

November 2021

**+BOWMER
+KIRKLAND**

Trinity Academy St Edward's Barnsley

Design & Access Statement



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Trinity Academy St Edward's | 1.00 Introduction



TRINITY ACADEMY ST EDWARD'S, BARNSELY
DESIGN & ACCESS STATEMENT | P3 | NOVEMBER 2021



1.00 Introduction

1.01 The Report

This document encapsulates the proposals for the provision of facilities for new secondary school facilities for Trinity Academy St. Edward’s, on the disused NHS Keresforth Centre site, off Keresforth Close in the Kingstone area of Barnsley.

This report has been prepared to accompany a detailed planning application, and should be read in conjunction with the completed forms, certificates, and supporting documents.

1.02 The Design Team

This statement has been prepared by the design team in conjunction with the senior management at Trinity Academy St. Edward’s, and the Department for Education. The principal contributors are as listed below:

Client	- Department for Education
Main Contractor	- Bowmer + Kirkland Ltd
Technical Advisors	- Turner & Townsend
Architect	- CPMG Architects
Structural Engineer	- Curtins
Building Services Engineer	- RPS
Landscape Architects	- Ares Landscape
Planning Consultant	- DPP
Highways Consultant	- Milestone
Fire Consultant	- Ashton Fire



1.00 Introduction

1.03 The Brief

The proposals for Trinity Academy St Edward’s comprises the construction of a new, purpose-built 6FE secondary free school, which is to be operated by Trinity Multi-Academy Trust. The school opened in temporary accommodation in September 2021, at Eastgate in Barnsley; the facilities described here are intended to provide a permanent home to the school from September 2023.

Trinity Multi-Academy Trust is a small but highly successful Trust operating both secondary and primary educational provision in West Yorkshire. The Trust is highly ambitious and has grown steadily, ensuring always that it has the capacity and capability to effectively support schools new to the Trust. Their approach has led to high levels of success for the learners in all the Trust’s schools.

The ethos of the Trinity MAT is simple – to make a positive difference to the lives of as many young people as possible. The Trust is open to schools of all faiths and none, all educational phases and all Ofsted judgments. It exists to serve the students in its care, and has a small number of core principles:

- All schools to actively support each other and to share best practice for the benefit of all
- All schools to celebrate its distinctive identity within our trust community
- Provision of quality-assured services to keep all schools legal, financially robust and continually improving

The Trust is committed to working within a respectful and compassionate environment. Schools are led by the core values of Empathy, Honesty, Respect and Responsibility, which are described as the Trinity DNA. The Trust’s mission is to make a difference to the communities their schools serve; this is achieved by inspiring every student to fulfil his/her potential. Their approach develops character and strong moral values in the students, allowing them to make a notable, positive contribution to society.



“

Our mission is to **make a difference** to the **communities** we serve, and we achieve that by **inspiring every student** to fulfil his/her potential. We **develop character** and **strong moral values** in our students, allowing them to make a notable, **positive contribution** to society.

”



1.00 Introduction

1.04 Pupil Numbers

The proposals are designed to accommodate 900 pupils aged 11 to 16 years, when at capacity. The Trust have estimated that their full time equivalent (FTE) staff numbers will total approximately 90pp.

The school is intending to grow to its full complement over five academic years, from its opening in September 2021. Its aim is to transfer to its proposed permanent site at Keresforth Close with three of these five years of entry, and low levels of occupancy, and grow to its full capacity in September 2025. The table opposite illustrates this steady incremental growth profile:

1.05 Operational Hours

The Trust’s current proposals for core term-time operational hours are for the following arrangements:

- Weekday: Core School Hours **0800 – 1600**
- Weekday: Wider School Hours (for staff, sports, clubs, evening events, etc) **0700 – 2200**
- Saturday: Wider School Hours (for sports, lettings, events, etc) **0800 – 2200**
- Sunday: Wider School Hours (for sports, lettings, events, etc) **0800 – 1800**

The Trust offer before and after-school club sessions which will generally fall within the anticipated core school hours. Events which fall outside of these times are to be expected, for example: sports events and competitions evening performances, open evenings, and parents’ evenings, as is usual for school facilities of this nature. These will generally fall within the anticipated wider school hours.

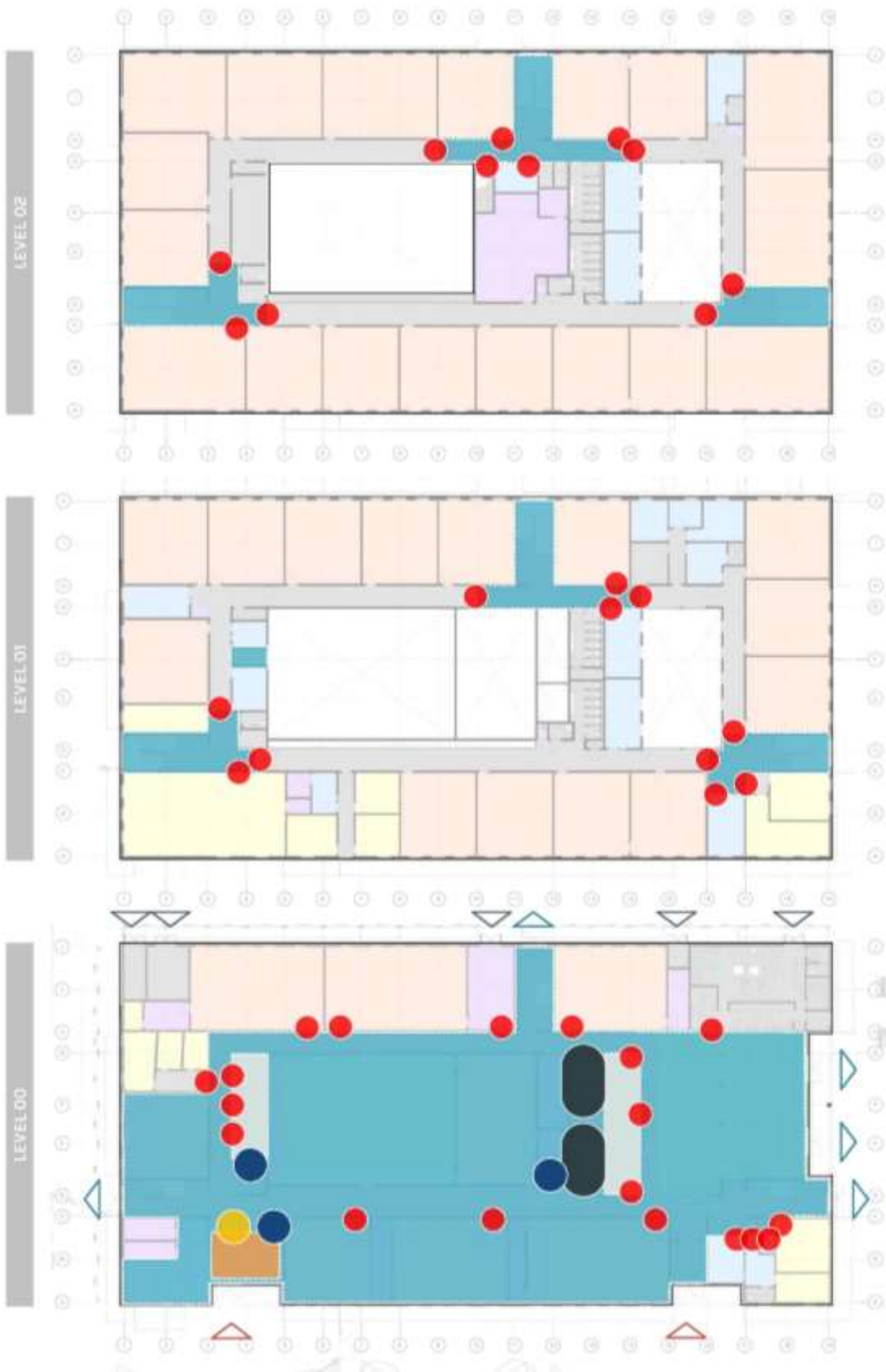
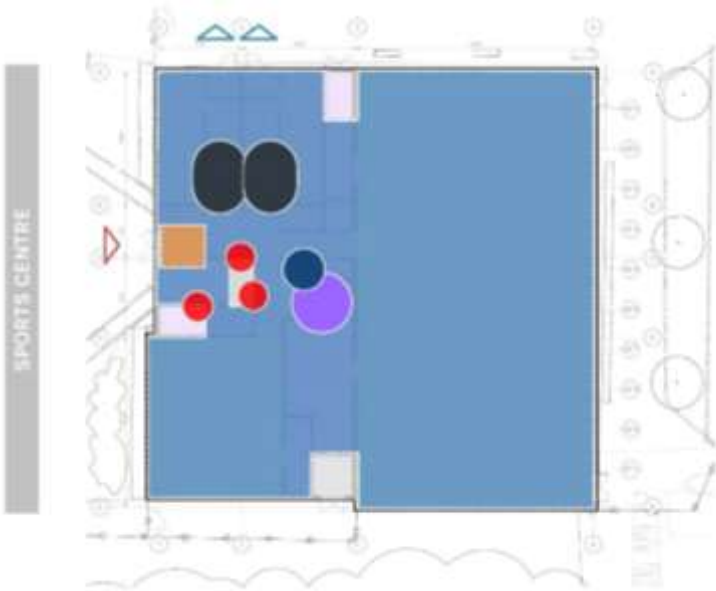
	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
	IN TEMPORARY ACCOMMODATION		IN PERMANENT ACCOMMODATION AT KERESFORTH CLOSE				
Y7 – Y11	180	360	540	720	900	900	900
Y12 – Y13	-	-	-	-	-	-	-
TOTAL PUPILS	180	360	540	720	900	900	900
TOTAL STAFF FTE	30	45	60	75	90	90	90

PUPIL NUMBERS: PROPOSED GROWTH

1.00 Introduction

1.06 Community Use

In addition to core education use, the Trust is keen to develop opportunities for third party use of the internal and external facilities, in order to create a vibrant community hub. The design allows simple zoning for out-of-hours use of a number of the internal facilities, including the Sports Centre and external pitches, Main Hall, Dining Space, Library & ICT facilities, offering meaningful opportunities for community use.



ZONING & SECURITY STRATEGY

1.00 Introduction

1.07 Proposed Floor Areas

The proposed gross internal and external floor areas (GEFA) are as follows:

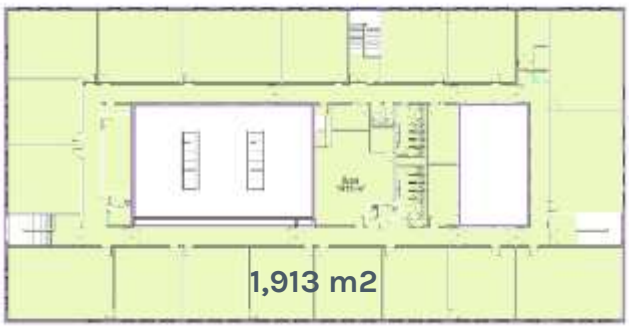
	GIFA	GEFA
Level 00 Teaching Block	2,142 m2	2,206 m2
Level 01 Teaching Block	1,721 m2	1,802 m2
Level 02 Teaching Block	1,831 m2	1,913 m2
Level 00 Sports Centre	1,087 m2	1,129 m2
TOTALS	6,781 m2	7,050 m2

TOTAL NEW GIFA 6,781 m2

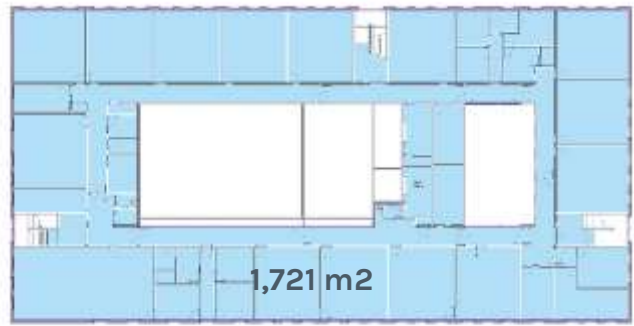
TOTAL NEW GEFA 7,050 m2



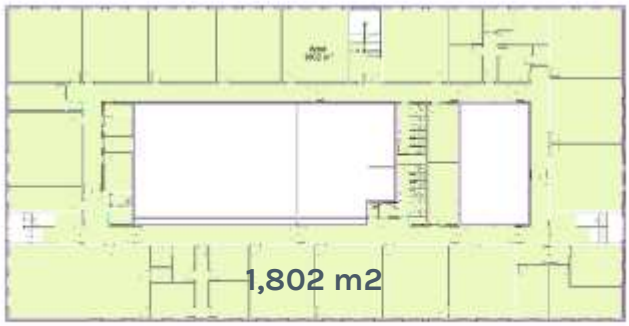
GIFA
LEVEL 02



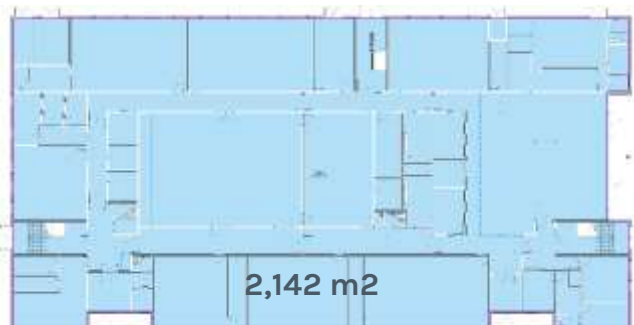
GEFA
LEVEL 02



GIFA
LEVEL 01



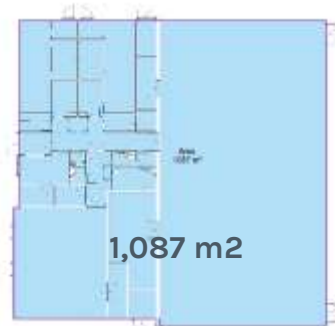
GEFA
LEVEL 01



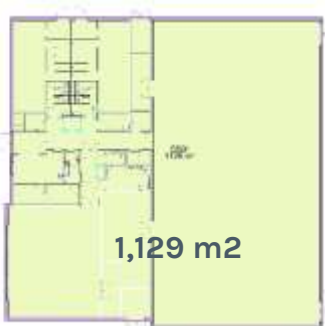
GIFA
LEVEL 00



GEFA
LEVEL 00



GIFA
SPORTS



GEFA
SPORTS

GROSS INTERNAL AREA PLANS

GROSS EXTERNAL AREA PLANS

1.00 Introduction

1.08 Demolitions

The site is currently occupied by a collection of disused, single-storey healthcare buildings, associated with the former NHS Keresforth Centre. These are in an increasing state of disrepair, and have become a target for arson attacks. They are to be demolished to prepare the site for redevelopment.

The existing footprint areas of these existing structures are as set out below (note that gross internal areas are estimated from the external footprints less an allowance for the external wall thickness):

	GIFA	GEFA
Block A	149 m2	162 m2
Block B	413 m2	447 m2
Block C	350 m2	373 m2
Block D	1,135 m2	1,191 m2
Block E	1,445 m2	1,509 m2
Block F	513 m2	540 m2
Block G	710 m2	755 m2
Block H	711 m2	756 m2
Block J	711 m2	756 m2
TOTALS	6,137 m2	6,489 m2

The quantum of new accommodation to be provided with the Trinity Academy St Edward’s proposal is therefore of a similar order of magnitude as currently exists on the site. The demolitions are being progressed under a separate application, ref. 2021/1160 (Barnsley MBC).



Trinity Academy St Edward's | 2.00 Planning Context

2.00 Planning Context

2.01 National Planning Policy Context

The NPPF (updated July 2021) attaches great weight to the provision of school places at Paragraph 95, and goes on to give support for opportunities for sport and physical activity (Paragraph 98).

The Ministerial Policy Statement 'Planning For Schools Development' reiterates the Government's commitment to providing sufficient demand for school places in state-funded education.

2.02 Local Planning Policy Context

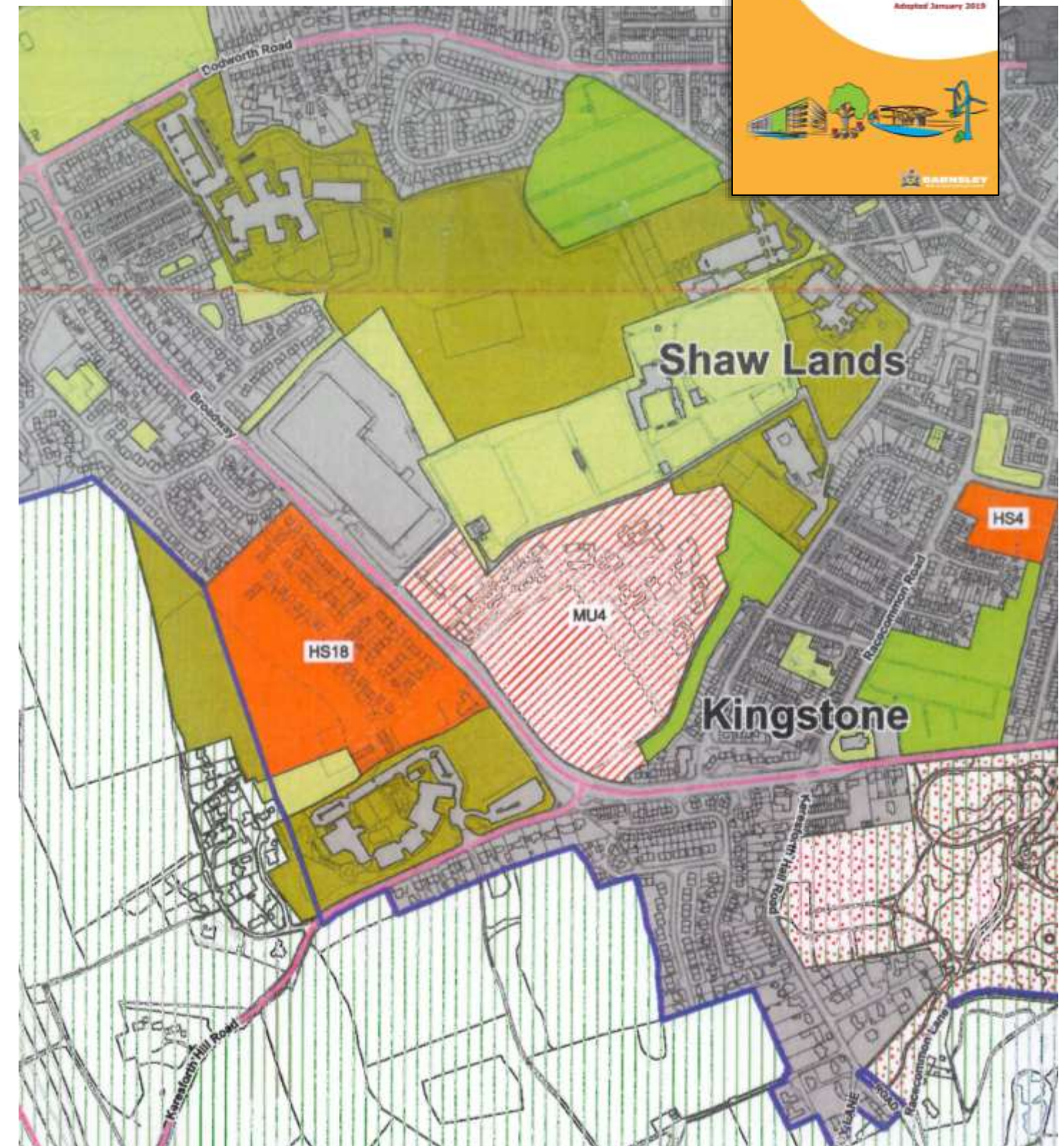
The Barnsley Local Plan (adopted January 2019) forms the Development Plan for the site. Within the Local Plan, the site is allocated for mixed-use, residential-led development under reference MU4; however, through pre-application discussions with the Council and in accordance with Barnsley Council Cabinet approvals, the principle of a school development on the site has been agreed to be acceptable subject to other policies being addressed.

Further details of relevant national and local plan policies are set out within the Planning Statement prepared by DPP.

2.03 Planning Pre-application Consultation

Detailed pre-application consultation has been undertaken with the Council in advance of the planning submission, including meetings with the design team and planning officers and a presentation to the Barnsley Design Review Panel, who gave a very positive response to the scheme.

Further details of pre-application consultation undertaken on this scheme is set out within the Statement of Community Involvement prepared by DPP.



PLANNING POLICY MAP – BARNSELY METROPOLITAN BOROUGH COUNCIL

2.00 Planning Context

2.04 Community Consultation

A comprehensive public consultation exercise has been undertaken to support the planning application. Letters informing local councillors, neighbouring residents and local businesses were sent out informing them of the emerging proposals and providing ways to respond with comments and queries on the proposals. The letters were also accompanied by leaflets with plans and images of the scheme, and a consultation website which provided further plans and images.

The consultation exercise has resulted in a number of comments being provided, with the majority of comments being in support of the proposals; a number of other comments or queries on the scheme were also received and details of how these are being addressed are included in the Statement of Community Involvement prepared by DPP.



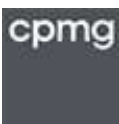
PROPOSAL FOR A NEW 6FE SECONDARY SCHOOL AT KERESFORTH CLOSE, BARNSELEY



Introduction

Welcome to the public consultation page for the exciting proposals for a brand-new 6 Form Entry (6FE) secondary school with associated access, landscaping and outdoor space for the new Trinity Academy St Edwards, on land at Keresforth Close, Barnsley.

IMAGE COPY OF THE PUBLIC CONSULTATION WEBSITE



Trinity Academy St Edward's | 3.00 Highways



TRINITY ACADEMY ST EDWARD'S, BARNSELY
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3.00 Highways

3.01 Highways Context

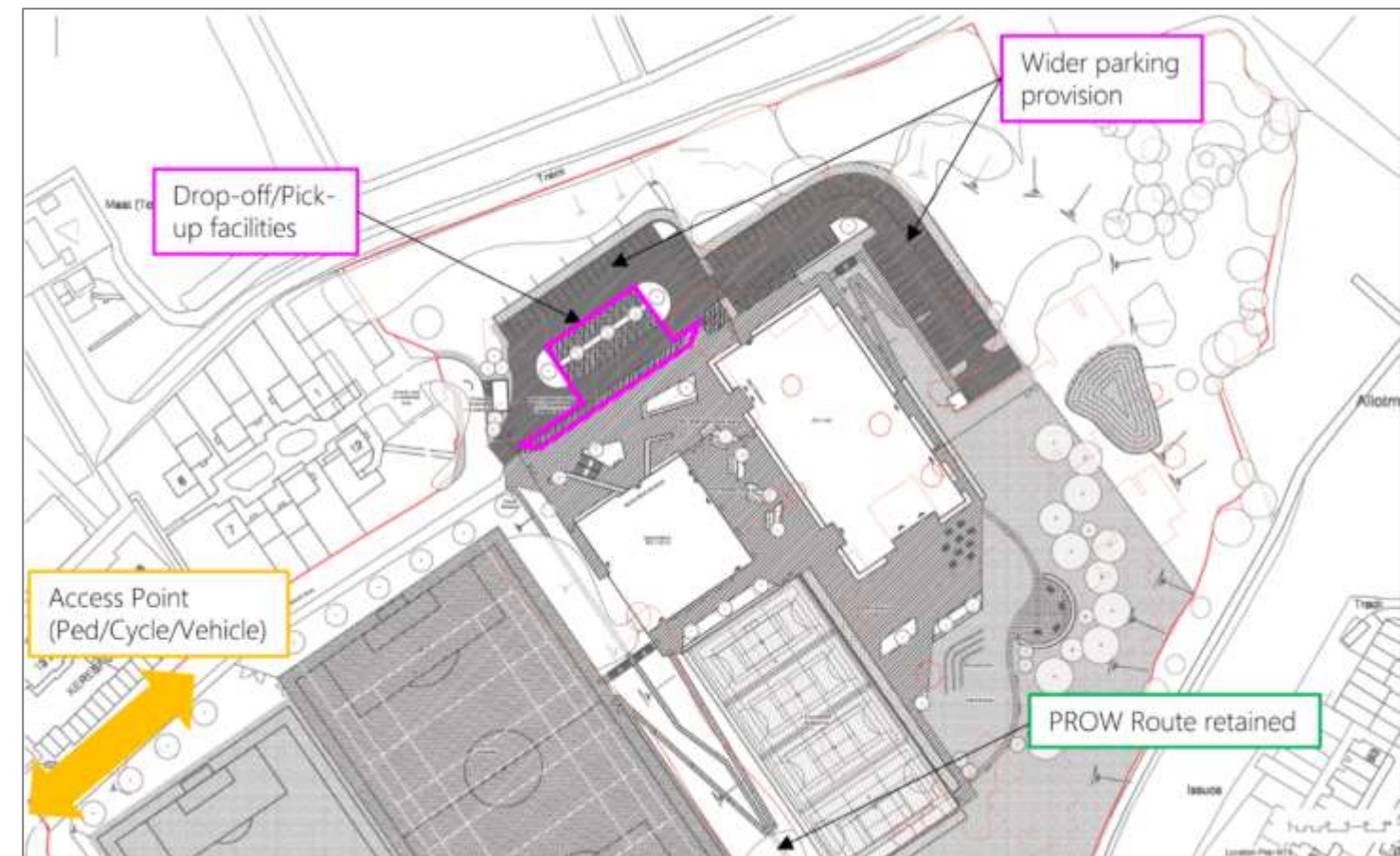
A Transport Assessment has been produced by Milestone Transport Planning Ltd. and submitted as part of this application to consider the implications of development related travel on the operation of the surrounding highway and transport networks. In addition, the Transport Assessment considers access arrangements, parking and application site connectivity by sustainable modes. A Travel Plan has also been produced. The Travel Plan proposes short and long-term strategies for reducing dependence on travel by private car for essential and nonessential journeys made by pupils, parents, and visitors to and from the school site.

3.02 Access and Parking

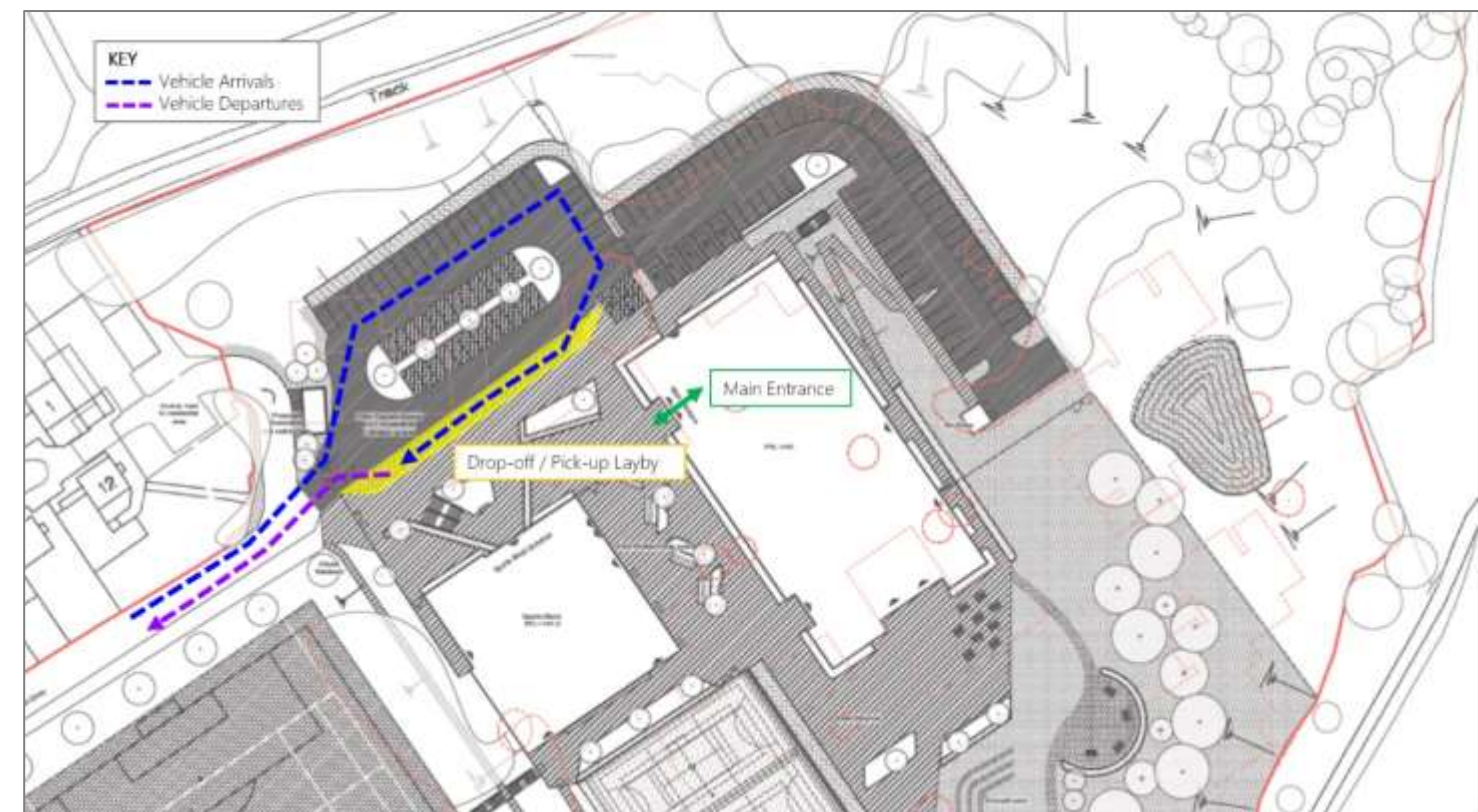
Access to the proposed school will be from Keresforth Close. The road will lead directly to the school car park and will be the principal access by all travel modes. Pedestrians and cyclists will enter adjacent to the vehicular access. A designated gated entry point will be provided directing pedestrians and cyclists to the main entrance of the school building and cycle parking, away from vehicular activity. This point of access will be used by pupils, staff and visitors.

It is envisaged that Keresforth Close will be made up to adoptable standard and subject to Section 37 / 38 of the Highways Act 1980, will become part of the publicly maintainable highway. The school will be provided with 118 car parking spaces, 7 disabled spaces and 7 minibus spaces. This includes space for c. 36 cars to drop-off / pick up, in the westernmost car parking area. The proposed level of car parking exceeds the standard prescribed in the Barnsley Parking Standards with a view to meeting the anticipated demand generated by the school operator, but more importantly to ensure that school-related parking does not ‘overspill’ onto the public highway.

The school will be provided with a total of 32 cycle parking spaces at the outset of the development. This is to comply with Barnsley standards of 1 long-term space per 10-30 pupils and 1 long-term space per 40 staff. The spaces will be located between the main school building and the sports block.



PROPOSED PEDESTRIAN / VEHICLE MOVEMENT AND ACCESS STRATEGY



ON-SITE DROP-OFF / PICK-UP ARRANGEMENTS

Trinity Academy St Edward's | 4.00 Site & Context

4.00 Site & Context

4.01 Site Context

The site is located in Barnsley and falls within the Barnsley Metropolitan Borough Council district of South Yorkshire. The site is located due south west of the city centre and bound by the A6133.



PROPOSED SITE

SITE BOUNDARY

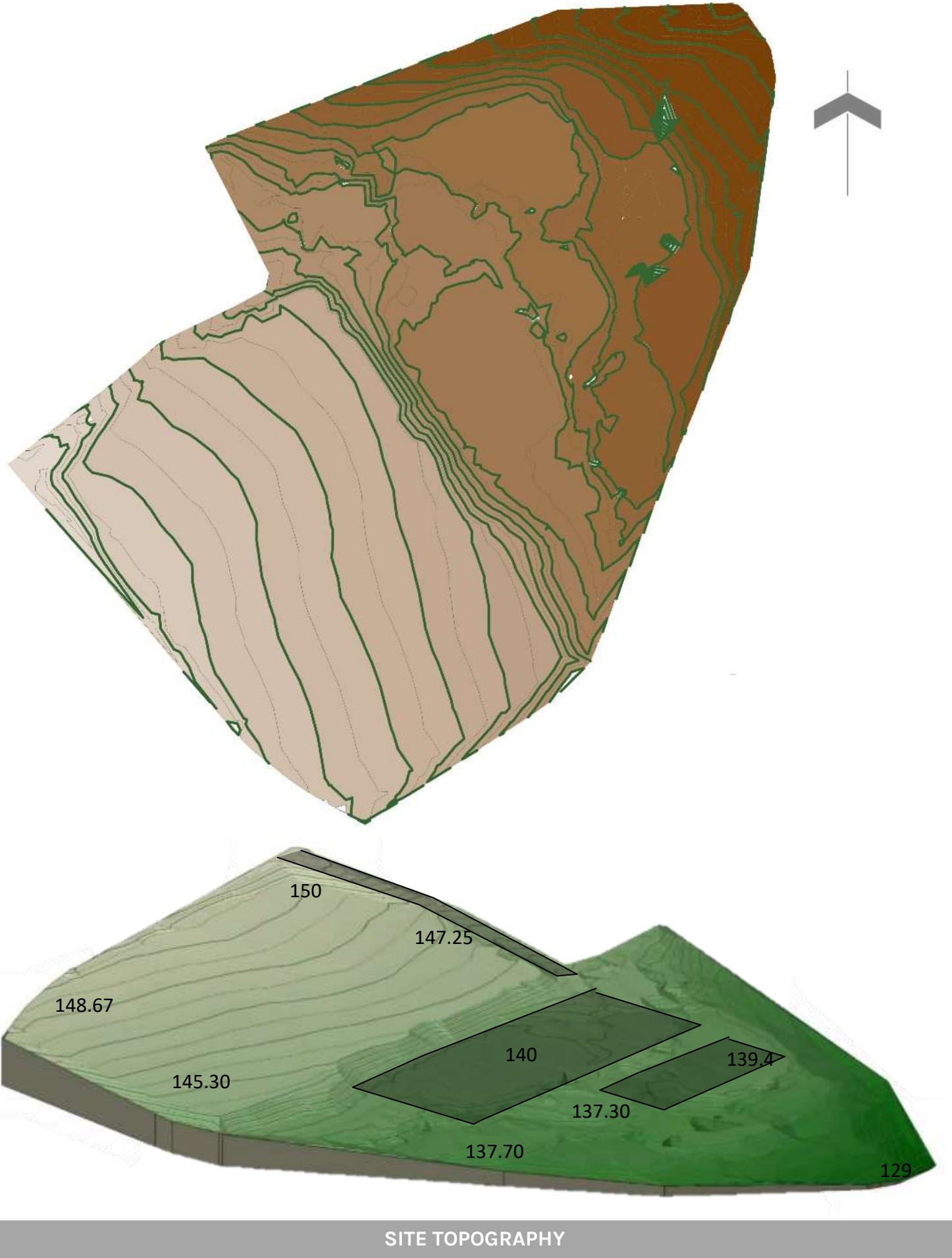
4.00 Site & Context

4.02 Existing Site

The site is approximately 7.2ha. It is bound by the A6133 Broadway to the south, Industrial units to the north and a primary school to the east. The site features existing trees to all boundaries. The northern boundary comprises a thicket of mature trees giving the impression of a wooded site. The site has an undulating topography with a 21m level difference from the western boundary to the eastern boundary.

The site has a history of coal working and below ground shafts. At present the site is occupied by an NHS facility spread across the eastern portion of the site with sporadic buildings ranging from single to 2 storey buildings. The existing playing fields to the west have been unused for many years and therefore no longer usable for sport. A Public Right of Way bisects the site from north to south down the middle.

Photographs of key features of the site are included on the following page.



4.00 Site & Context



LONG APPROACH ON KERESFORTH CLOSE



DISUSED NHS BUILDINGS



EMBANKMENT | DEVELOPMENT PLATEAUX



ELEVATED FIELDS | POTENTIAL DISTANT VIEWS

4.00 Site & Context

4.03 Site Constraints



Trinity Academy St Edward's | 5.00 Site Masterplan



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5.00 Site Masterplan

5.01 Landscape Masterplan

The landscape design aims to create a functional landscape that can be used to aid the everyday learning of pupils at the school. The site masterplan has been divided into halves: the playing fields to the west and the main school development to the east. Vehicular access to the development will come from an existing highway to the south-west, via the existing unadopted Keresforth Close.

The site, a former NHS facility, has a Public Right of Way (PRoW) dissecting the site through the middle, therefore separating the sports pitches to the west and the main school development area to the east.

The hard landscape material palette comprises robust and cost effective materials, including concrete block paving that has been used to highlight the main entrance. The site benefits from mature existing vegetation along the boundaries that have largely been retained. New planting has been proposed to northern and southern boundaries in order to better integrate the new development in with its surroundings and to screen views in towards the site. Other proposed planting areas are predominantly located against the building facade to provide window collision protection and restrict direct pupil access to classroom windows. Soft landscape areas have also been used to break up and add interest to larger areas of hard landscape.



5.00 Site Masterplan

5.01 Landscape Masterplan (cont.)

The role of landscape in the scheme has been to create a masterplan for the site which is responsive to the parameters, the MMC Framework, the school operational requirements and DFE guidelines, but most importantly its response to the site's unique opportunities and constraints.

A number of building orientations and layouts have been tried and tested, resulting in the chosen proposals that best maximise the opportunities of the site, minimise impact to sensitive areas and benefit greatest the school.

The site's topography has had a significant influence in the development of the site layout. From the placement of built form on the raised plateau, to the arrangement of sports pitches to ensure free movement and accessibility for all across the site. The result has been a design that effectively frontages the key boundaries, provides easy access and wayfinding, whilst also maintaining the existing mature tree planting.

In terms of accommodation the proposals account for a visitor and accessible car park, pedestrian arrival plaza, a series of hard and soft informal external spaces, pupil and staff cycle parking spaces, and an artificial turf football pitch.

New planting has been proposed to northern and southern boundaries in order to better integrate the new development in with its surroundings and to screen views in towards the site. Other proposed planting areas are predominantly located against the building facade to provide window collision protection and restrict direct pupil access to classroom windows. Soft landscape areas have also been used to break up and add interest to larger areas of hard landscape.



ILLUSTRATIVE MASTERPLAN (DETAIL)

5.00 Site Masterplan

5.02 Vehicle, Cycle & Pedestrian Movement

Keresforth close is maintained as a public highway and utilised as the main vehicular route in and out of the site. The car park layout maximises the ability to stack cars within the site at peak pick-up/ drop off times. This is seen as useful mitigation of the off-site Highways issues by the Local Authority. The layout also minimises clashes between staff parking and pupil drop off to provides safe, navigable access for visitors and pupils alike.

Pedestrian circulation around the site has been carefully considered to ensure that pathways follow natural desire lines to building entrances in order to minimise the risk of vehicle/ pedestrian conflicts. A sense of arrival has been created along the northern pupil/visitor route to the main entrance. The route runs through an existing naturalistic, tree lined buffer before taking a direct route into the main entrance.

The aforementioned PRoW from north to south within the site is retained ensuring that this is still available to the public however the boundary treatments deal with the safeguarding of the pupils.



ACCESS & CIRCULATION – MORNING & AFTERNOON



ACCESS & CIRCULATION – COMMUNITY ACCESS (OUT OF HOURS)

- Movement**
- Car Access**
Staff & Drop Off
 - Pedestrian Access**
Pupils & Staff Use
 - Servicing Access**
Delivery vehicles & Bin lorries
 - Community/Visitor Access**
Pedestrian/Vehicular access
- Gate Locations**
- Gate location - OPEN
 - Gate Location - MANAGED
 - Gate Location - LOCKED

5.00 Site Masterplan

5.03 External Sports Provision

To maximise sports provision the proportions of the playing field have been prioritised whilst still allowing effective use of the rest of the site. The winter sports layout achieves two 97 x 61m football pitches, plus a 7 vs 7 61 x 43m pitch. Also proposed is a 106 x 70m Synthetic Turf Pitch. A dedicated route from the changing rooms to the playing fields means community use is made an integral part of the design from the start.



5.00 Site Masterplan

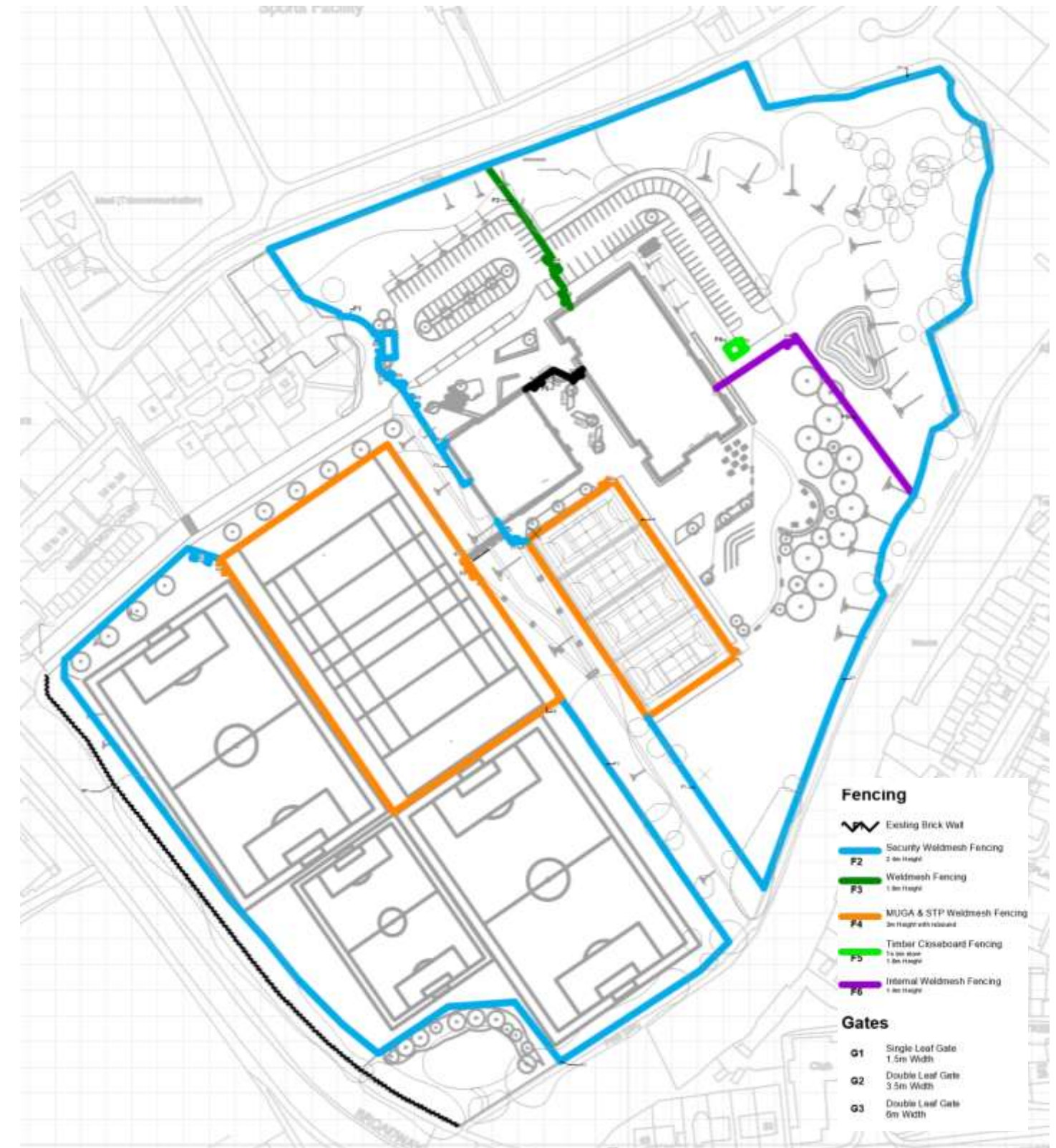
5.04 Site Security and Boundary Treatment

The school masterplan has been designed to create an efficient secure line given the constraint of the PRow. Siting of internal fencing has been carefully considered to create a school site that can be easily managed both during and outside of school hours.

The boundary fencing will replace the existing fence to the all boundaries. The existing trees will ensure that the fencing is softened across the site. All proposed weldmesh fencing will be specified in a dark, recessive colour in order to reduce its prominence, particularly along the site boundaries. The aforementioned PRow will be fenced off from the main development site, the school will manage the access gates during curricular events and break times..



ACCESS & CIRCULATION – MORNING & AFTERNOON



FENCING GENERAL ARRANGEMENT

5.00 Site Masterplan

5.05 Existing Site Ecological Value

A Preliminary Ecological Assessment was carried out by Waterman in July 2020. It was concluded that the site was of negligible ecological importance due to the heavy management of habitats and poor plant diversity. Although the site has a low ecological value, the existing trees to the site boundaries were found to have some nesting and foraging value for birds. These trees have been retained where possible.

Proposed Ecological Enhancements

The proposed masterplan has been developed to include new habitats in order to improve the site’s ecological value. These habitats include the following:

- Species rich grass seeding
- Native shrub buffer and hedgerow planting
- New tree planting
- Ornamental, flowering herbaceous plants



Trinity Academy St Edward's | 6.00 Design Proposals



TRINITY ACADEMY ST EDWARD'S, BARNSELY
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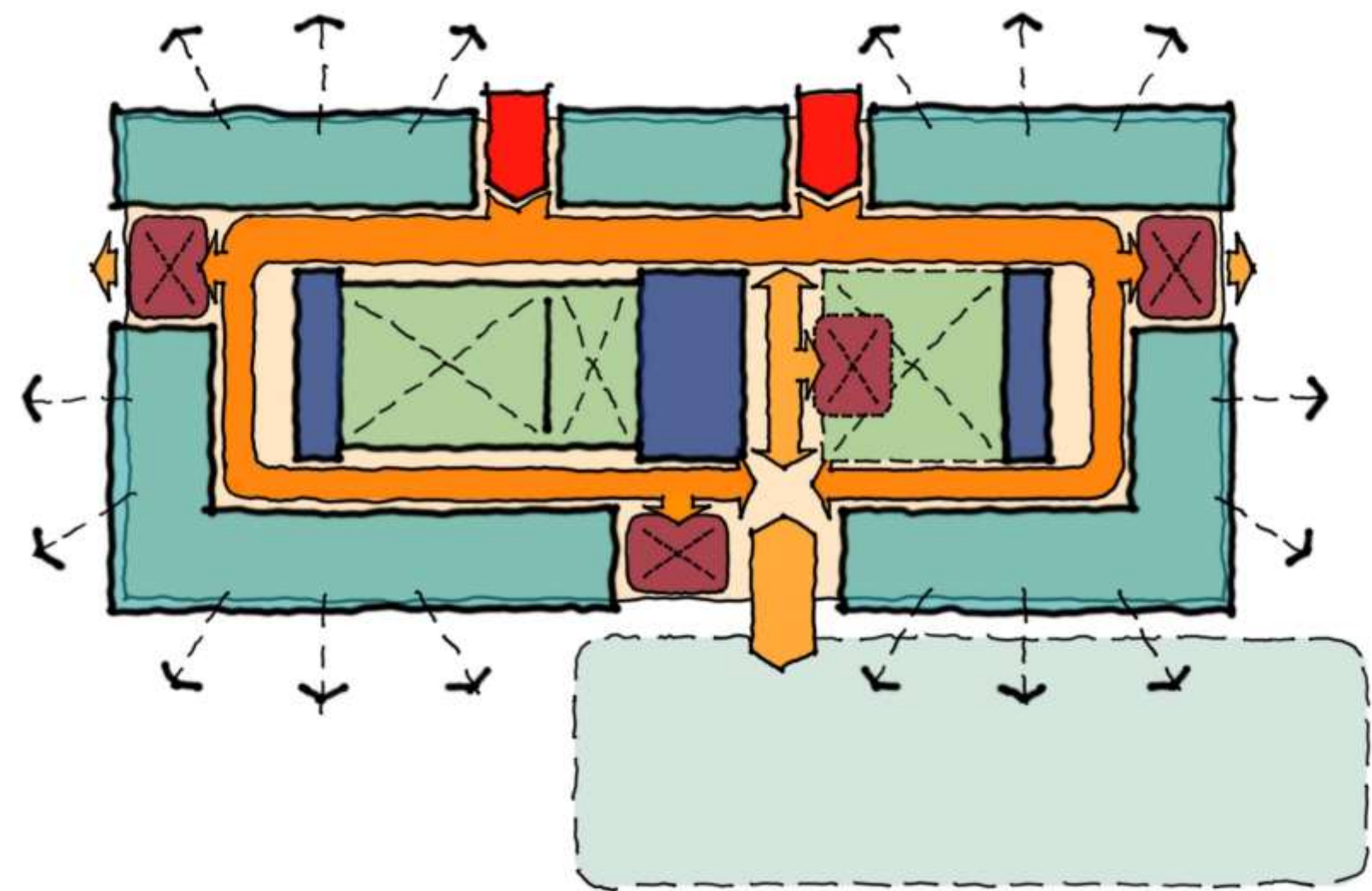
6.00 Design Proposals

6.01 Building Concepts

ESTABLISHED SUPERBLOCK TYPOLOGY

The design proposals adopt the ‘superblock’ approach established as an exemplar in the DFE’s Baseline Designs for Schools. This approach provides a simple and effective diagram for pupil access and movement, within a compact, spatially efficient layout. The principal attributes of the building organisation are as follows:

EFFICIENT FORM & ENVELOPE	Strong & confident form Efficient internal proportions & form factor
HORIZONTAL CONNECTIVITY	Flexibility for multiple entrances Looped arrangement: diversity of routes with no dead ends Central link providing axis to external areas
VERTICAL CONNECTIVITY	Distributed stairs minimising congestion Equally spaced to suit emergency travel distances Views and access to outside
CENTRAL HEART SPACES	Two cores: Main Hall / Drama & Dining atrium Circulation animated by Dining Heart Space
TEACHING ‘RIBBON’	Flexible floorplate with outward aspect Single-sided teaching corridors
INTERNAL SPACES	Service and ancillary spaces in deep-plan internal areas Light-well voids bring natural light and vent



CONCEPT DIAGRAM: SUPERBLOCK TYPOLOGY

6.00 Design Proposals

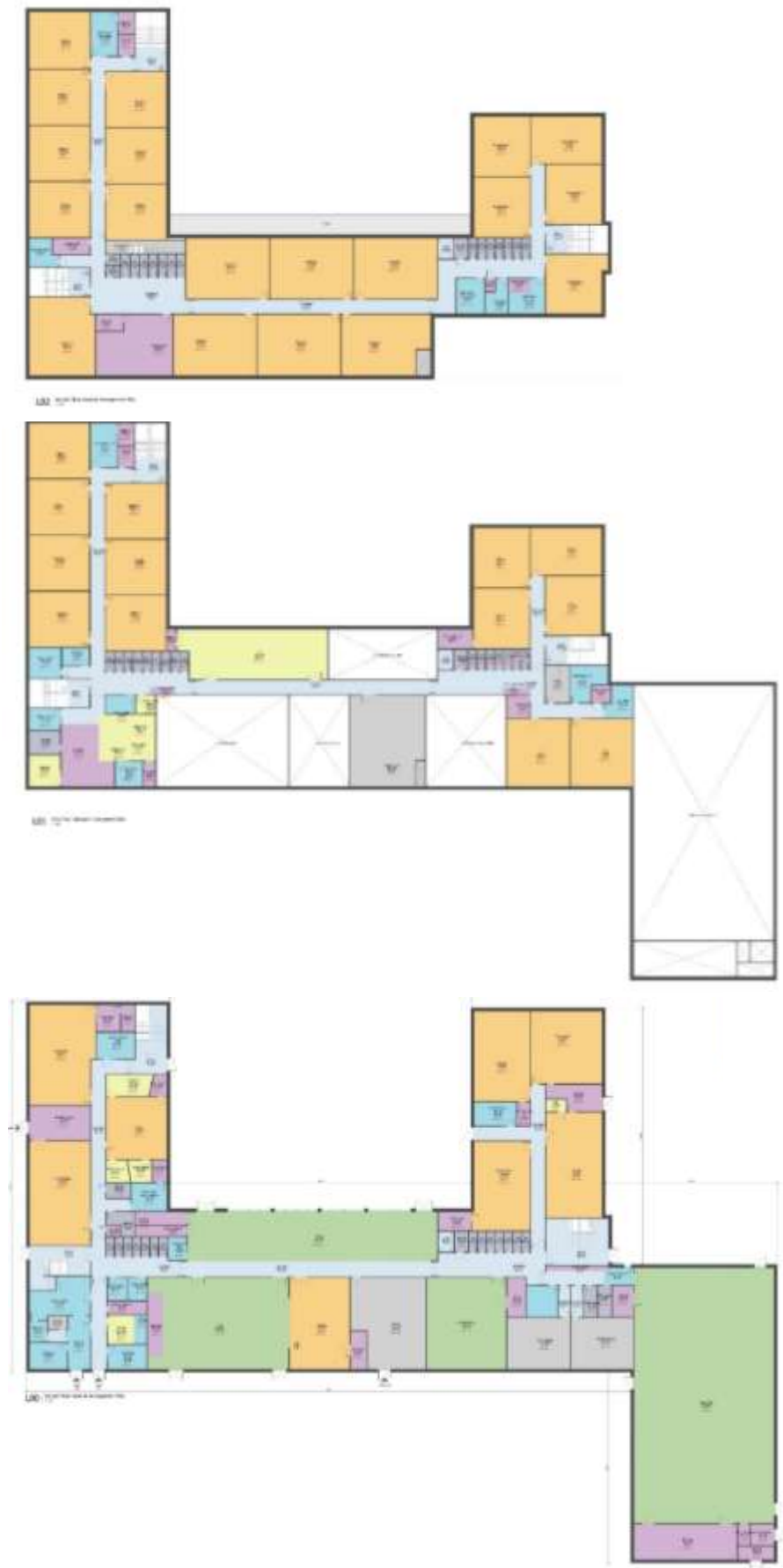
6.02 Internal Building Organisation

The proposals aim to create a calm and sophisticated environment, reflecting the traditional values and high expectations of the Trust. Movement around both the new school buildings and the grounds is generous and legible, supported by distributed staff spaces offering simple passive supervision. Together, these principles ensure that the time of the staff and students is spent productively and constructively in teaching and learning. The quality of the proposals will inspire and motivate learners, provide an environment in which students can realise their full potential, and will assist in the recruitment of high quality staff.

The key principles underpinning the design development have been as follows:

- Offering a formal, welcoming, public-facing visitor entrance
- Providing separate student entrances to minimise congestion at key periods
- Integrating strong connectivity to the external landscape, orientated for a sunny aspect
- Providing a focal heart space internally, with a centralised cluster of main halls and dining
- Maximising opportunities for community, with a clearly-defined Sports Centre and simple internal zoning of halls, dining, library and ICT spaces for events and third party use
- Locating the Library in a prominent central location, overlooking the main entrance
- Creating a flexible pastoral support hub, capable of supporting the Trust’s extended SEND programmes
- Ensuring simple, unobtrusive servicing and delivery arrangements

The Schedule of Accommodation has been carefully tailored with the Trust to ensure that it fully supports their academic and pastoral approach.



LEVEL 02

LEVEL 01

LEVEL 00

DfE CONTROL OPTION LAYOUTS

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

CLEAR BUILDING ORGANISATION

The organisation directly reflects the Trust’s proposed clustering, providing inter-departmental connections to support the Trust’s curriculum approach. For example, Science is paired with Maths, English with the Library, Art with Design Technology, and Music and Drama with the Main Hall Space. The sports hall and activity studio form a further strong cluster, in a separate building facing the principal community approach, and with direct access to the external sports facilities.

WELCOMING AND SECURE ENTRANCES

The visitor’s entrance is highly legible, facing the principal approach from Keresforth Close, and identified with a deep recess and generous glazing. Internally, the reception area is welcoming yet secure, with excellent visibility to and from the principal approaches. The reception desk allow sufficient space for low- and high-level desking to ensure all needs are respected. Waiting areas allow space for seating and offer direct access to an interview room and to a visitors’ AWC, simplifying safeguarding. The separate student entrance adopts a similar recessed appearance, creating a sense of symmetry to the main west-facing façade. The access from the Dining heart space to the southern landscape area also features a deep recess, continuing the visual motif, as well as offering some space for sheltered external dining.



VISITOR ENTRANCE | APPROACH & INTERNAL VIEW

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

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AERIAL VIEW CUTAWAY PLAN

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)



DINING HEART SPACE

CORE

DRAMA

MAIN HALL

CORE

TEACHING

LONG SECTION

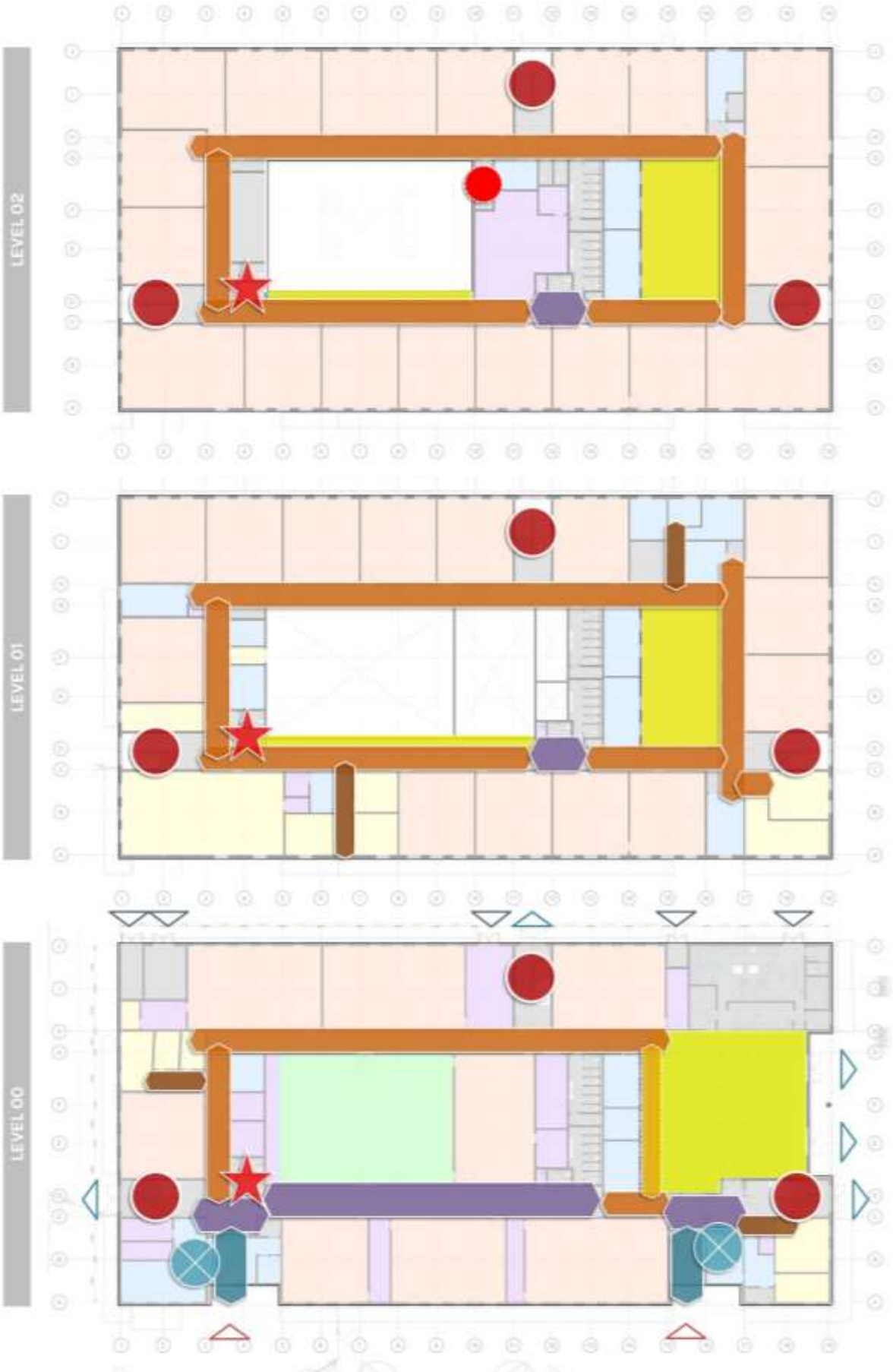
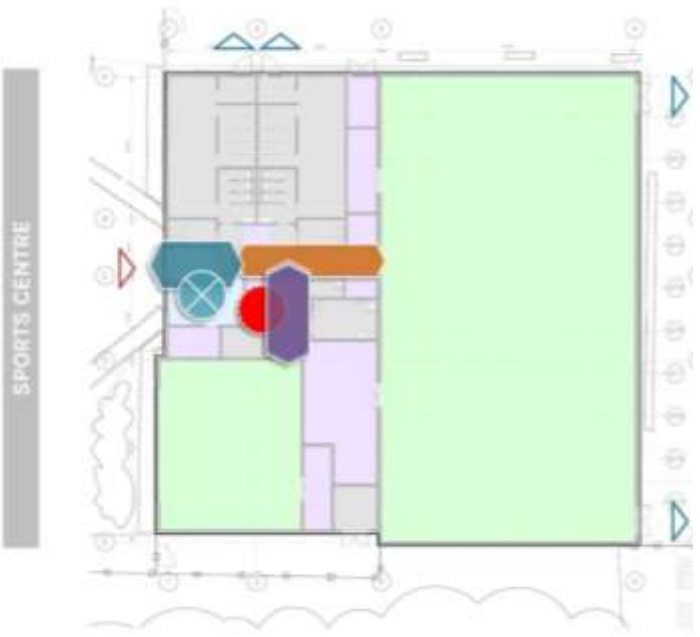
6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

GENEROUS AND WELL-CONSIDERED CIRCULATION

All main circulation routes maintain appropriate clear widths to support the calm movement of pupils, with 1.95m generally and 2.8m increased width in the main spine at Level 00 linking the main entrance to the Main Hall & Dining Heart Space. The latter is a significant visual feature, and greatly contributes to the quality of the internal circulation. Corridors adopt a galleried arrangement at all levels to the east and west of the atrium. This allows them to benefit from the daylight entering from large rooflights over, and provides additional animation with wider vies through and across the social space.

Three enclosed escape stairs offer highly legible and easily supervised vertical movement. Stairs are light and airy, with large windows bringing light deep into the circulation areas; this is supplemented by glazed side-lights to a number of internal spaces.



ACCESS & CIRCULATION STRATEGY

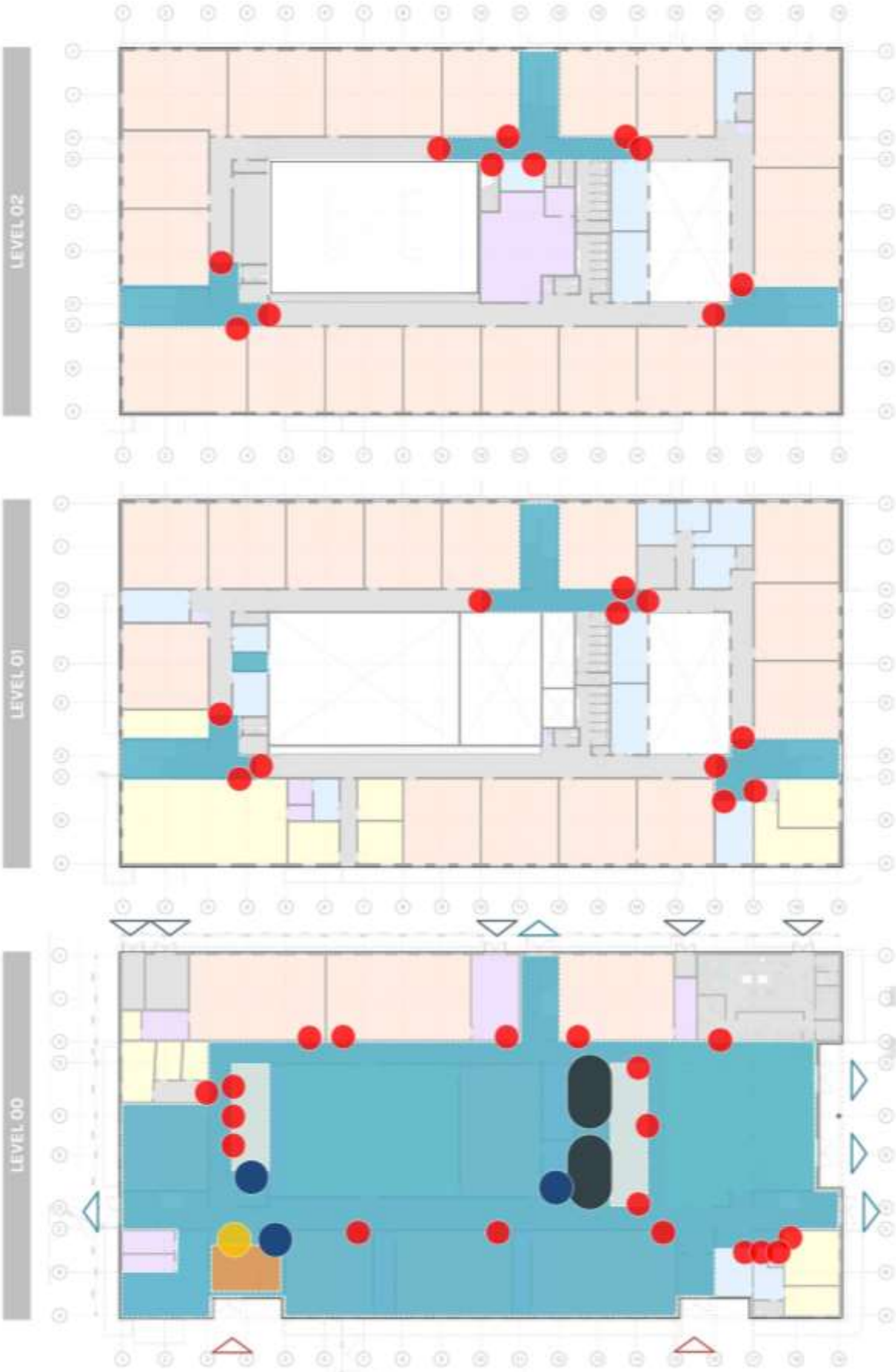
6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

SIMPLE ZONING FOR WIDER COMMUNITY USE

Zoning has been carefully considered to maximise potential for wider community and events use. In particular, the indoor and outdoor sports facilities are tailored to ensure that their use by third parties can be maximised within the limits acceptable to the Local Authority. Direct external access to and from the sports changing rooms avoids tracking of muddy boots through the internal circulation from the playing fields, and minimises the internal areas needed for to be opened for out-of-hours sports activities.

A further community use zone has been tailored to provide out-of-hours access to support events and performances in the Main Hall, the Drama Studio, as well as the Dining Heart Space and Level 01 Library, whilst simply restricting access to the remaining spaces. This arrangement includes access to the external social space, and has been tested to ensure appropriate emergency escape and WC access is available.



SECURITY AND COMMUNITY USE ZONING STRATEGY

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

LEVEL 00 LAYOUT:

- ✓ Permeable plan with clearly modelled entrances
- ✓ Main entrance oriented towards main approach
- ✓ Separate student entrance leading into heart space
- ✓ Halls & Dining atrium form central heart spaces
- ✓ Dining with direct link to southern landscape
- ✓ Community use opportunities maximised
- ✓ Level 00 priorities met: arrivals / Music / Art / DT
- ✓ North-facing Art rooms
- ✓ Escape stairs open into secure site areas
- ✓ Simple unobtrusive servicing & delivery



6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

LEVEL 01 LAYOUT:

- ✓ Level 01 priorities met: Library / English / SEND
- ✓ Library overlooking principal approach
- ✓ Circulation areas animated by voids
- ✓ Segregated reflection cluster
- ✓ Distributed staff presence



LEVEL 01

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

LEVEL 02 LAYOUT:

- ✓ Level 02 priorities met: Science / Maths
- ✓ Simple fume cupboard extract to roof
- ✓ Central science prep room
- ✓ Circulation areas animated by voids
- ✓ Distributed staff presence



LEVEL 02

6.00 Design Proposals

6.02 Internal Building Organisation (cont.)

SPORTS CENTRE:

- ✓ Separate Sports Centre ideal for community use
- ✓ Formal entrance faces community
- ✓ Activity Studio animates frontage
- ✓ Separate pupil access from within secure site
- ✓ Provision of WCs and accessible facilities to support wider community use
- ✓ Secure exam store to support exam use



6.00 Design Proposals

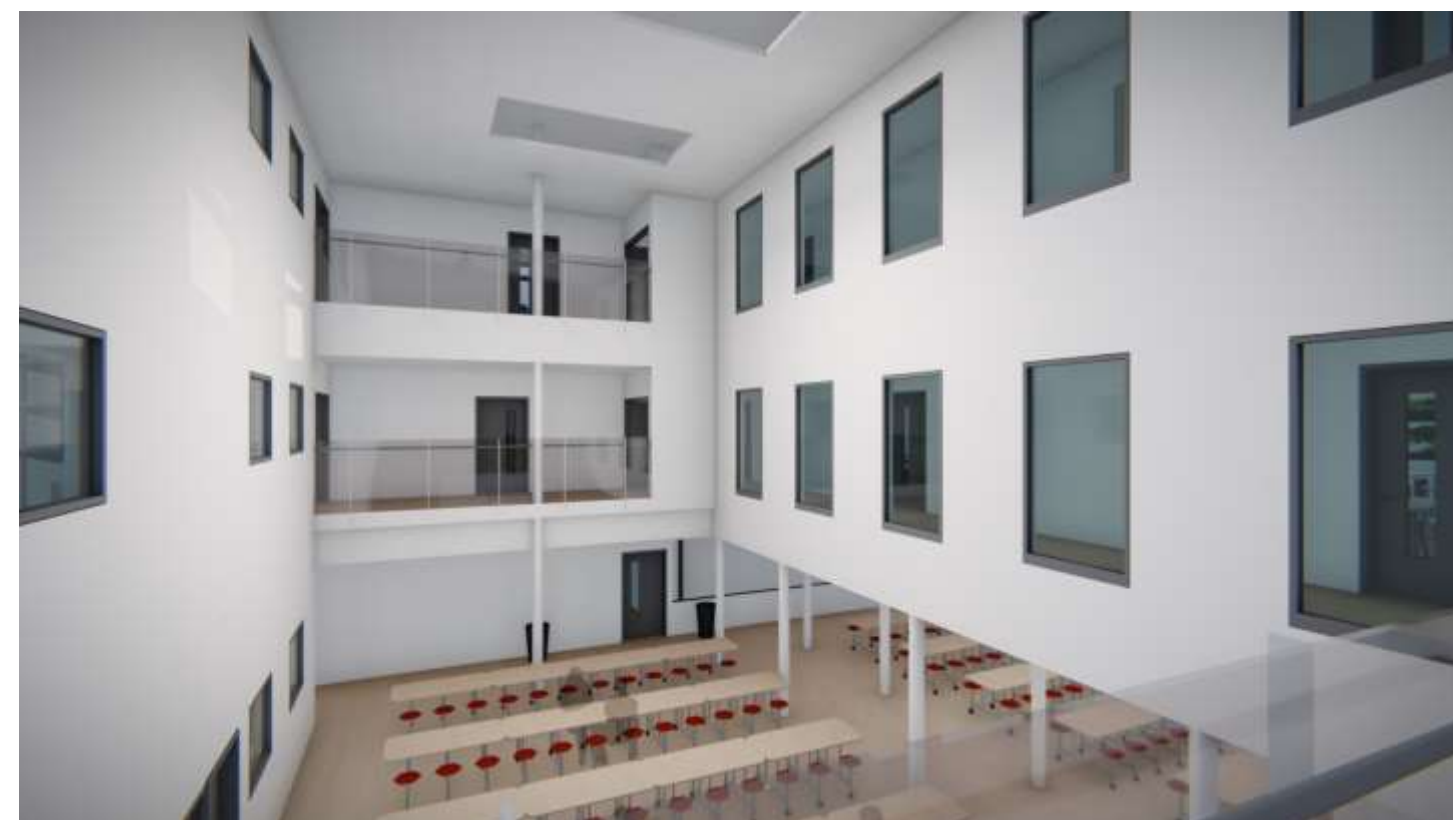
6.03 Interior Spaces

FOCAL HEART SPACES

The interior spaces of the new academy will be bright, robust, and attractive, and will above all promote a sense of calm and order. The proposals feature a dramatic central ‘heart’ dining space at ground floor level. Circulation routes to it are connected but distinct from the main hall to minimise disruption and congestion when the spaces are both in use. The dining space is open to the surrounding circulation zones, and is overlooked by curriculum teaching and staff spaces at each floor. The space is triple height, with extensive rooflights giving generous levels of daylight.

HIGH QUALITY MATERIALS

The high quality look and feel established externally by the civic character of the hard landscaped spaces and the elegant brickwork and rainscreen-clad elevations is continued into the internal spaces. All finishes and components meet or exceed the DfE’s Output Specification requirements, and will provide an environment of which the staff and pupils will be proud. In particular, all balustrading will be glazed, maximising the sense of light and space, and ensuring visibility for passive supervision.



PROPOSED DINING HEART SPACE (ABOVE) & MAIN HALL (BELOW)

6.00 Design Proposals

6.03 Interior Spaces (cont.)

OPTIMISED TEACHING ENVIRONMENTS

The classrooms are set out in a consistent and logical format, with a teaching wall adjacent to the corridor entrance door, and perpendicular to the windows in line with best practice. Space planning adheres to the DfE’s optimal 7.8m room depths, offering maximum flexibility, and all net area requirements are achieved with excellent room proportions. Window areas are large, with high head heights to optimise daylighting. Precast concrete soffits are set at 3.325m height, providing an airy and spacious feel to the rooms, with suspended light fittings and bulkheads set at 2.7m neatly coordinating the building services installations and acoustic absorption.

The engineering aspects of the teaching spaces have been carefully considered and co-ordinated to optimise the learning environment, balancing daylighting and glare control, thermal mass and passive cooling, natural ventilation with mechanical heat recovery, and neatly integrating acoustics and building services. Controls are user-friendly and teacher-oriented, including a manual override which reverts to central settings after a pre-set time, with central control available through the BMS system. The high thermal efficiency envelope minimises heat loss, and provides additional benefits: efficient windows no longer require local heat sources, and low heating loads eliminate radiators. Collectively, this maximises flexibility for furniture positions within spaces.



TYPICAL TEACHING & LEARNING SPACES

6.00 Design Proposals

6.04 Scale & Massing

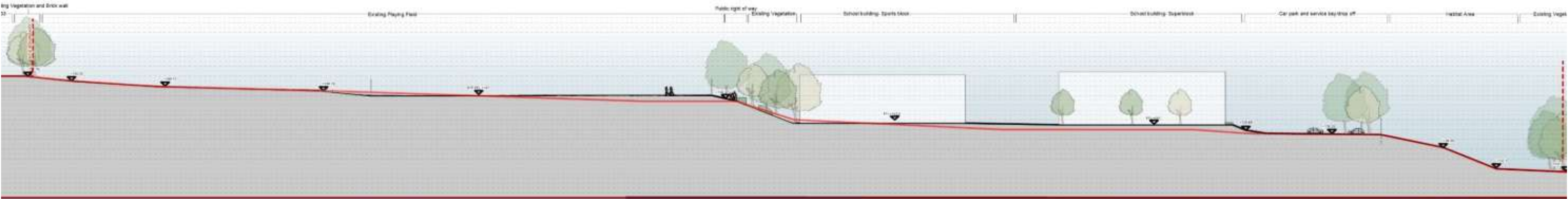
The new building forms will sit comfortably in the landscape. The masterplan strategy locates the built form on the northern area of the site, where levels are well below the access from the A6133 Broadway, and behind the heavily-planted embankment which subdivides the site. As a result, despite the three-storey massing, the new forms are very well-screened from public view.

A key consideration of the architectural design has been to provide a human scale to the new accommodation, to provide a fitting and welcoming scale on the site. The chosen approach of footprint, massing and orientation has a number of important advantages in this respect:

- The positioning of the buildings at the lower end of the site minimises their visual impact in a sensitive setting
- The separation of the sports centre from the main teaching block provides an opportunity to establish semi-enclosed courtyard spaces between the buildings, and at the main entrances, and creating a fitting sense of arrival
- The integration of the existing mature landscaping features ensures the established nature of the campus is retained, providing a readymade attractive backdrop to the new school



EARLY MASSING & MATERIALS STUDY



SPORTS FIELDS

SLOPE

PROPOSED NEW BUILDINGS

CAR PARK

HABITAT AREA

SITE SECTION

6.00 Design Proposals

6.04 Scale & Massing (cont.)



SPORTS CENTRE

COURTYARD

PUPIL ENTRANCE

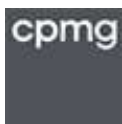
DINING HEART SPACE

TEACHING

CROSS SECTION CUTAWAY



TRINITY ACADEMY ST EDWARD'S, BARNSELEY
DESIGN & ACCESS STATEMENT | P3 | NOVEMBER 2021



6.00 Design Proposals

6.05 Building Materials & Construction

The creation of permanent facilities for Trinity Academy St Edward’s is a major investment for current and future generations. The design proposals have been designed to be elegant and sophisticated, to use a robust palette of traditional materials that will stand the test of time, and to integrate passive environmental design principles to enhance performance and reduce energy consumption in use.

The proposed elevational treatments deliberately draw upon the character of the local Kingstone area. Both main school and sports centre have a traditional red-brown brickwork treatment to ground floor areas, which provides an inherently robust plinth. Upper floors are treated with a clean-lined rainscreen cladding panel, in a stone grey – this contributes to a light and welcoming appearance, and is both understated and contemporary in manner. A hint of playfulness is injected by the selective use of colour in window renewals, picking up on the dominance of red in the School’s brand.

The designs adopt a red-brown coloured brickwork, with subtle colour variation, to offer a traditional and welcoming feel, and to reflect the local context. An additional sense of craftsmanship is provided by feature brickwork panels between windows at ground floor level. The window and curtain wall framing is to be powder-coated aluminium with a neutral grey finish.

In this way, the proposed palette of materials achieves a number of key benefits:

- It establishes a sense of calm and order by invoking a classic collegiate aesthetic, which in turn reflects the Trust’s ethos of human scale and moral values in a modern world
- The natural brickwork adds a visual warmth and texture, and provides a familiar and attractive backdrop to learning which will help the students feel safe and comfortable
- It ensures robust and minimal maintenance requirements, with masonry to all walls up to 2.7m above ground level
- The element of playfulness reflects the purpose of the new facilities for children, and rewards a closer understanding of the building.

The images on the following page illustrate the materials palettes which characterise the local context, including a number of recent high-profile schools development.



ELEVATIONAL PRECEDENTS

6.00 Design Proposals



IMMEDIATE CONTEXT

LOCAL TEXTURES

BARNSELY SCHOOLS



OUTWOOD ACADEMY SHAFTON



KIRK BALK COMMUNITY COLLEGE



DARTON COLLEGE



HOLY TRINITY



6.00 Design Proposals

6.05 Building Materials & Construction (cont.)

The imagery below illustrates the current elevational proposals, with a strong masonry plinth underpinning a simple, elegant and well-ordered façade.



ELEVATIONAL STUDIES

6.00 Design Proposals

6.06 Aerial Views and Visualisations

AERIAL VIEWS



6.00 Design Proposals



AERIAL VIEW | APPROACH ALONG KERESFORTH ROAD

6.00 Design Proposals



AERIAL VIEW | SPORTS PITCHES

6.00 Design Proposals



AERIAL VIEW | EXTERNAL SOCIAL AREAS

6.00 Design Proposals



AERIAL VIEW | NORTHERN LANDSCAPING & WILDLIFE AREAS

6.00 Design Proposals



AERIAL VIEW | PUBLIC ENTRANCE PLAZA

6.00 Design Proposals



APPROACH ALONG KERESFORTH ROAD

6.00 Design Proposals



PUBLIC ENTRANCE PLAZA

6.00 Design Proposals



PUBLIC APPROACH



TRINITY ACADEMY ST EDWARD'S, BARNSELEY
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6.00 Design Proposals



PRINCIPAL ENTRANCE

6.00 Design Proposals



PUPIL ENTRANCE

6.00 Design Proposals



DINING ENTRANCE

Trinity Academy St Edward's | 7.00 Structural & Civil Engineering



TRINITY ACADEMY ST EDWARD'S, BARNSELY
DESIGN & ACCESS STATEMENT | P3 | NOVEMBER 2021



7.00 Structural & Civil Engineering

7.01 Ground Conditions & Contamination

The site remained undeveloped until the medical centre was constructed circa 1978. Prior to the development, the site comprised arable farmland. Within the surrounding area, industrial land uses including foundries, works, mills, fire station and quarrying activities are recorded.

GROUND CONDITIONS:

Made Ground: Unproductive Stratum – a large section of the POS is indicated on public records to comprise Made Ground, described as topsoil over colliery waste, or soft brown clay with fragments of brick, concrete and pottery. From 0.18m thickness and proved to a max depth of 3.1m bgl (full depth not encountered).

Bedrock: (Pennine Middle Coal Measures Formation): Secondary A Aquifer – across the whole site identified at depths between 0.18m and 3.2m bgl, proved to 24.8m bgl (interbedded sandstone and siltstone with bands of soft mudstone – extremely to very weak highly weathered sandstone and extremely weak highly weathered siltstone).

Geological Faults: BGS mapping identifies a fault series within the underlying bedrock associated with coal seams, with geological faults running broadly north-east to south-west within and surrounding the site boundary. A conjectured geological fault crosses the northern area of the site (trending from north east to south west and downthrowing to the south); no structures are proposed in this site area.

Mining: The site is within a Coal Authority (CA) reporting area, with the northernmost boundary and southern half of the site identified as a 'Development High Risk' area by the Coal Authority.

The ground investigation confirmed the presence of the Barnsley Coal Seam with intact and mine working identify on-site. Additional investigation is recommended to confirm and inform the proposed void grouting procedure.

SOIL CONTAMINATION:

No olfactory evidence of contamination was observed. Visual evidence of contamination of ash was observed within the topsoil of some Trial Pits. This could potentially be the source of the exceedances recorded. No asbestos was recorded in the Made Ground samples subject to testing.

Appropriate cover system should be installed in soft landscaping areas to break the contamination receptor linkage. Material/topsoil imported to Site should be certified suitable for use prior to importation and use onsite.

GROUND GAS:

Considered by Watermans to be a high risk prior to monitoring. Subsequent monitoring works have reported a ground gas characteristic situation 1, with no visual or olfactory evidence of hydrocarbon contamination in the soils or groundwater

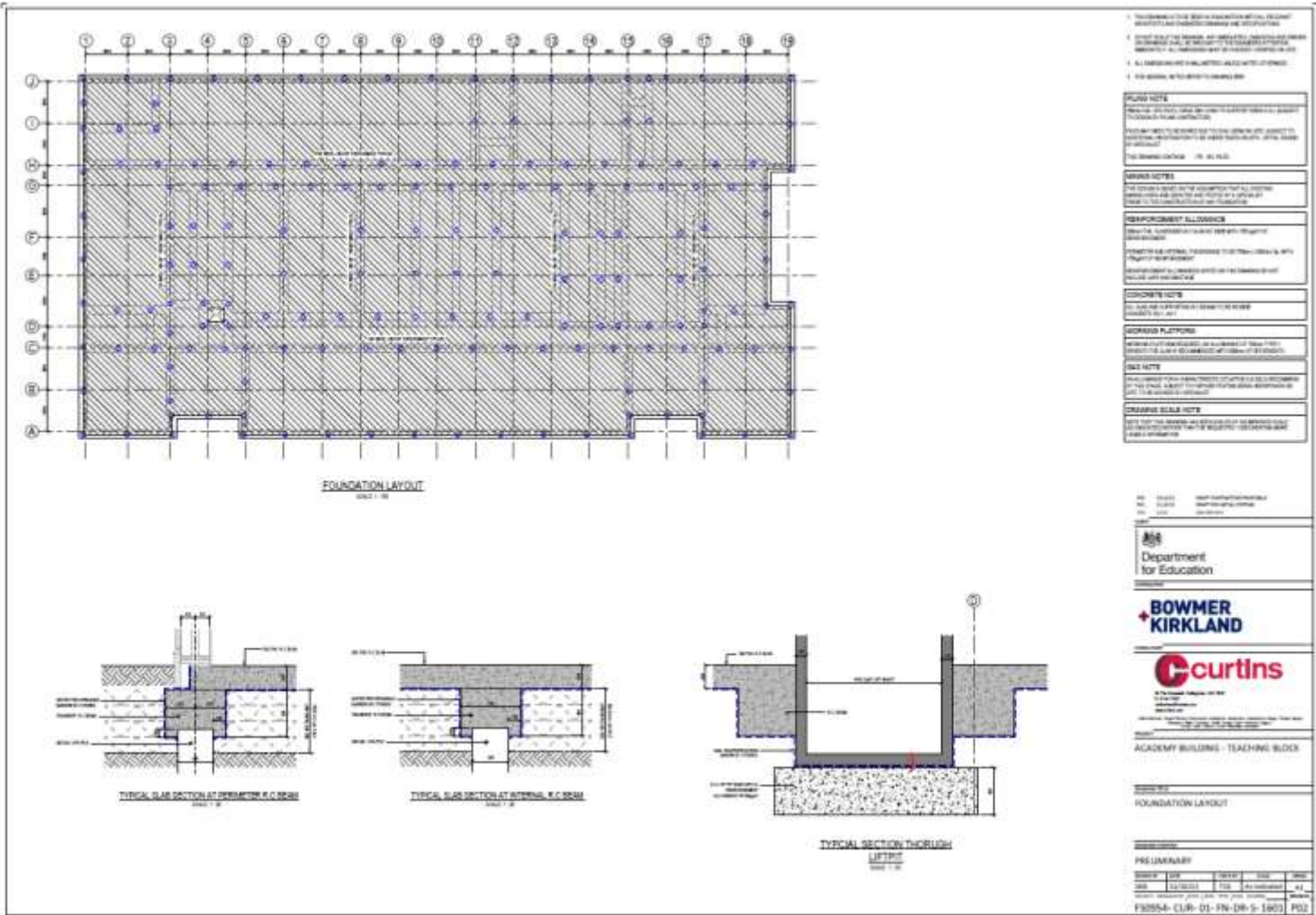
7.00 Structural & Civil Engineering

7.02 Structural Design Philosophy

SUBSTRUCTURE

The ground floor platform will be designed as a monolithic reinforced concrete piled slab to support applied vertical and horizontal loading from the superstructure. The slab will be designed as suspended using integral reinforced concrete slab and beam elements to span between piles.

The piles will be 450mm diameter concrete piles which will transfer vertical and horizontal loading from the raft generally into the underlying solid geology. Pile design will be by specialist subcontractor.



FOUNDATION LAYOUT

7.00 Structural & Civil Engineering

7.02 Structural Design Philosophy (cont.)

SUPERSTRUCTURE: OFF-SITE STRATEGY

Innovaré is an offsite construction specialist, focused on optimising the level of pre-manufacture to simplify and de-risk the onsite build process. Delivering large format panels and components out of a new 64,000 sqft UK production facility located Coventry, Innovaré has been providing a full structural chain-of-custody from design concept through to onsite installation for over ten years. The Innovaré system provides a highly insulated and flexible structural fabric that meets the architectural and site specific constraints, whilst simplifying the interfaces with other trades to improve the overall process.

The key structural elements of the proposed development are timber frame with external iFAST wall panels and engineered timber roof and precast hollow core concrete floor slabs, supported by steel and glulam beams and columns:

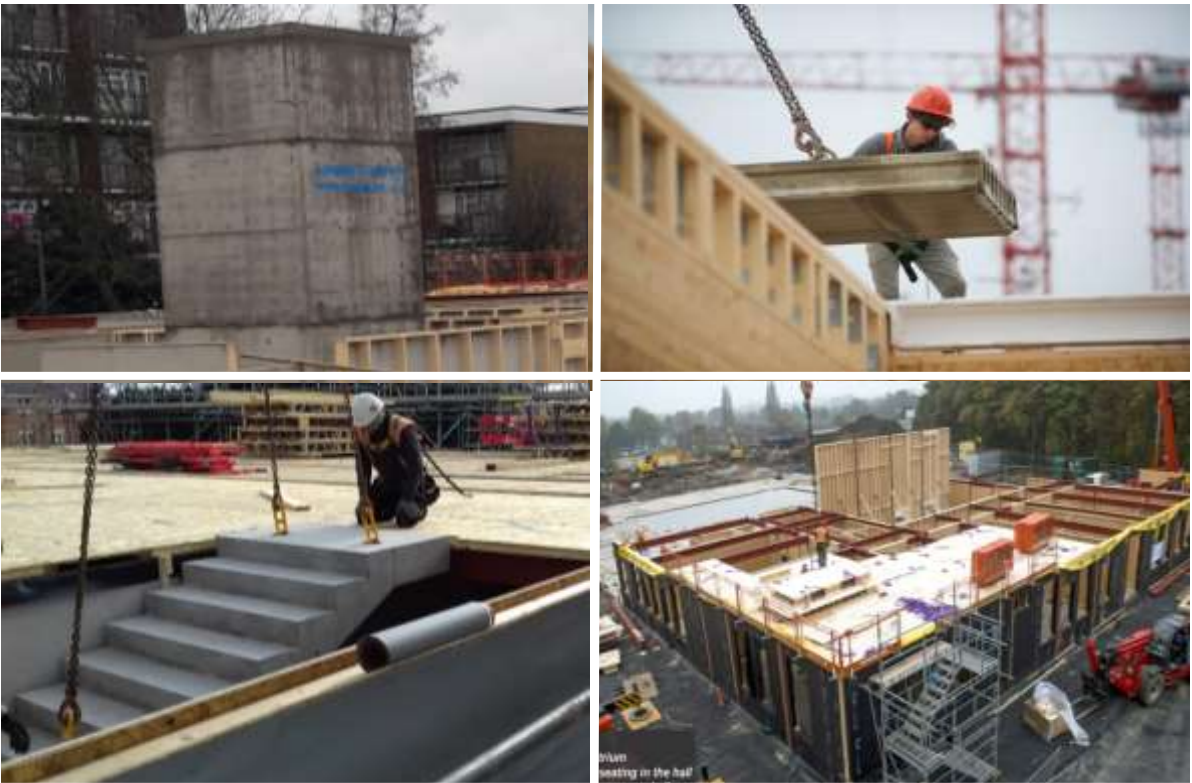


INNOVARE UK MANUFACTURING FACILITY

External walls:	Insulated timber cassette structural iFAST panels
Internal walls:	Timber stud (sheathed as required for structural action)
Roof:	Engineered timber cassettes
Upper Floors:	Precast hollow core concrete slabs
Structural members:	Steel and glulam beams and columns

Innovaré has focused on adapting the structural approach to optimise the key environmental aspects of the building design, in particular:

- Increasing sustainability of the estate through a Fabric First approach:
The Fabric First approach combined with offsite manufacture puts sustainability into the heart of the process.



INNOVARE HYBRID STRUCTURES – TIMBER & CONCRETE

7.00 Structural & Civil Engineering

7.02 Structural Design Philosophy (cont.)

- **Reduced environmental impact through sustainable sourcing and waste management:**

The carefully controlled design process minimises waste on every project. Offcuts are reused wherever possible and all elements are 100% recyclable. Innovaré aims to procure all materials used on projects with a positive environmental, social and economic impact. Materials are sustainably sourced and manufactured under the international chain of custody schemes PEFC™ and FSC. Formal FSC Chain of Custody documentation is provided to prove the point of origin of our sustainably sourced timber. Less waste is generated compared with traditional construction methods.

- **Improved local economic impact by balancing offsite with support for local supply-chain:**

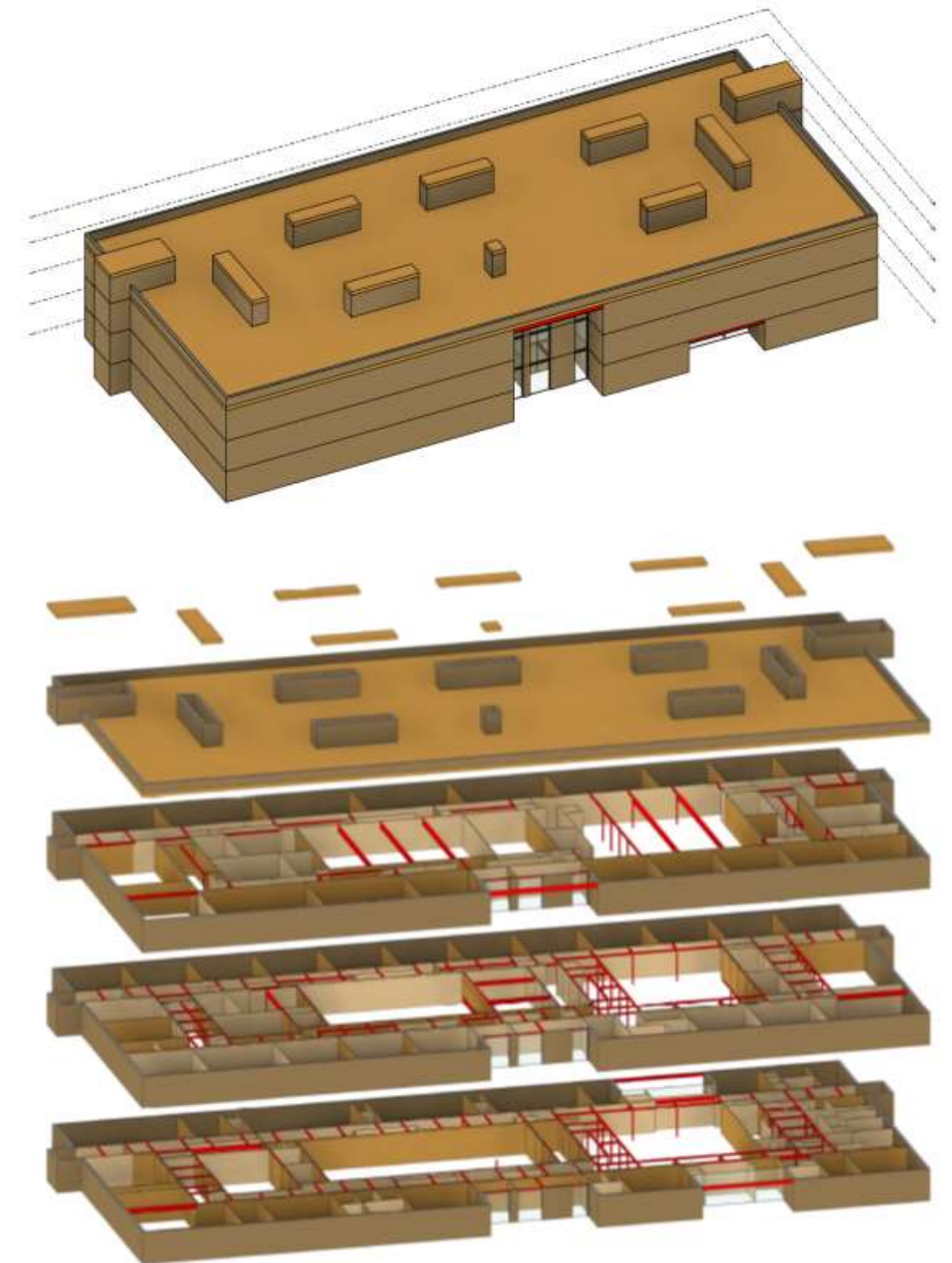
Local employment and skills remains a key economic driver and the benefits of increasing the level of offsite need to be balanced against the local economic impact. Flexibility in the level of pre-manufacture enables the benefits of offsite to be realised without negatively impacting the local economy.

- **Construction phase safety improved through fewer trades and reduced deliveries:**

The offsite panelised construction methods provides the most efficient means of transporting an offsite solution to site. As fewer deliveries are required, the safety and environmental impacts are reduced, along with reducing the associated noise and vibrations. With elements pre-manufactured offsite, less people are required onsite, significantly reducing the onsite Accident Frequency Rate (AFR).

- **During use disruption reduced through adaptability of structure and quality of build:**

The flexible structural grid ensures a range of future modifications are possible, with simple structural interfaces that enable future adaptations with limited disruption. The building superstructure is fabricated in controlled conditions with greater accuracy and quality control, fully backed by 3rd party accreditation for a 60 year design life through British Board of Agreement (BBA) certification with systems independently verified to ISO:9000.



INNOVARE DESIGN MODEL | TYPICAL SCHOOL PROJECT

7.00 Structural & Civil Engineering

7.03 Flood Risk Assessment

The Site is located in Flood Zone 1, denoting a low risk of flooding from tidal/fluvial sources. The Site is also at low risk of flooding from sewer, groundwater and artificial sources.

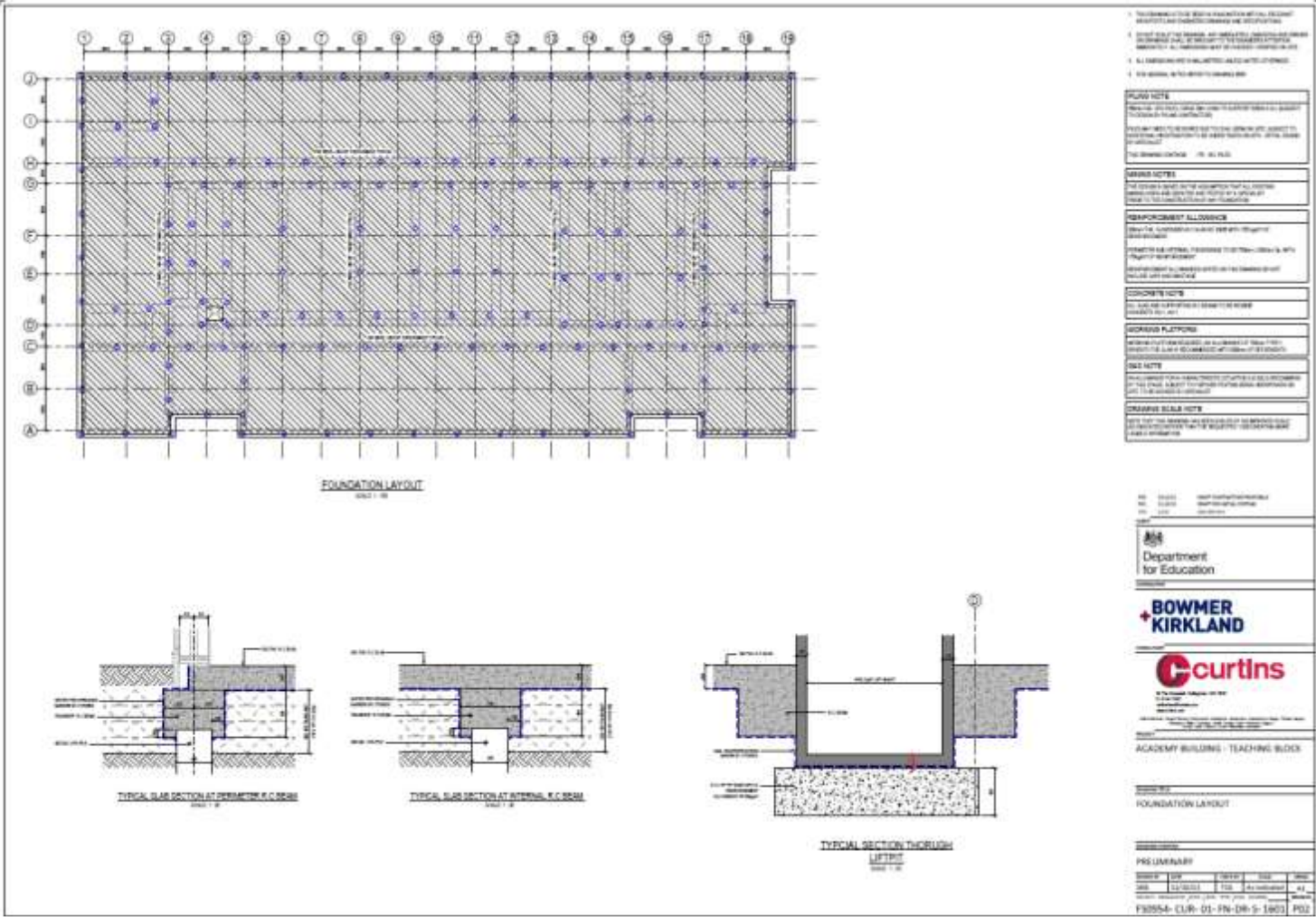
7.04 Surface Water Drainage Strategy

The following Sustainable Drainage Systems (SuDS) have been proposed on the scheme to provide water quality treatment suitable for the pollutant potential and environmental sensitivity, following the principles of a quality management train:

- Swales
- Filter drains
- Rain Gardens with subbase filter medium
- Attenuation Pond
- Attenuation Tanks

Level of treatment for water quality is subject to agreement with the LLFA.

The surface water system has been designed to accommodate the 1 in 100 year plus 30% allowance for climate change storm event with sensitivity check up to 40%. The drainage has been designed to accommodate all flow during the 1 in 30 year storm event below ground.



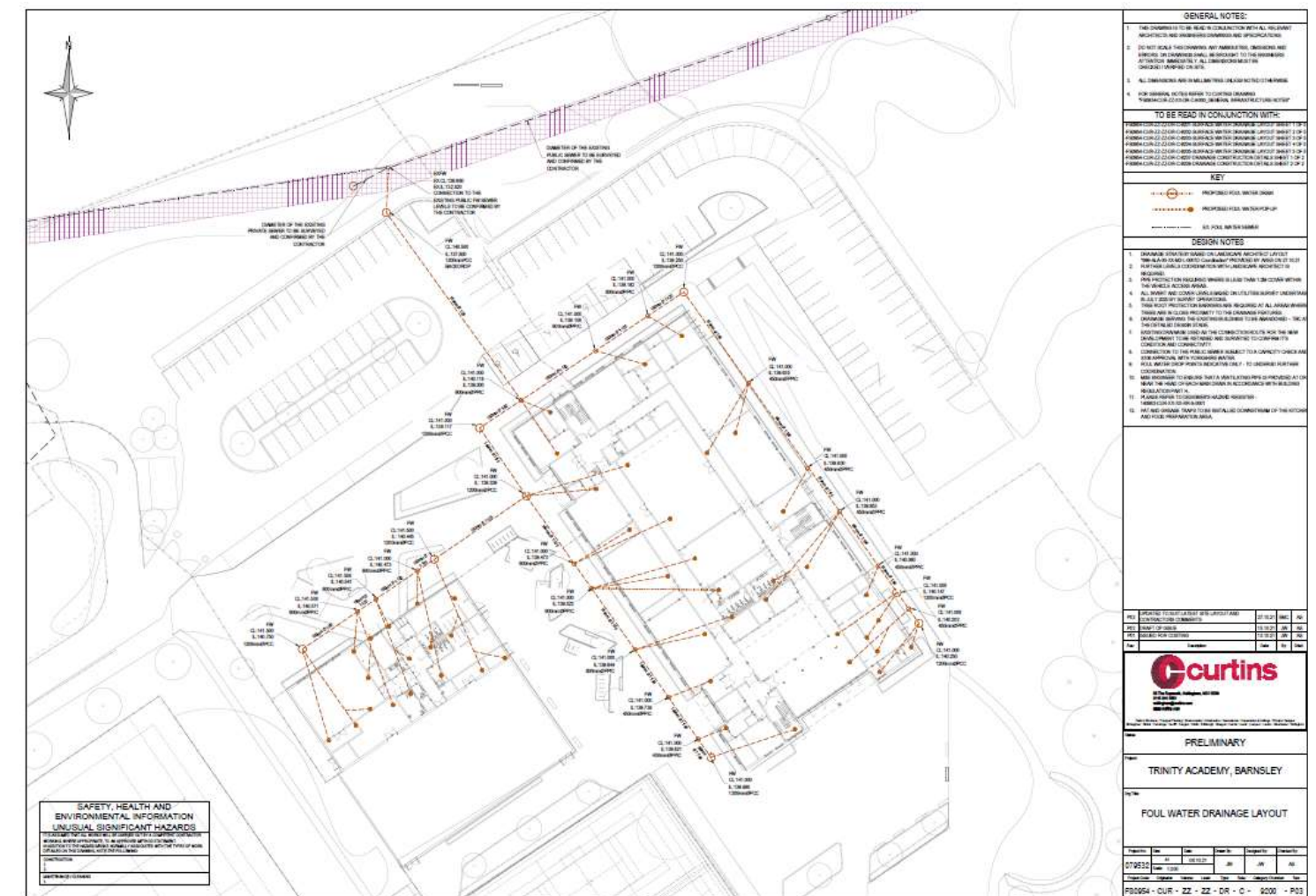
FOUNDATION LAYOUT

7.00 Structural & Civil Engineering

7.05 Foul Drainage Strategy

The foul water network will be a gravity fed system, connecting to the existing public Yorkshire Water sewer located to the North of the site. A pre-development enquiry has been sent to Yorkshire Water, in relation the proposed sewer connection.

The construction of the direct outfall connections will be subject to S106 approval with Yorkshire Water.



FOUL WATER LAYOUT

Trinity Academy St Edward's | 8.00 Sustainability & Building Services



TRINITY ACADEMY ST EDWARD'S, BARNSELY
DESIGN & ACCESS STATEMENT | P3 | NOVEMBER 2021



8.00 Sustainability & Building Services

8.01 Policy Requirements

A summary of how the related planning policies have been satisfied is detailed below. Please refer to the Energy & Sustainability Statement ref: S0954-RPS-ZZ-XX-RP-N-0013-S2-P01 issued as part of this planning application for further details.

The Sustainable Development Validation Checklist requires that all non-residential development will be expected to meet a minimum standard of BREEAM ‘Very Good’ (or any future national equivalent). A pre-assessment has been undertaken and a ‘Very Good’ rating can be achieved.

Policy RE1 covers Low Carbon and Renewable Energy. This requires all developments to “seek to incorporate initially appropriate design measures, and thereafter decentralised, renewable or low carbon energy sources...carbon dioxide emissions should at least achieve the appropriate carbon compliance targets as defined in the Building Regulations”. This design approach has been followed and the building will be fully in compliance with Building Regulations AD Part L (2013). Initial thermal modelling has been undertaken and the image on the right shows the BRUKL Output Document and draft EPC rating. In order to achieve compliance at this stage, a small photovoltaic panel installation yielding 8,625kWh/yr (circa. 60m²) has been included. The requirement for this will be reviewed as the design is developed.

With regard to Electric Vehicle Charging Point (EVCP) requirements. The planning policy requirement is for 10% of all parking spaces to be fitted with a charging point. Based on the current carparking layout this equates to xx ECVP’s. There is no minimum charging capacity specification stated in the policy, therefore, charging points will be type 2 Mennekes IEC 62196 AC outlets within the range 3-6KW for slow-charging outlets.

BRUKL Output Document

HM Government

Compliance with England Building Regulations Part L 2013

Project name

Trinity Academy St Edwards

As designed

Date: Sun Oct 24 12:11:16 2021

Administrative information

Building Details

Address: Trinity Academy St Edwards, Barnsley.

Certification tool

Calculation engine: Apache

Calculation engine version: 7.0.13

Interface to calculation engine: IES Virtual Environment

Interface to calculation engine version: 7.0.13

BRUKL compliance check version: v5.6.b.0

Certifier details

Name: Paul Welsh

Telephone number: 07595 218578

Address: 26 Sandleigh, Chester, CH2 3QP

Criterion 1: The calculated CO₂ emission rate for the building must not exceed the target

CO ₂ emission rate from the notional building, kgCO ₂ /m ² .annum	15.4
Target CO ₂ emission rate (TER), kgCO ₂ /m ² .annum	15.4
Building CO ₂ emission rate (BER), kgCO ₂ /m ² .annum	15.3
Are emissions from the building less than or equal to the target?	BER <= TER
Are as built details the same as used in the BER calculations?	Separate submission

Criterion 2: The performance of the building fabric and fixed building services should achieve reasonable overall standards of energy efficiency

Values which do not achieve the standards in the Non-Domestic Building Services Compliance Guide and Part L are displayed in red.

Element	U _{Limit}	U _{Calc}	U _{Calc}	Surface where the maximum value occurs*
Wall**	0.35	0.21	0.21	00000000:Surf[15]
Floor	0.25	0.25	0.25	00000000:Surf[0]
Roof	0.25	0.16	0.16	00000003:Surf[1]
Windows***, roof windows, and rooflights	2.2	1.22	1.25	0000000B:Surf[8]
Personnel doors	2.2	2.2	2.2	00000020:Surf[1]
Vehicle access & similar large doors	1.5	-	-	No Vehicle access doors in building
High usage entrance doors	3.5	-	-	No High usage entrance doors in building

U_{Limit} = Limiting area-weighted average U-values [W/(m²K)]
U_{Calc} = Calculated area-weighted average U-values [W/(m²K)]
U_{Calc} = Calculated maximum individual element U-values [W/(m²K)]
* There might be more than one surface where the maximum U-value occurs.
** Automatic U-value check by the tool does not apply to curtain walls whose limiting standard is similar to that for windows.
*** Display windows and similar glazing are excluded from the U-value check.
N.B.: Neither roof ventilators (inc. smoke vents) nor swimming pool basins are modelled or checked against the limiting standards by the tool.

Air Permeability	Worst acceptable standard	This building
m³/(h.m²) at 50 Pa	10	5



Energy Performance Certificate

HM Government

Non-Domestic Building

Trinity Academy St Edwards

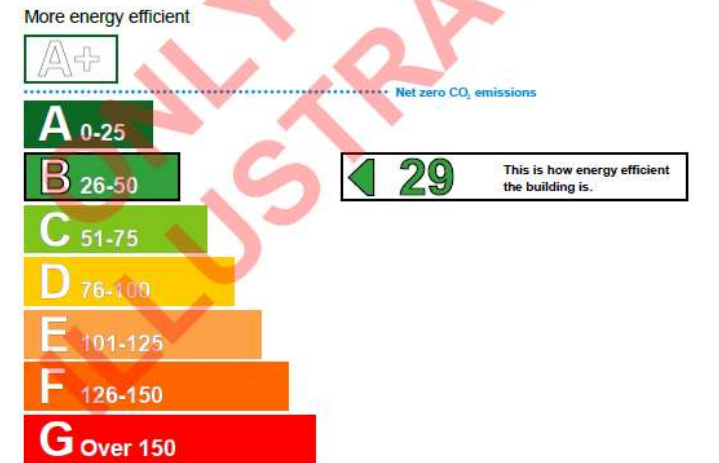
Barnsley

Certificate Reference Number:

8748-7318-1505-3478-0494

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information in the guidance document *Energy Performance Certificates for the construction, sale and let of non-dwellings* available on the Government's website at www.gov.uk/government/collections/energy-performance-certificates.

Energy Performance Asset Rating



Technical information	Benchmarks
Main heating fuel: Grid Supplied Electricity	Buildings similar to this one could have ratings as follows:
Building environment: Heating and Mechanical Ventilation	30 If newly built
Total useful floor area (m²): 6899.240	79 If typical of the existing stock
Building complexity: Level 5	
Building emission rate (kgCO ₂ /m² per year): 15.33	
Primary energy use (kWh/m² per year): 93.85	



BRUKL Output, Draft EPC, Example PV Array and EVCP Post

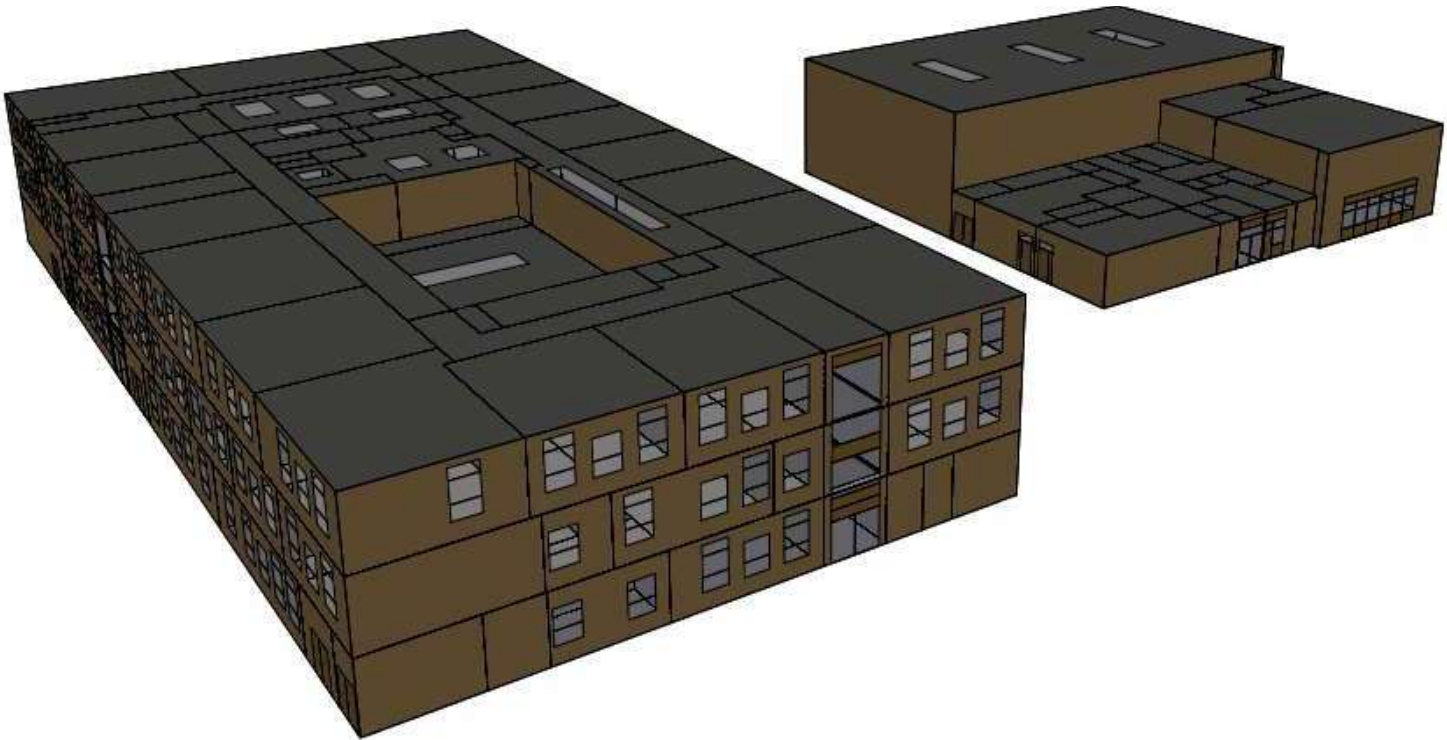
8.00 Sustainability & Building Services

8.01 Sustainability & Low Energy Strategy

Some of the key elements of the low-energy credentials of the design have been presented in the list below:

- LED lighting reducing lighting energy consumption by circa 40%
- Hybrid ventilation with heat recovery removes heat from extract air to warm incoming air ensuring fresh air without cold draughts even in winter
- Robust ventilation strategy to overcome any temporary acoustic site constraints
- Reduced hot water demand by 40% by water efficient fittings
- Fabric - First strategy - Significant betterment of Part L insulation & airtightness avoids the need for renewable energy technologies
- Exposed thermal mass & night time purge provides free cooling during warmer months
- Gas-fired condensing boilers.
- Common heating system used between new buildings to future proof the site for an external source of heat e.g. a district heating network.
- The design would satisfy overheating criteria even if scheme was in central London
- Concept energy consumption 9.6% below DfE OS target limits – see table below

	Space Heating	Hot Water	Small Power	Lighting	Fans & Pumps	Cooling	Lifts	Building Related	Total
OS Energy Target Limit - Electrical Equivalent (kWh/m²)	20	4	25	13	7	1	1	4	75
Energy Concept Model - Electrical Equivalent (kWh/m²)	12.4	6.8*	25	10.4	7.4	0.9	1	4	67.8



Typical Classroom Proposal & TASE Thermal Model Used for Compliance Modelling

8.00 Sustainability & Building Services

8.02 Incoming Services & Utilities

Electricity: The existing electricity supplies on site are insufficient to serve the proposed new buildings. Subsequently a new substation shall be provided.

Telecommunications: The existing telecommunications supplies on site will be disconnected and new services will be installed to serve the new buildings.

Natural Gas: The existing site gas supplies on site are insufficient to serve the proposed new buildings. Subsequently a new gas supply with meter enclosure at the site boundary will be provided..

Potable Water: The existing water supplies on site will be isolate and a new potable mains cold water supply shall be provided to serve the new buildings.

Fire-fighting Water: The existing site is served by a number of existing fire hydrants. Further testing of capacity shall be conducted at the next stage but it is expected that the existing provision will be sufficient for the new scheme.

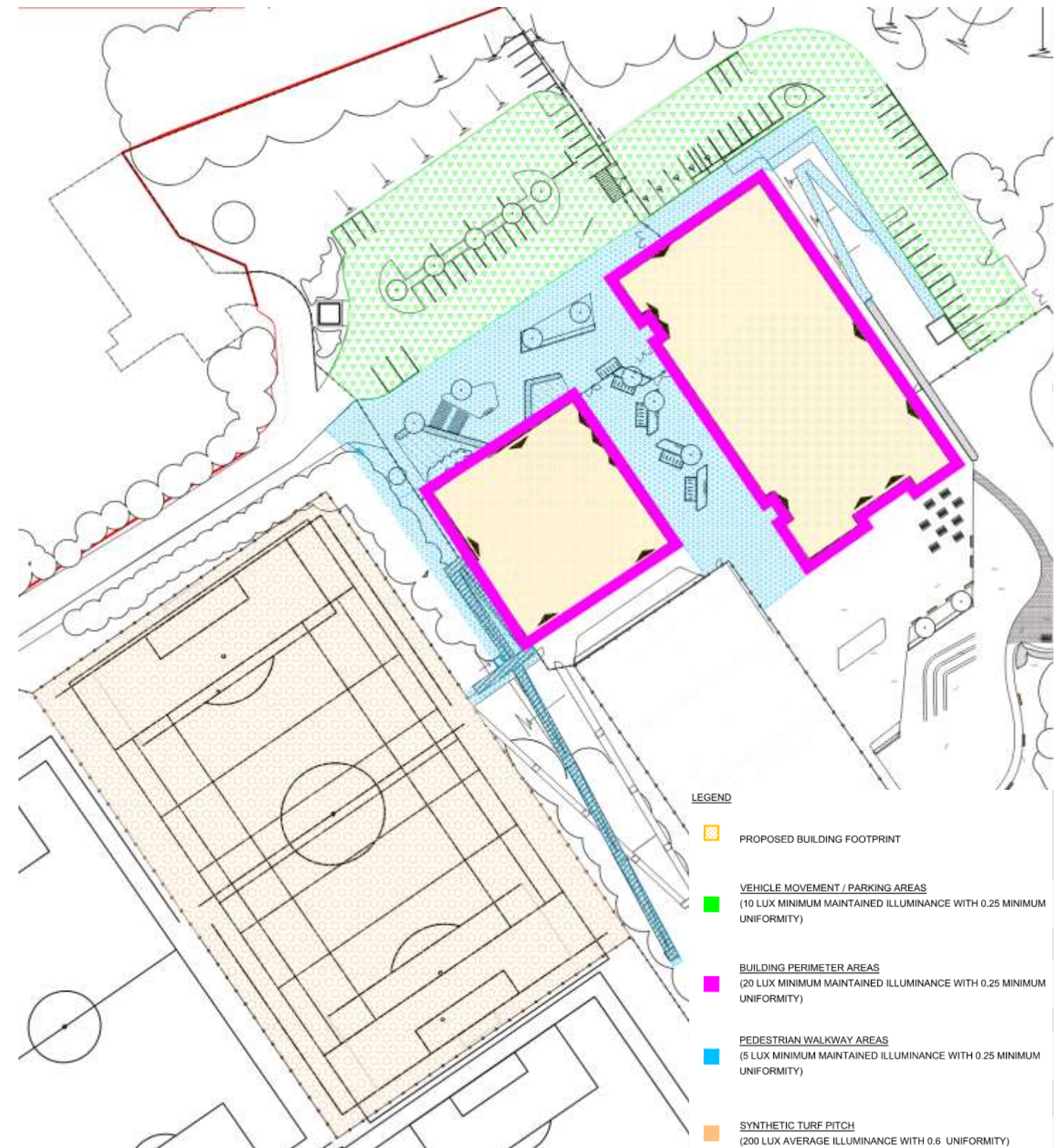


PROPOSED EXTERNAL SERVICES DRAWING

8.00 Sustainability & Building Services

8.03 External Lighting Strategy

- All external lighting will be provided in accordance with CIBSE Lighting Guide 5, BSEN 13201, BS 5489 and ILP GN01 – The Reduction of Obtrusive Light.
- External lighting shall be provided to proposed new walkways, roads and building entrances in accordance with LG5 and building control officer's requirements.
- The external lighting colour rendering, installation, efficacies and maintenance issues will all be considered as well as the luminaire positioning relative to each building. The external lighting installation shall have minimum lamp and gear efficacy of 80lm/W for colour rendering $Ra \leq 60$ and 70lm/W for light sources $Ra > 60$.
- Lighting columns shall be of the fixed planted type with lockable low-level access doors, allowing access to the cable terminations and local protective device.
- External luminaires shall be selected and located so as to avoid light pollution to the surrounding neighbourhood.
- All external lighting circuits shall be controlled by an arrangement of photocell, timer switch and manual override. This shall generally be achieved by contactors located adjacent to the local external lighting distribution board. The controls can be changed by the end user, but shall initially be set up to activate when dark, but switched off between the hours of 2300hrs and 0700.
- External lighting will utilise LED lamps. The selection of luminaires and lighting philosophy will be agreed with the Client and Design Team during the next stage.
- All external fittings selected will be vandal resistant or positioned to limit the opportunity for vandal damage.
- Particular attention shall be made to the illumination of the STP, to ensure overspill lighting is closely controlled to prevent nuisance to the nearby residential properties.



PROPOSED EXTERNAL LIGHTING DRAWING

8.00 Sustainability & Building Services

8.04 Heating & Hot Water Strategy

A new low temperature hot water heating (LTHW) installation shall be provided comprising gas fired condensing boiler plant as indicated on the mechanical schematic drawing. In accordance with the DfE's Output Specification Technical Annex 2F November 2020, the heating system shall be designed to a maximum mean LTHW flow temperature of 42°C. This is to allow for connections to a low carbon heat source in the future and make full use of the condensing mode of the boilers during part load conditions. The heating plant within the Main Block will also serve the separate Sports Block via buried heating mains to create a heat network on site.

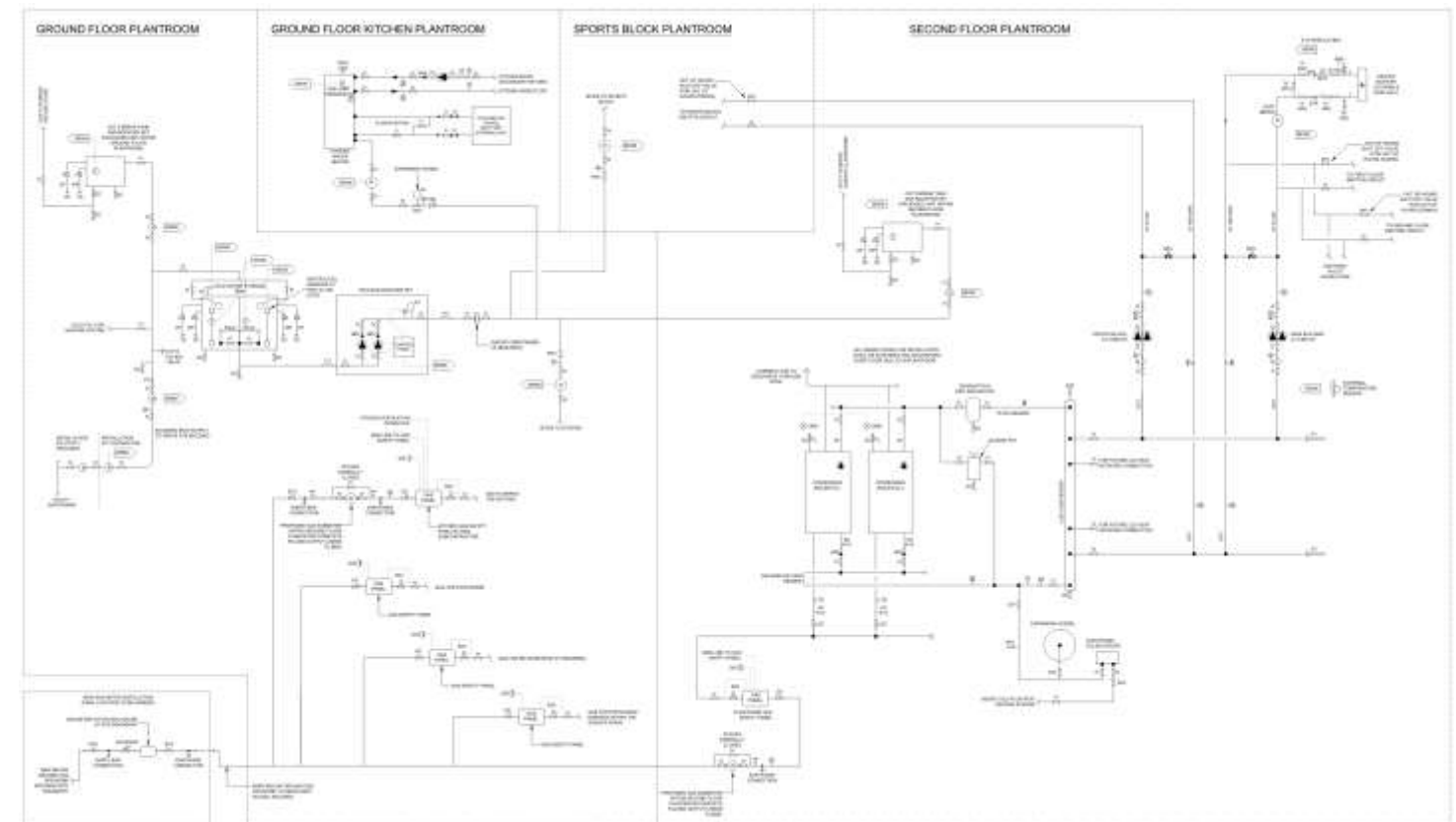
The heating plant shall be sized to have a minimum of two gas-fired boilers each sized at 66% of the peak boiler load to provide standby coverage in the event of a minor failure. The quantity and rating of boiler modules shall be reviewed as the design progresses and it may be more cost effective to provide three boilers at sized at 40% each or modular boilers sized to provide 100% capacity and N+1. The heating plant shall be located within the offsite manufactured plantroom podule and installed on the second floor.

The LTHW heating system shall comprise control facilities for optimum start. Pump sets shall be variable speed type and complete with integral speed controllers. Pump-sets shall be twin-head type to ensure operation in the event of a minor failure to the system. A water treatment regime shall be provided within the O&M manuals including a means of dosing the system.

Domestic hot water shall generally be generated by local 'point of use' electrical water heaters. This ensures that hot water is generated independently of the space heating system and avoids the heat loss from circulation systems which can cause overheating.

The domestic hot water to serve the Main Kitchen shall be generated by a standalone packaged Air Source Heat Pump (ASHP) unit with hot water calorifier. Hot water serving the Kitchen will be generated at 60°C and re-circulated to ensure a minimum return temperature of 55°C.

Hot water shall be provided to all wash hand basins in Toilets and sinks within Kitchens, Art Room, Food Room and Cleaners Rooms. All other sinks will be provided with cold water only.



MECHANICAL SCHEMATIC | GAS BOILERS AND ELECTRIC WATER HEATERS

8.00 Sustainability & Building Services

8.05 Ventilation Strategy

The image to the right shows the acoustic analysis undertaken for the site. The analysis highlighted that natural ventilation would not be suitable on the South East and South West elevations. On all other elevations natural ventilation can be utilised to supplement the heat recovery ventilation described below. The project proposes to utilise a hybrid ventilation strategy to maximise energy efficiency. The mechanical ventilation is designed with heat recovery to ensure cold air (Cold Draughts) are not introduced to the space and input air remains within 5°C of room temperature ensuring comfort within the space. The ventilation unit is intelligent enough to respond to room demand automatically for CO₂ and temperature and has a building physics strategy able to deliver a compliant summer, winter or midseason's space. The ventilation is controlled also by our wall mounted controller allowing CO₂ demand control, boost and temperature.

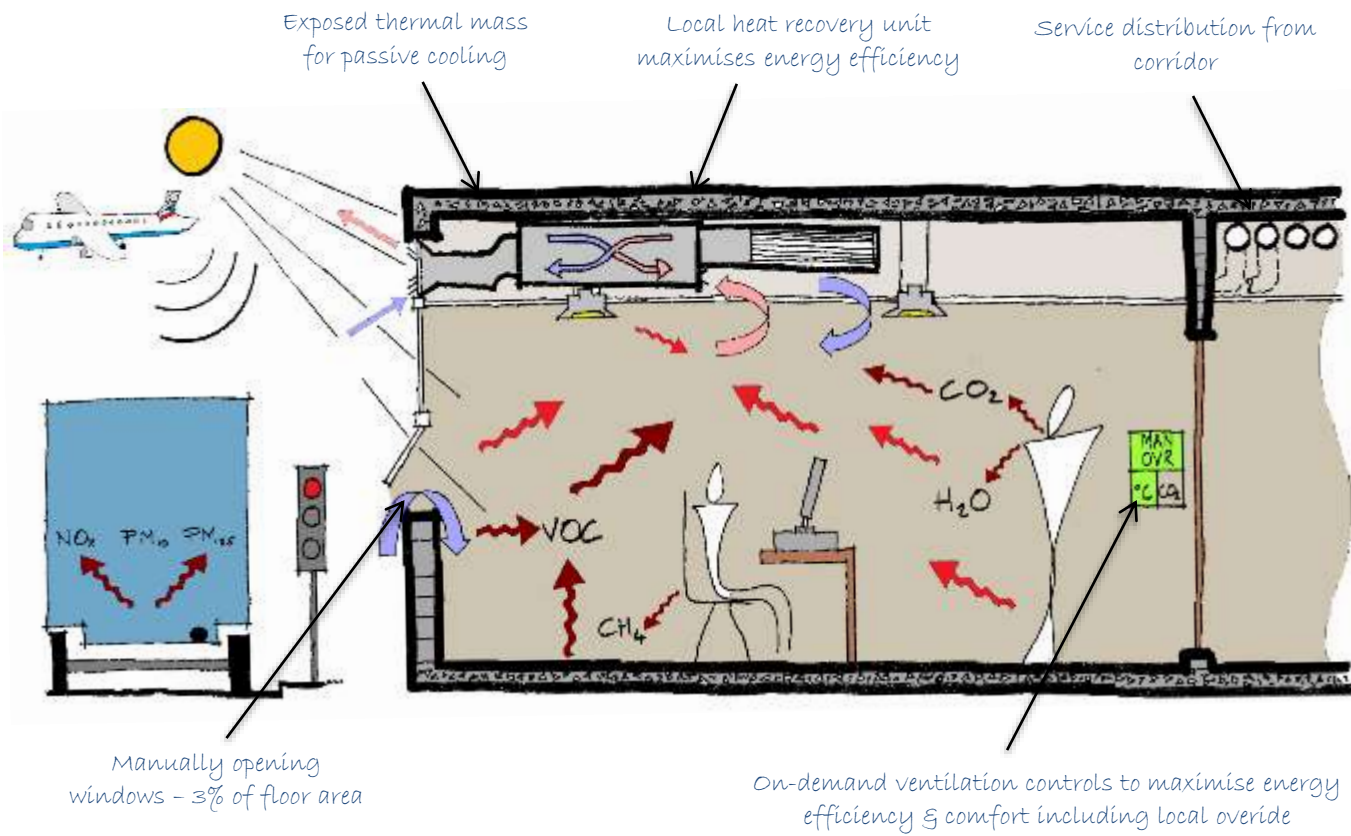
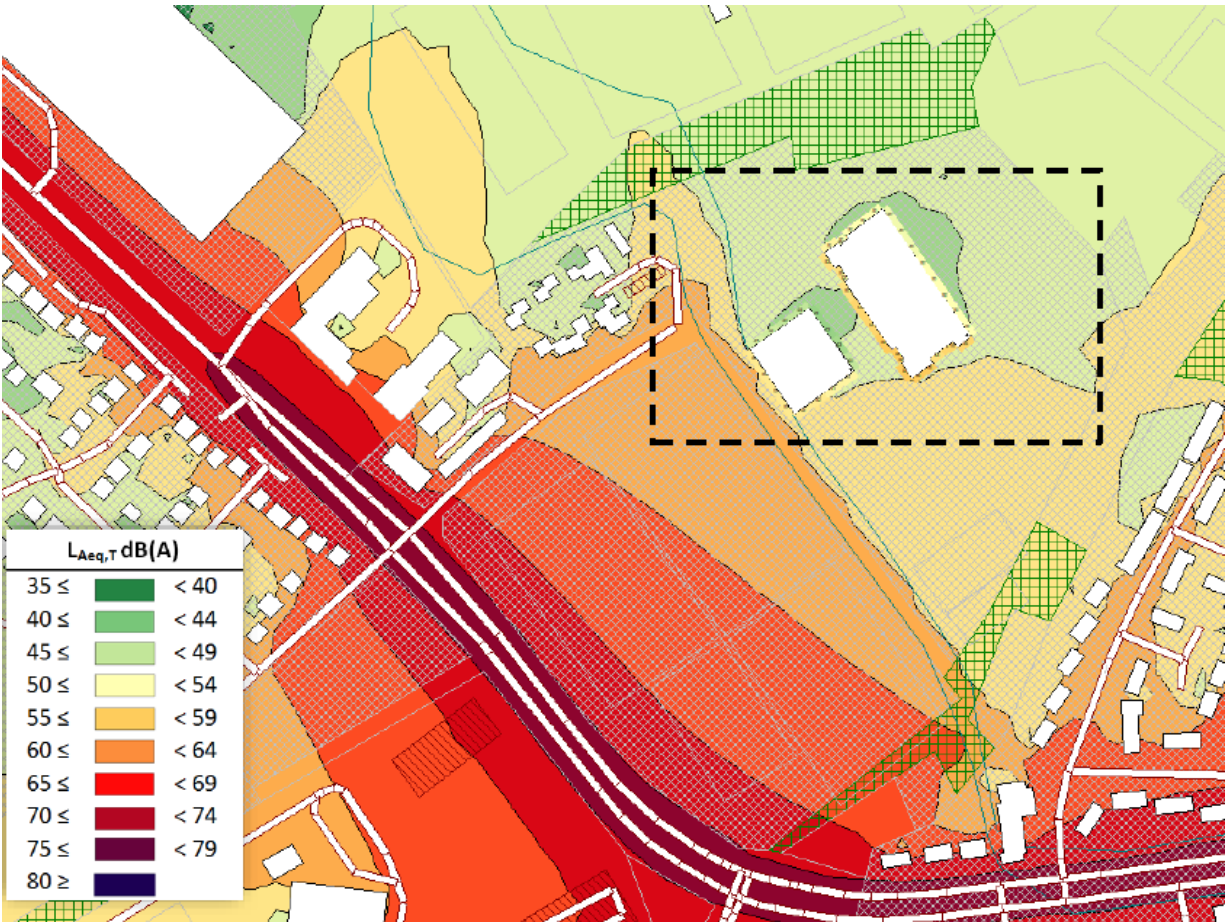
The heat recovery unit has been designed to cope with ventilation requirements without the requirement for the windows to be open, should the need arise, for example if the playing fields were being mown or children playing was causing a disturbance to occupants with windows open.

Controls: A local wall mounted controller in each classroom allows manual override control of each space with an option to boost ventilation or adjust temperature set points by +/-3°C for predefined periods.

Overheating Mitigation Measures: The proposed scheme has demonstrated compliance with the DfE overheating criteria using the TM52 methodology, the key elements to achieving this are listed below: -

Hybrid ventilation: The hybrid ventilation strategy has the additional benefit of increasing air movement during the summer months to supplement the natural ventilation openings in removing the heat gains. The hybrid ventilation also facilitates a secure means to 'night purge' without the need for opening windows which may otherwise present a security threat.

Thermal Mass: A building containing exposed thermal mass is able to absorb (or release) heat into the building fabric which helps to reduce the variation in internal temperature as conditions change. On a summer/spring evening, the space will be filled with cool night air which removes the heat built up in the building's exposed thermal mass thus 'charging' the fabric ahead of the next working day. The typical classroom contains exposed thermal mass in the form of blockwork walls to perimeter and concrete soffit.



VENTILATION STRATEGY AND SITE ACOUSTIC ANALYSIS FOR NATURAL VENTILATION

8.00 Sustainability & Building Services

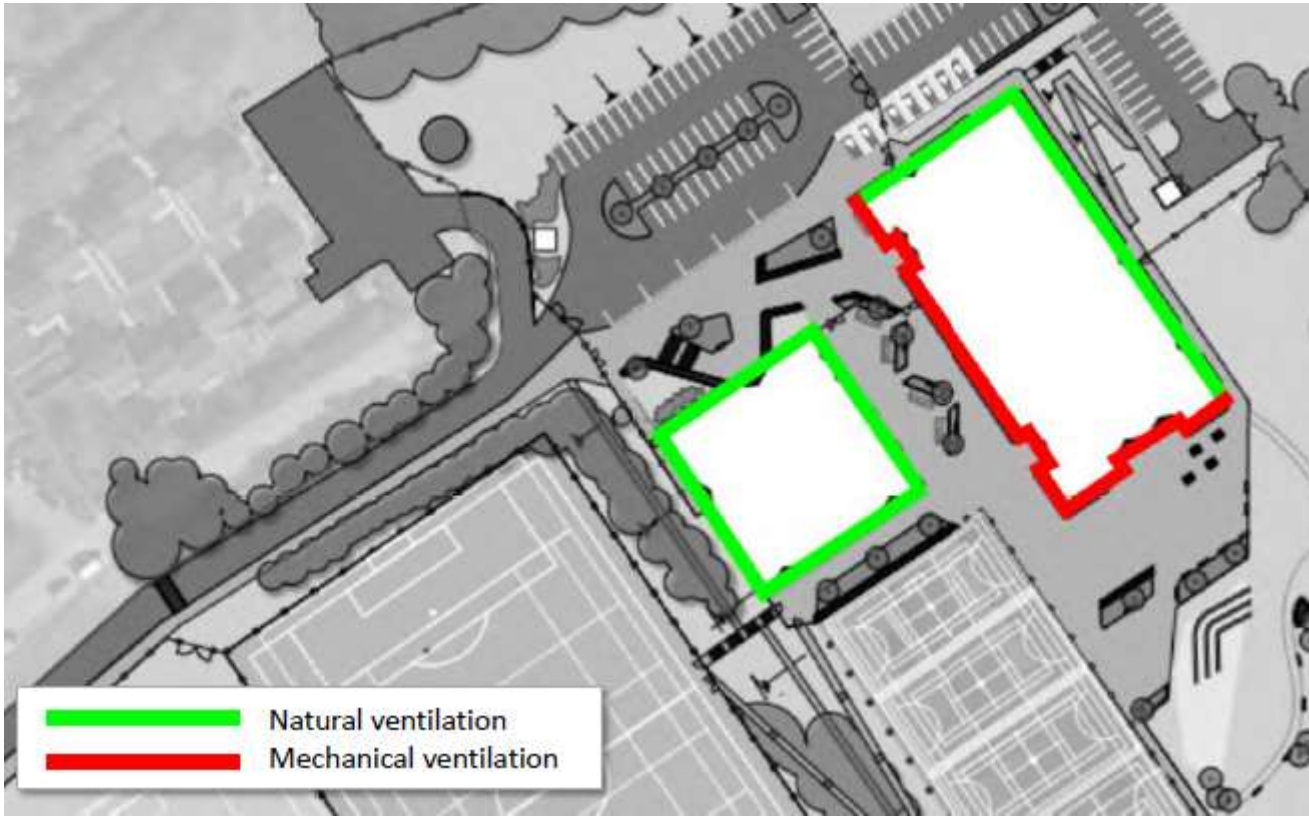
8.05 Acoustic Strategy & Plant Noise Reduction

Noise Break-in: The acoustic strategy follows Building Bulletin 93 criteria, which is the mandatory design guidance for schools, as referenced to in Building Regulations Part E. Façade noise level calculations show that natural ventilation is acceptable for all rooms within both blocks, based on 15 dB reduction for an elevation with an open window. All façades are expected to experience levels 50dB $L_{Aeq,T}$ or below due to being located relatively distant from any significant sources of noise. To ensure FOS compliance in relation to cold draughts criteria, it is understood that mechanical ventilation units will be installed to all teaching spaces regardless.

The mechanical ventilation systems will be adjusted to meet the BB93 requirements for services noise and provide the end users with the appropriate acoustic environment. It should be noted that openable windows will still be provided within mechanically ventilated areas in order to increase ventilation rates during the peak summertime conditions. This will provide occupants with the control to determine locally their preferred balance between thermal comfort and higher indoor ambient noise levels.

Plant Noise Reduction: It is important to see that noise generated by fixed services plant and other equipment does not cause an undue rise in noise levels either internally, within teaching spaces, or externally, at nearby residential dwellings. For internal noise levels, the baseline design includes the selection of equipment which are known to generate low levels of noise and should see compliance with the BB93 levels maintained. For external Levels, appropriate limits have been set for external noise impact based on a level 5dB below the typical background level ($L_{A90,T}$) measured at a position most representative of the nearest residential dwellings, in line with the local authority planning requirements. Atmosphere-side attenuation will be used to limit noise impact to within specified levels. These limits are as follows:

Period	Typical background sound level $L_{A90,T}$ - dB	Limiting plant Rating level $L_{A,T,r}$ - dB @ 1 m from affected façade
Daytime (07:00 -23:00)	40	35
Night-time (23:00-07:00)	39	34



Images of Site Noise Levels and Summary of Required Ventilation Strategy

8.00 Sustainability & Building Services

8.06 The RIBA 2030 Challenge

As signatories to the RIBA 2030 Challenge, CPMG Architects is committed to measuring our design proposals against the Challenge’s carbon reduction and wellbeing targets, and to working with our clients and engineering colleagues to achieve the best possible outcomes on all our projects.

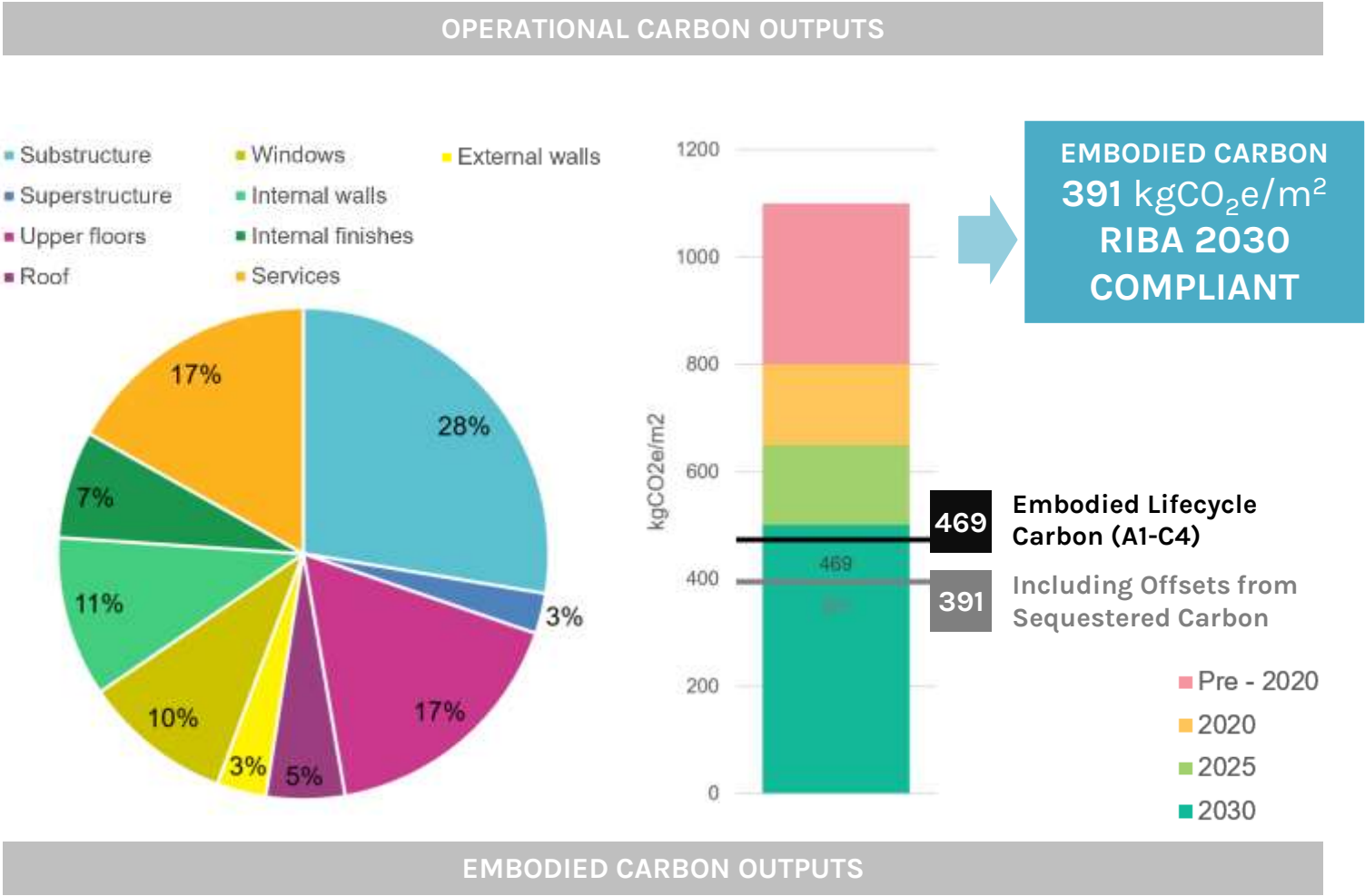
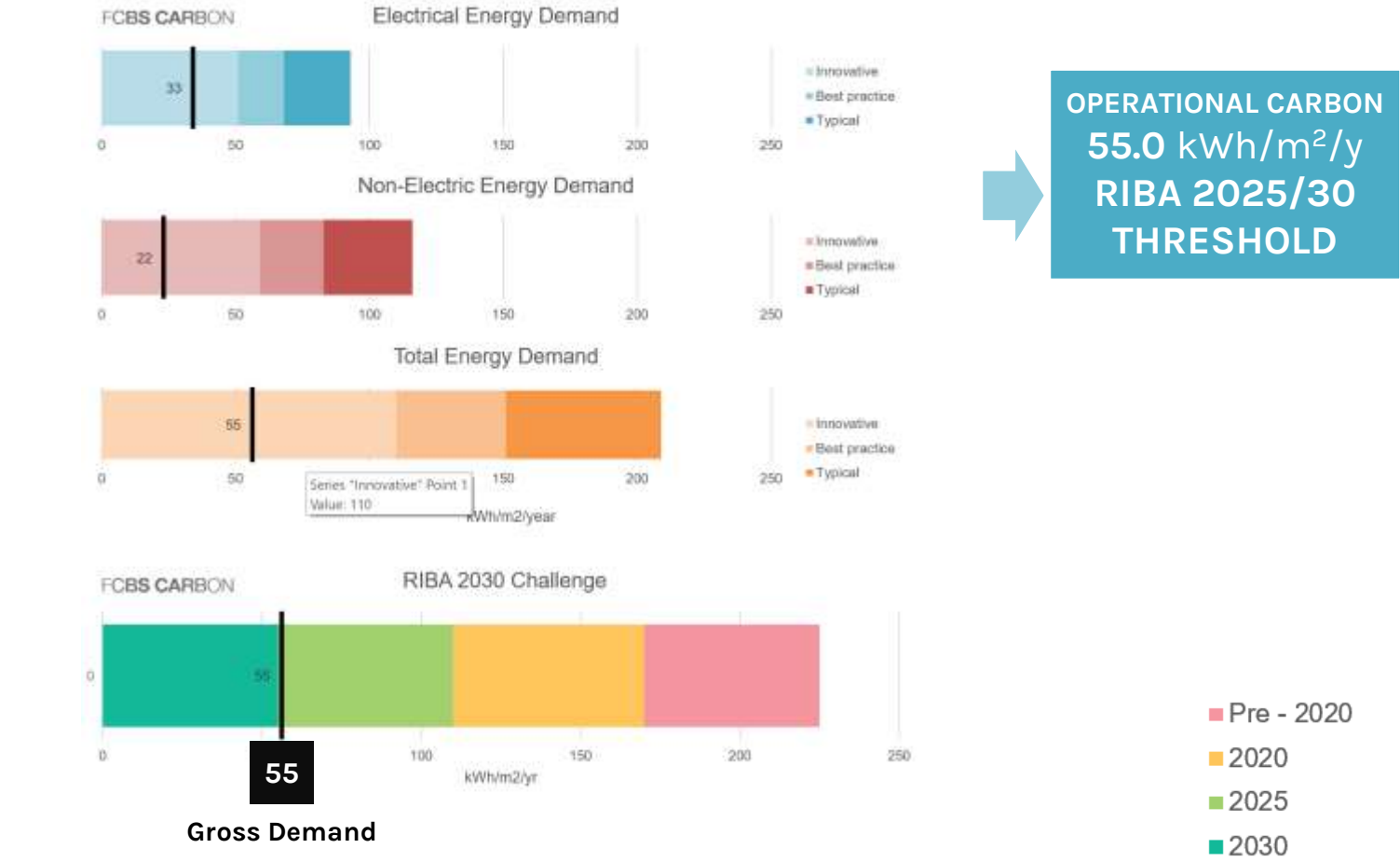
We believe the Trinity Academy St Edward’s project offers an excellent opportunity to illustrate progress against the 2030 targets for both embodied and operational energy. Our initial design proposals embed a set of carefully considered principles in order to support this ambition. We have undertaken an initial lifetime carbon assessment of the design proposals, using the FCBS Carbon Tool. This analysis confirms that the proposals are on target for delivering 2030 performance for both operational and embodied carbon. Please see the initial outputs from the analysis opposite, and summarised below.

Operational Carbon: The ratings for operational carbon are taken from the design stage BRUKL assessment. The design proposals currently achieve 55 kWh/m2/y, which is the threshold between the 2025 and 2030 targets. This is achieved without recourse to renewables, illustrating the inherent operational efficiency of the base design. The principal design strategies adopted are as follows:

- Fabric-first approach with careful balance of glazed areas
- Hybrid ventilation: natural summer vent / heat recovery winter vent
- Passive cooling via night-time purge
- Climate-based daylight approach, with daylight-linked LED lighting

Embodied Carbon: The ratings for embodied carbon meet the <500 kgCO2e/m2 2030 threshold, achieving 469 kgCO2e/m2. When including for the offsets from sequestered carbon in the timber elements, the proposals further undercut the threshold, achieving 391 kgCO2e/m2. This represents a significant 22% betterment of the formal 2030 target. The principal design strategies adopted are as follows:

- Timber cassette external walls, roof and internal partitions
- Substantial elimination of structural framing elements
- Reduction of waste by c. 80% off-site manufacture



Trinity Academy St Edward's | 9.00 Access Statement



TRINITY ACADEMY ST EDWARD'S, BARNSELY
DESIGN & ACCESS STATEMENT | P3 | NOVEMBER 2021



9.00 Access Statement

9.01 Access for All

The building proposals present a fully accessible facility over three storeys, minimising barriers both to access and to learning. The location on the site allows level access from the student pedestrian access and car park areas, and level thresholds at all entrances and exits will be incorporated as a matter of course. A 13 person capacity passenger lift is to be provided in the main school building to aide upper floor accessibility.

The internal arrangement is simple and legible; the plan provides a straightforward principal continuous circulation arrangement. This legibility is strengthened further by direct visual and physical connections to the external landscape, and internally between the key activity spaces, particularly across the open dining space which continues as a void through the full three stories.

9.02 Waste Minimisation, Recycling and Storage

Recycling areas will be incorporated both internally and externally. Waste will be collected and segregated in the building, and daily collections will be made to transport waste to the external waste and recycling store. The waster and recycling compound is located for easy access from the turning head in the western car parking area.



WESTERN CAR PARKING | TURNING HEAD & RECYCLING STORE

9.00 Access Statement

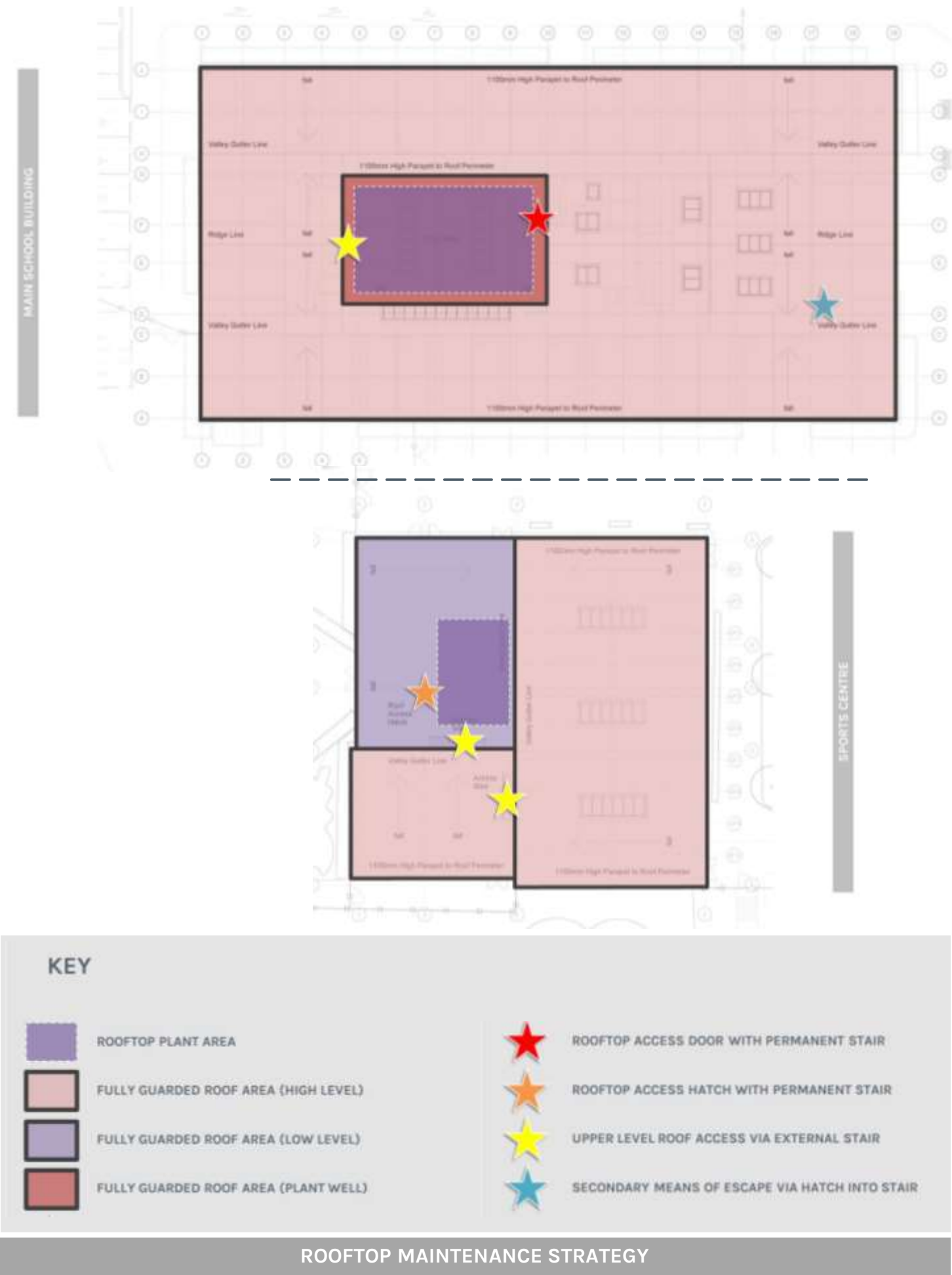
9.03 Maintenance Strategy

In accordance with the requirements of CDM legislation, due regard to the ongoing maintenance of the proposals has been made during the design process. This ensures that a simple and pragmatic approach is incorporated for construction access and ongoing maintenance.

PLANT AND INCOMING SERVICES: Dedicated plant rooms are provided at ground floor level within both the main school building and the sports centre for incoming services; these spaces all have direct access from external hardstanding areas. The main heating plant room is located at Level 02, with direct access from the circulation areas, in a location easily served by the lift for future replacement of parts.

ROOFTOP MAINTENANCE PROVISION: All roof areas are permanently guarded to avoid any reliance on fall arrest or restraint systems. The principal air handling plant is located externally within a sunken rooftop plantwell in the main school building.. This is accessed from Level 02, via a dedicated stair and doorway negotiating a small change in level of c. 1m. The plantwell is located roughly centrally within the footprint, and is enclosed by surrounding accommodation - this provides very effective screening of the plant from distant views. Wider roof access is provided from the plantwell via a permanent external stair up to the main roof level, where there is some further mechanical plant. A secondary means of escape from the main roof is included via an access hatch into the southerly stair core, with a telescopic ladder. The lowest area of sports centre roof is accessed from an internal companionway stair, via a roof hatch. Access to the upper level roofs is provided from here via a permanent external stair. No additional means of escape is required,

BUILDING FABRIC CLEANING AND MAINTENANCE: The proposals include a highly durable palette of materials, to minimise the need for maintenance. All cladding has a life expectancy of 40+ years to meet the DfE’s Output Specification, and is BBA Certified. All windows and curtain walling framing, are PPC aluminium. External window cleaning will generally be from ground level by pole-handled brushes. Areas of hard-standing have been designed in the landscape proposals to accommodate appropriate circulation areas. All distributed services in the building are easily accessed from general circulation areas; access doors are incorporated in the proposals.



9.00 Access Statement

9.04 Sanitary Provision

Sanitary provision has been developed in accordance with BS 6465-1:2006, which specifically covers the needs of secondary education facilities. These regulations impose a simple requirement of 1no. WC per 20 pupils (male and female) generally. Provision for staff is based upon DfE requirements.

PUPIL WCS (45no. TOTAL)	36no. distributed in central clusters
	6no. in sports changing
	1no. adjacent Sick Bay
	2no. designated from distributed AWCs
STAFF / VISITOR WCS: (8no. TOTAL)	6no. designated from distributed AWCs building
	2no. in SLT suite at Level 02
SHOWERS (SPORTS CENTRE):	Hygiene Room & separate Accessible Change
	2no. Staff showers / 10no. Pupil showers (5no. M / 5no. F)



SANITARY PROVISION STRATEGY

9.00 Access Statement

9.05 Fire Strategy & Emergency Services Access

Ashton Fire Consultancy has developed a detailed fire strategy in accordance with the recommendations of BS 9999, which is the most suitable standard for this building type. A risk profile of B (Awake & Unfamiliar) has been assigned to the community use areas, with A (Awake & familiar) to the remaining accommodation. As the top floor is <7.5m above ground level, there are no requirements for firefighting shafts in the building.

DESIGN OCCUPANCIES: In line with the DfE's objectives, the fire safety strategy has been developed for life safety. The building occupancies have been modelled using floor space factors provided by BS 9999 and the information provided in the Schedule of Accommodation.

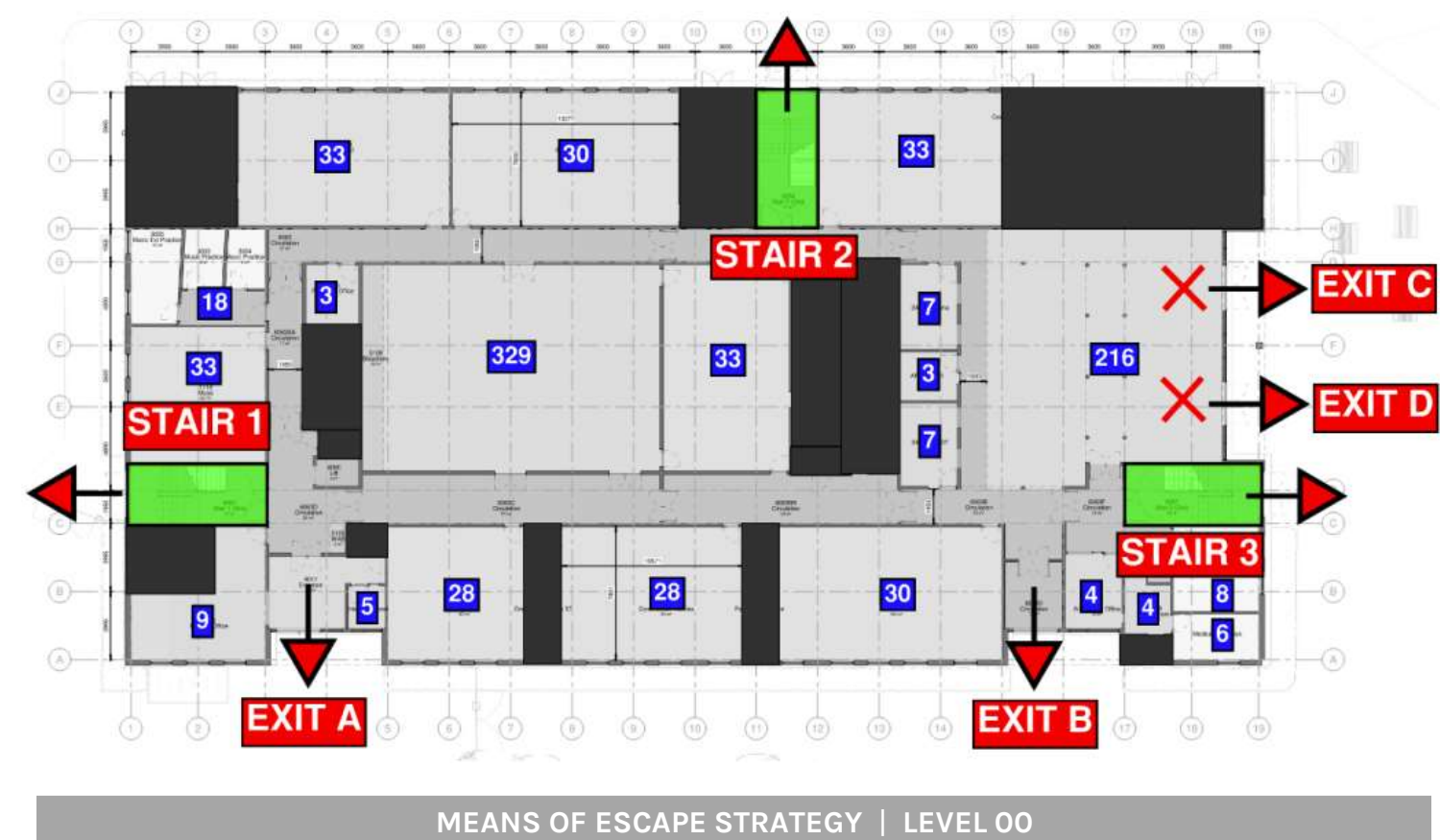
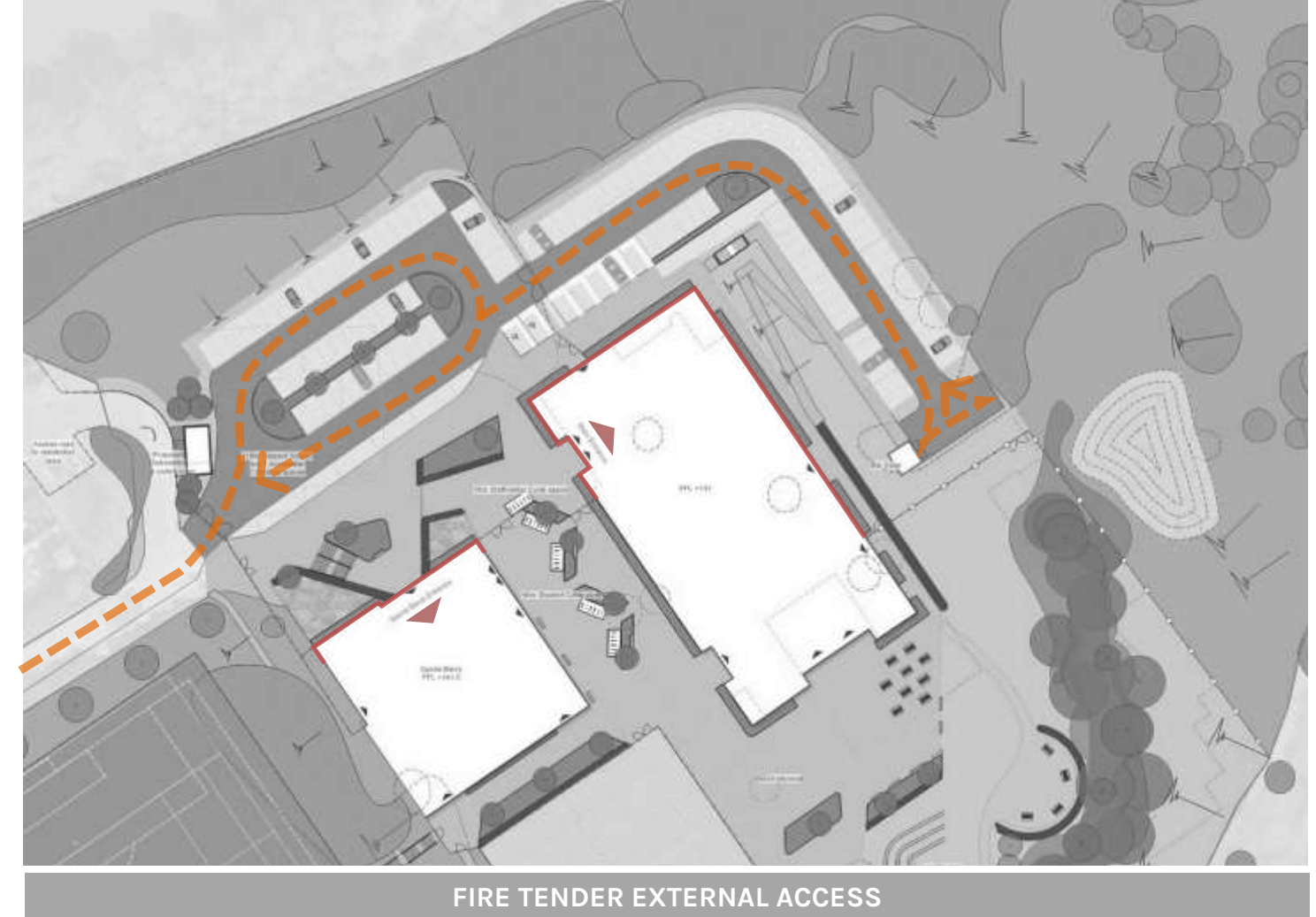
FIRE DETECTION & ALARM: An automatic fire alarm detection system of Category L2 is proposed for the new buildings. The system will be designed and installed in accordance with the guidance in BS 5839-1. It will operate on a 'single-knock' system, where the activation of a single detector or manual call point activates a full alarm throughout the building. The system will also accommodate a 'double-knock' system if required by the school.

MEANS OF ESCAPE: The main school building is served by three main protected stairs, with a minimum width of 1600mm, which provide direct external exit at ground floor level. All three cores are lobbied at Level 00 and Level 01 to ensure they can all be relied on for escape in an emergency. The horizontal distance between these stairs is well within permitted travel distances. The simple, continuous circulation arrangement to the building means that there are very few 'dead-end' conditions in the building. The building's openness and the presence of internal glazed elements will also help in alerting occupants to the presence of a fire. There are internal classroom pass doors in some locations, to allow occupants to avoid exposure to the dining hall void.

STRUCTURE: All elements of loadbearing structure will provide not less than 60 minutes fire resistance.

COMPARTMENTATION: The proposals are in compliance with the limitations on compartments in BS9999. There are no additional requirements for compartmentation in the building. All stores and servers are to contain 30 minutes fire resistant construction.

UNPROTECTED AREA: There are no limits on unprotected areas due to the levels of separation from boundary situations.



**+BOWMER
+KIRKLAND**



Thank You
