalents.

The Biomass boilers are again available to operate but have fallen into dis-use due to the high cost of the wood-pellets compared to the alternative gas-fired systems. The existing system was tailored to use the high-temperature biomass boilers as the lead and the system control and operation should be reviewed to identify opportunities for lower temperature / higher efficiency operation.

It appeared that there would be spare capacity in the existing mechanical and electrical systems to accommodate a new extension if required although the incoming services are located in the boiler room at the far end of the building from the new extension location.

Approximate repair cost to the building fabric totals £12,400 and M&E repairs total £7,500.

1.1.0 Survey Method & Restrictions

The internal and external fabric of the building was examined within the bounds that site conditions and access allowed. On the day of the survey (19/11/2020) the weather was cold, windy with occasional heavy showers.

- The survey was visual only and non-intrusive. The building was fully occupied at the time of inspection.
- Photographs were taken for general reference or where necessary to illustrate a defect or general condition.
- All hands referred to are taken as though looking from the front of the property viewed externally.
- The survey carried out did not include the following:

1. An intrusive survey of the structural components such as the structural frame; sub floors, foundations and reinforcement etc.
2. A survey of the underground drainage system or testing of services
3. Access matters in accordance with the Equalities Act 2010.

NOTES

2.0 BUILDING FABRIC REVIEW

2.1 General Description of Building

The buildings surveyed comprise a two storey, concrete and steel framed secondary academy, and a stand-alone steel framed and metal deck roofed gymnasium block. There is a standalone pumping station, with stack bonded block walls and flat roof to match the main building.

External areas comprise tarmac surfaced car parking, planted dividing areas, concreted paved walkways, grassed playing fields and artificial surfaced pitches/ courts.

2.2 Internal Description

2.2.0 Ceilings.
Most ceiling finishes comprise exposed soffits to the concrete deck and flooring undersides above, with acoustic baffles suspended in circulation areas. There are some lightweight suspended ceilings with an exposed grid and lay-in mineral fibre tiles. Plant-room ceilings are lined with fire rated plasterboard.

All appeared in good condition.

2.2.1 Walls/Partitions
Walls/partitions generally Decorated self-finish blockwork to the majority of areas. Whiterock hygienic cladding is present in some areas, in good condition.

Internal walls to the gymnasium are part height lined with a ply board – in a sound condition.

Folding partitions are present to divide some teaching spaces.

There are some part glazed and plasterboard partitions with aluminium powder coated framing.

All appeared in good condition.

2.2.3 Floors
Solid concrete floors are covered with a variety of sheet vinyl, anti-slip vinyl and carpet tiles, with quarry tiles to ground floor circulation areas, and entrance mat systems at entrance door lobbies.

The majority of floor coverings are in good condition, particularly considering their age. Some minor discolouration is present to the surface finish of some sheet vinyl exposed to sunlight, but its effectiveness has not been compromised.

The forum/stepped theatre area has polished timber strip flooring.

Wooden strips to the gymnasium flooring are wearing in some places, and either isolated sanding and resealing or a programme of full sand and seal with associated re-marking of courts should be considered.

Dance/gym floors appeared in good condition.

2.2.4 Doors
Internal doors generally have a pre-decorated finish are a mixture of solid, and part glazed with vision panels. All appeared to be robust and functioning well, some door handle furniture was slightly loose, but functionality was not affected.

Glazed and powder coated aluminium doors are fitted to the entrances, and those opening to outside courtyards and spaces, all in good condition.

2.2.5 Decorations

Generally the building is in good decorative order. Some minor scuff marks to low level areas were visible and these could be 'touched in' to improve the overall appearance. Consideration should be given programming cyclical re-decorations throughout, after a further five years.

2.2.6 Sanitaryware

Vitreous glazed sanitaryware, appeared in good condition.

Stainless steel surfaces are in good condition.

APPENDICES

CONDITION REPORT

2.3.0 External Description

External finishes

2.3.1 Walls
The stack bond blockwork is in good condition although there is some water staining evident below window cill joints from rainwater run off which over time will affect the pointing below. The application of a silicone or mastic seal to the cill joints will help to prevent this.

2.3.2 Cladding
There a variety of different cladding types present:

Profiled sinusoidal cladding finished with a galvanised coating, in good condition.

Anodised aluminium rainscreen cladding, in good condition.

Multiwall translucent polycarbonate to the gym appears sound but there is a small section of trim that is missing at high level on the West elevation, which requires re-fixing/repair.

Exposed Steelwork and Stairways are all finished with a galvanised coating which is giving good low maintenance protection.

Cedar strip cladding to the soffits along the front elevation overhang have minor signs of water staining from rainwater run off tracking from the edges of the rainscreen cladding above.

2.3.3 Windows/Window Walling/Curtain walling
The powder coated aluminium windows and window walling are all in good condition.

There has been a recent addition of a window-walled structure which encloses a formerly external area and provides additional dining space

2.3.4 Rooflights
The powder coated aluminium rooflights are all in good condition.

2.3.5 Doors
External powder coated aluminium doors are in good condition.

2.3.6 Roofs
The main roofs are flat and covered with a single ply membrane. There is a man safe system on each roof, and a fair amount of mechanical plant. Access to the roofs was available via internal ladders.

There are a mainly internal rainwater outlets and the roofs appear to have a cut to falls insulation system which drains rainwater towards the outlets.

The roof coverings appeared sound, some repair patches were visible, these were likely placed during the original installation.

There was a fair amount of 'ponding' which appeared to be due to blocked rainwater gulley outlets rather than insufficient 'fall' on the roofs. A fair amount of general detritus such as moss and bird guano was evident particularly around roof mounted plant. This needs to be cleared and the roofs regularly cleared to ensure water drains to the outlets as designed.

Service supplies to/from the roof plant is supported on cable trays with support feet, some feet had become dislodged and the trays and their screw fixings were in direct contact with the membrane, this needs urgent attention to prevent penetration of the single ply.

There is an air inflated ETFE roof above the central stepped gallery and general open plan resource area.

The roof appeared sound and water tight, but what appeared to be anti-bird wires in the valleys were disconnected and broken. If roosting birds are a problem, then these wires should be replaced by a specialist.

There is a tensile fabric roof which encloses the student entrance and some general external circulation areas, no issues were evident, and the roof appeared sound.

2.3.7 Hard Pavings
There are concrete paving slabs to general external circulation areas. It was noted that some of the slabs to the first floor escape walkways had a slight amount of movement when walked on. The slabs are on support pedestals to protect the waterproof membrane below, and it was noted that a section at the top of the escape stairs facing the playing fields is uneven and may present a trip hazard. This section including the tactile paving should be lifted and

re- set level.

Generally some concrete surfaces would benefit from gentle power washing in order to remove build up of moss and lichen and to improve the overall appearance. This is evident to the rear escape stair risers, and some raised concrete and glass block vent enclosure sited on a roof terrace, would also benefit from cleaning.

Car parking areas are tar paved and edged with pre-cast kerbs, marked bays are present, generally in all appeared good condition.

Some areas of gravel paving has sunken slightly most likely due to foot traffic, and these would benefit from re-dressing and rolling to avoid ponding.

Pathways leading to the playing fields and some external seating areas are formed in a concrete 'Grasscrete' type block with seeded grass in-fil, which appear in fair condition.

2.3.8 Soft Landscaping
Grass, shrubs, and planted areas are generally well maintained.

2.3.9 Site boundaries/ fencing
Fencing and enclosures generally comprises anti climb powder coated steel mesh and posts., with some galvanised framed and mesh gates to pupil entrances and exits. The site boundaries are in good condition.

2.4 Schedule of Condition

Condition Definition

CONDITION	DEFINITION
GOOD	Performing as intended and operating efficiently [LONG TERM]
FAIR	Performing as intended but exhibiting minor deterioration. [18-36 MONTHS]]
POOR	Exhibiting major defects and/or not operating as intended [URGENT]

APPENDICES

CONDITION REPORT

ELEMENT	DESCRIPTION	CONDITION	APPROX REPAIR COST (£)
Catmose College			
INTERNAL			
Ceilings	Concrete exposed soffits Plasterboard Mineral Fibre Suspended tile	Good Good Good Good	Nil
Walls	Plastered Fair faced block Hygienic cladding Ply facing Folding partitions	Good Good Good Good Good	Ni l
Floors	Carpet tiles Anti-slip Vinyl Sheet Vinyl Quarry tiles Wood strips	Good Good Good -minor discolouration Good Fair – Minor sanding and plan for cyclical sand/seal	Nil 1,000
Doors/Joinery	Pre-decorated solid core glaze/unglazed Powder coated aluminium and glazed	Good, Minor repairs to tighten loose handles etc Good	500
Decoration	Painted surfaces	Good Touch in minor scuffs. Programme for cyclical redecs from year 5	500
Sanitaryware	Vitreous glazed sanitaryware	Good	
		INTERNAL SUB TOTAL.....£2,000	

NOTES

ELEMENT	DESCRIPTION	CONDITION	APPROX. REPAIR COST (£)
Externally			
Walls	Dark grey stack bond blocks.	Good/Fair –Minor treatment to prevent water run off from window cills.	500
Cladding	Sinusoidal galvanised Aluminium rainscreen Multiwall Polycarbonate Cedar strip soffit lining	Good. Good Fair – replace missing trim at roof junction Minor sanding and treatment	1,000 500
Windows/curtain wall-ing	Powder coated aluminium framing and glazing	Good (see electrical section regarding control modules)	
Rooflights	Powder coated aluminium framing and glazing	Good	
Doors	Powder coated aluminium framing and glazing	Good	
Miscellaneous	Exposed galvanised steel structure stairways and walk-ways handrails etc	Good	
Roof	Flat with singly ply mem-brane.	Fair/Poor – Clear debris and ensure gullies are unblocked. Re-seat and repair all support feet to ser-vices cable trays	3,000.00

ELEMENT	DESCRIPTION	CONDITION	APPROX. REPAIR COST (£)
Roof	ETFE	Good - Consider re-placing anti- bird wires	2,000.00
Roofs	Tensile fabric canopy.	Good	
Hard Pavings	Tarmacadam car parking Pre-cast concrete slabs	Good Fair -Re-level slabs and tactile tiles on approaches to rear escape stairs	1,000
Hard Pavings	Gravel paved areas to front approaches	Re- dress roll and level	1,200
Generally	Concrete surfaces, external stair risers	Fair – Consider power washing to improve appearance	1,200
Soft Landscaping	Grass and painted areas	Good	
Boundaries/fences	Fences and gates, powder coated and galvanised gates posts and fences	Good	
		EXTERNAL SUB TOTAL	**£10,400**
		APPROXIMATE TOTAL REPAIR COSTS (Building Elements)	**£12,400**

APPENDICES

CONDITION REPORT

3.0. M&E Services Review

3.0.0 Electrical Services
There is a new sub-station on site and the main building is provided with a 2000 Amp, 3-Phase panel board in the electrical intake cupboard adjacent to the main boiler plant room. On the day of the visit with the classrooms full of pupils and the kitchens preparing for lunch, the building was drawing approximately 500 Amps per phase indicating that there would be spare capacity for the new extension if required.

3.0.1 Incoming Power
The main power distribution boards were all compliant, operational and in good condition as would be expected for a building of this age.

There are various local electrical distribution boards in cupboards throughout the building and spot-checks were made which confirmed that the general distribution is also in good condition.

3.0.2 General Lighting
Lighting is generally T5 fluorescent fittings supported by compact fluorescent lights in smaller areas. The lamps were generally in good condition although a few needed replacing above the central stepped seating area where access to high level is very difficult.

Whilst not a Condition-based issue, it would be recommended to replace these older T5 lights with modern LED Lights which due to their lower energy consumption, reduced maintenance requirements and longer life, would pay for itself in approximately 7 years. This would also help by reducing the maintenance access needs in these high-bay areas.

3.0.3 Emergency Lighting
Emergency lighting is provided as an integrated part of the main lighting systems. Whilst untested during the visit as the school was in full occupation, we were advised that the system was tested regularly and there were no issues. No immediate works required.

3.0.4 Intruder Alarm
There is an Intruder Alarm system installed comprising PIR sensors, window and exit door contacts, the system was operational, apparently without faults. No immediate works required.

3.0.5 CCTV System
There is CCTV cover to internal and external areas of the building, the system was operational, apparently without faults. No immediate works required.

3.0.6 Fire Alarm
There is Fire Alarm cover to the building, the system was operational, apparently without faults. No immediate works required.

We would comment that whilst there are no obvious faults, fire alarm components have a predicted operational life of 10-15 years so a programme of fire alarm components replacements should be planned over the next 3-5 years rather than wait for faults to start occurring.

3.1.0 Mechanical Services

3.1.1 Gas Service
A 125mm gas supply enters the premises via gas meter located in a meter cupboard adjacent to the main boiler house and serves the gas-fired central boiler plant, the kitchen, science benches and the Sports Hall boilers.

3.1.2 Heating Plant
There are 2 No. Hoval UltraGas 300 high efficiency gas boilers each rated at 273kW operating at 80/60 Deg.C. These boilers are supported by a Hoval 425kW Biomass Wood-Pellet boiler. Whilst the Biomass boiler is designed to take the lead on the heating with the gas-boilers in support, the Biomass boiler has not been used for several years due to the cost of the wood pellet fuel being significantly more expensive than gas. There is a large buffer vessel to help smooth the load. We were advised that the gas boilers operate sufficiently to hold the load and well within their capacity as they usually only need one boiler to hold the load, there is therefore likely to be spare capacity on the heating system for the proposed new extension, if required.

3.1.3 Heating Systems
The heating strategy generally is for perimeter convectors under the external classroom windows with underfloor heating to central core areas, all served from local VT/CT manifolds around the building. The mechanical services are all controlled and monitored via a Trend 963 control and monitoring system. The day of the visit was cold/rainy, and the buildings were warm, it was reported that the heating and control systems were working satisfactorily.

3.1.4 Domestic Hot Water
Domestic hot water heating for the Main School is via a hot water calorifier fed from the main gas boiler plant.

The Sports Hall has its own boiler plant and gas-fired water heaters as it is routinely operated into the evening for use by the local community after the school has closed for the day.

The hot water systems were both operational and delivered the required hot water throughout the school and sports facility. No immediate works required.

3.1.5 Water System and Sprinklers
A 100mm cold water metered supply enters the building via the boiler room and feeds the cold-water storage tanks and booster set serving the building as a whole and an unmetered supply that serves the sprinkler tank in the rear car park. The sprinklers have a main mains-powered pump and a diesel-powered back-up pump. The water systems were reported to be working OK and the sprinkler system is serviced and operational. No immediate works required.

3.1.6 Ventilation
The classrooms generally have natural ventilation via openable windows although rooms without external openable windows have mechanical extract and automatic openable windows from the internal communal areas and atria. These internal communal areas have automatic air intakes via automatic actuated windows over the exit doors. These automated window controls have been troublesome and three sets were non-operational on the day, previous similar area-faults had been traced the local control panels hidden above false ceilings and had cost £2,500 each area to remedy. A provision of £7,500 should be allowed to remedy these 3 non-operational areas.

The local air handling units were reported to be routinely serviced and all operational on the day.

3.1.7 Air-source Heat Pumps / Cooling

There are approximately 16 No. Mitsubishi split systems and one larger multi-split heat pump system serving high heat-load areas with condenser units on the roof. All looked in good condition and were reported to be regularly serviced, operational and trouble-free as would be expected for a 10 year-old system. These units have a nominal operational life of 15 years so should be OK for a further 5 years but plans put in place to replace these systems after a further 5 years.

3.2.0 M&E Budget Summary

Condition Items	Replace 3 No. Window Control Modules	£7,500	
		APPOXIMATE M&E REPAIR COSTS TOTAL	**£7,500**

APPENDICES

CONDITION REPORT, INTERNAL PHOTOGRAPHS

General view of ETFE roof and gallery

General view first floor vinyl

Typical corridor view -ground floor

Wear to gym floor

Typical classroom view

Automated doors

APPENDICES

CONDITION REPORT, EXTERNAL PHOTOGRAPHS

H

Loose tactile paving at landing

Water run-off and staining to blockwork

Concrete enclosures due for cleaning

Stair risers requiring cleaning

Compacted gravel paving

Missing trim to gym cladding

APPENDICES

CONDITION REPORT, EXTERNAL PHOTOGRAPHS

Slow draining roof gulley

Build-up of detritus

Displaced cable tray support

Screw from tray touching the membrane

Ponding water and detritus

Blocked outlet and ponding

General view—water laying on roof

Broken anti-bird wires

THANK YOU