Thornhills Primary School

FEASIBILITY REPORT

REV C

January 2021

JBA Consulting
Salts Mill
Victoria Road
Saltaire
Shipley
BD18 3LF
Telephone: +441274714269
www.jbaconsulting.com

Rance Booth Smith Architects
11 Victoria Road
Saltaire
Shipley
BD183LA
01274 587327
saltaire@rbsarchitects.co.uk
www.rbsarchitects.co.uk

Contents

1. Introduction

JBA/Rance Booth Smith Architects have been commissioned to undertake a feasibility report for the site at Thornhills to accommodate a new 2 form entry primary school. The commission was commenced in September 2020 and was completed in January 2021.

2. Scope of study and limitations

The study specifically looks at the existing site and takes into account the proposed garden suburb development.

Project Outline as identified:
The objective of the Feasibility Study commission is to assess the viability of building two new primary schools buildings (2FE) on two separate sites in South East Calderdale. There are currently plans to create two garden suburbs in this locality and the proposed school sites will be located within them. The school sites, which are located in Brighouse and Rastrick in West Yorkshire, each have an area of approximately 1.5 hectares. The proposed Clifton Enterprise Zone, which forms part of the Council's programme of forthcoming projects for South East Calderdale, is situated close to the school sites.

The design of learning experiences which are imaginative, inspirational and active, is a priority area for discussion, planning and action during the feasibility stage.
It is intended that the new primary school buildings will be completed and handed over by 2024.

Information was provided as part of the tender package and additional information on the garden suburbs was provided by ID Planning in October 2020.
Surveys of the site have been undertaken but exclude ground investigation and trial holes other than desktop studies. There has been no involvement in any legal matters regarding the availability of the site etc.

The aim of the study is to consider the initial feasibility of the site for the development of a primary school by Calderdale Council, and enable the council to move to the next stage with its development.

3. Approach and team

A team of consultants were assembled to contribute to the study.

Calderdale Consultancy Framework Manager - JBA: Peter Harrison
Architect and Project Manager - Rance Booth Smith Architects: Linda Hollings
Principal Designer – Rance Booth Smith Architects: Linda Hollings
Cost Control and Quantity Surveyor – Michael Eyres Partnership: Nigel Slack and Matthew Parry

Structural Engineers: JBA**:** Sarah Cropley and Adam Branston

Transport input – Bryan G Hall – Geoff Bowman

Mechanical & electrical engineer – ESP – Paul Dyson

Landscape Architect – JBA **–** Christophe Watiez

BREEAM Assessor – WYG Sheila McKenzie

A series of client meetings were scheduled which were carried out over Microsoft Teams. Separate design team meetings were undertaken to coordinate the input of the above consultants. Initial visits to site were carried out during October/November 2020.

These comprised site appraisals, ecological surveys, arboricultural survey and topographic surveys. Additional consultations were sought from other parties and referenced within the teams' reports.

Information was sought from the various guidance documents pertaining to school design and also the EFA Baseline designs.

4. Surveys and Investigations: Ecological and arboricultural, Phase 1 Geo environmental

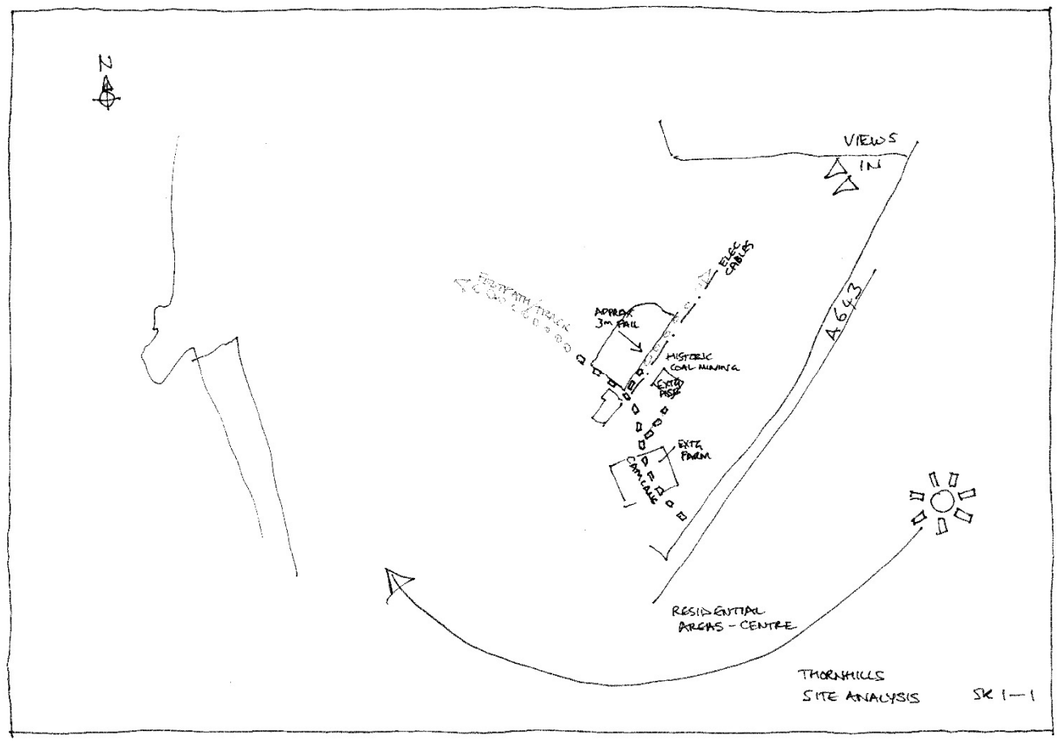
Surveys were undertaken and site appraisals considered.

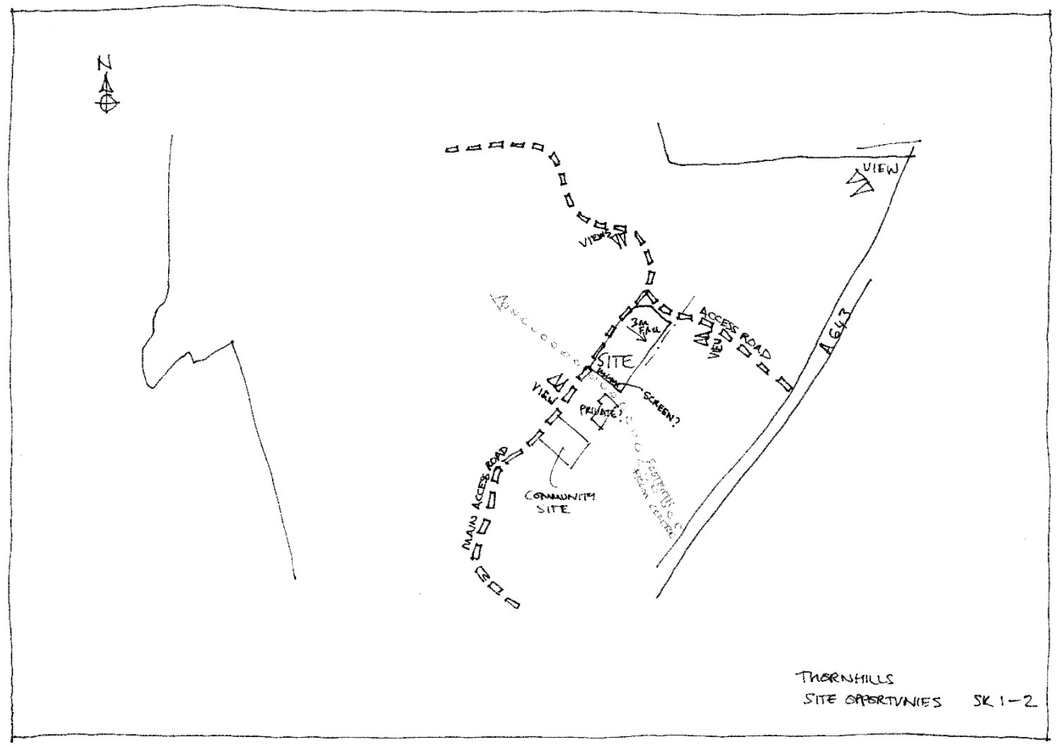
The site is within agricultural land and is a rectangular site, with a gradual slope of 3m from north to south. Footpaths align the boundary on two sides. It is within the central area of the garden suburb.

A Site appraisal sketch was produced which indicated the following:

- Site access via Cam Lane from the south, with footpath/track passing the south west and south east site boundaries.
- Overhead electric cables run along the south east boundary.
- Views into the site from the A643 are visible from some distance.
- There are existing residential areas located to the south.
- Existing house and farm are also located to the south.

Site opportunities were considered: The proposed garden suburb road access is from the south but wrapping around the northern boundary of the site. A second access road is located to the southeast. Views into the site have been identified as from the north, southeast and southwest. The footpath runs along the SW boundary.
There is an existing private site to the south side and a proposed community use site also to this side.





Geo-environmental Surveys - summaries

A desk based geo-environmental study has been undertaken to support development proposals. The desk study research indicates that the site of the new school is situated on an area which has been used historically for agricultural purposes from the mid-19th Century onwards. Land use in the surrounding area has also been predominantly agricultural and rural in nature. However, there has also been a history of coal mining in the wider area at the former Clifton Colliery to the southeast. Also, the remains of a historic tramway known as the Clifton Colliery Tramway runs along the south-eastern boundary of the site. The potential for encountering widespread contamination below the site is low but it is possible that deposits of Made Ground (artificial ground) associated with the historic tramway are present along the south-eastern site boundary. Risks from historic contamination are assessed as being low to moderate within the context of the current development proposals.

The site is underlain by bedrock strata comprising Pennine Lower Coal Measures which typically comprise interbedded mudstones, siltstones, sandstones and coal seams and available geological mapping indicates that the site is located over an outcrop of a sandstone unit known as the Clifton Rock. No superficial deposits are mapped on the site. The site is located in an area of historic coal mining and a historic shaft associated with the former Clifton Colliery is mapped by the Coal Authority as being located within 20 metres of the southeastern site boundary.

At this preliminary stage additional information on ground conditions beneath the site should be gained during subsequent phases through completion of intrusive ground investigations to assess the engineering properties of the soils and the bedrock and to confirm the presence of any historic coal workings and associated features such as the shaft and the nature of any artificial ground along the southeastern site boundary. Completion of such an investigation will allow for development of appropriate foundation solutions for the new school buildings and evaluate options for re-use of site won soils during construction and verify the findings of the desk based risk assessment.

(See Appendix for full report)

Arboricultural Surveys

It was noted that there are limited trees on the site although there are some hedgerows. Where possible those in good conditions could be retained.

(See Appendix for Arboricultural report.)

Ecological Surveys

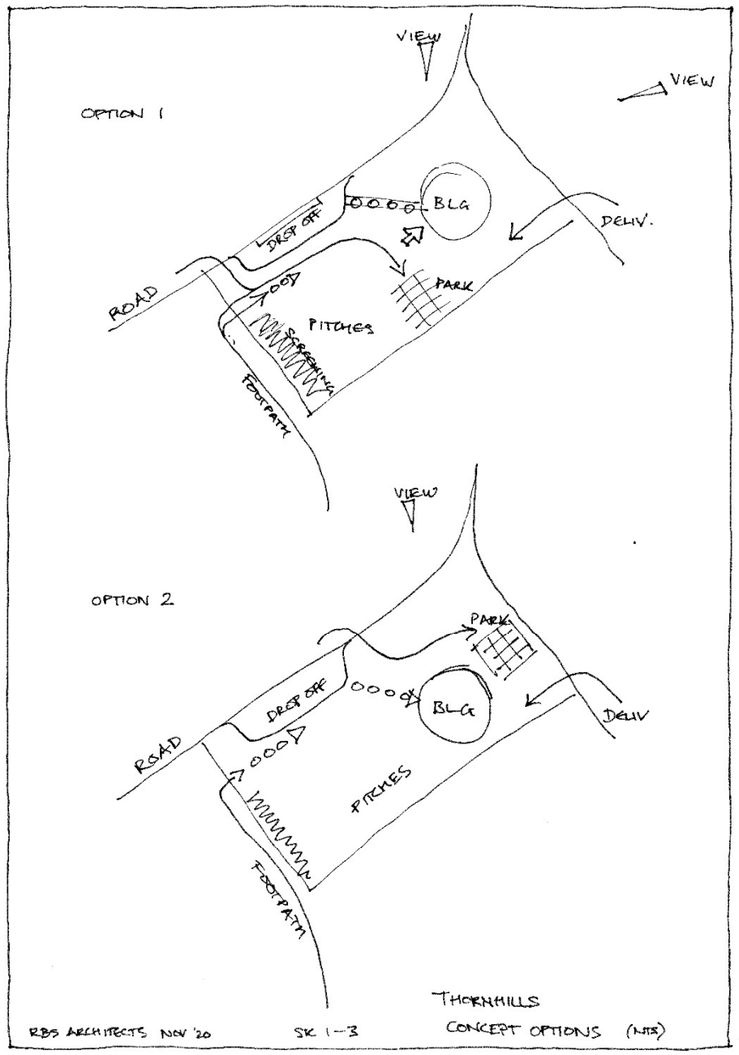
(See Appendix for PEA report.)

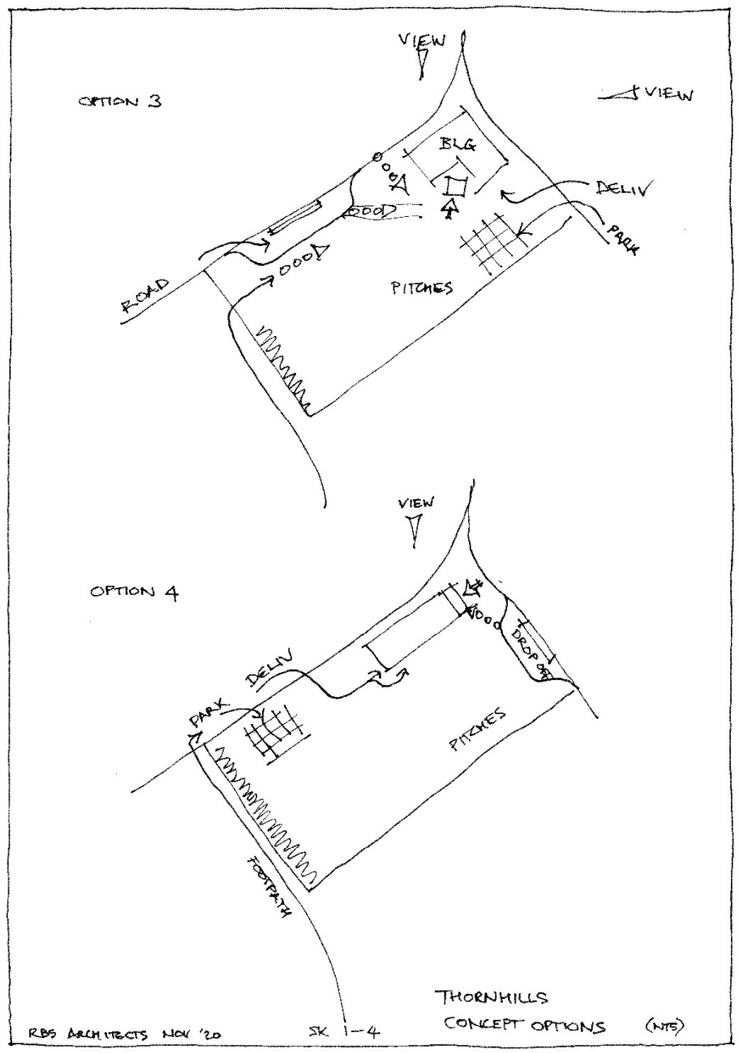
5. Concept sketches / Options appraisal

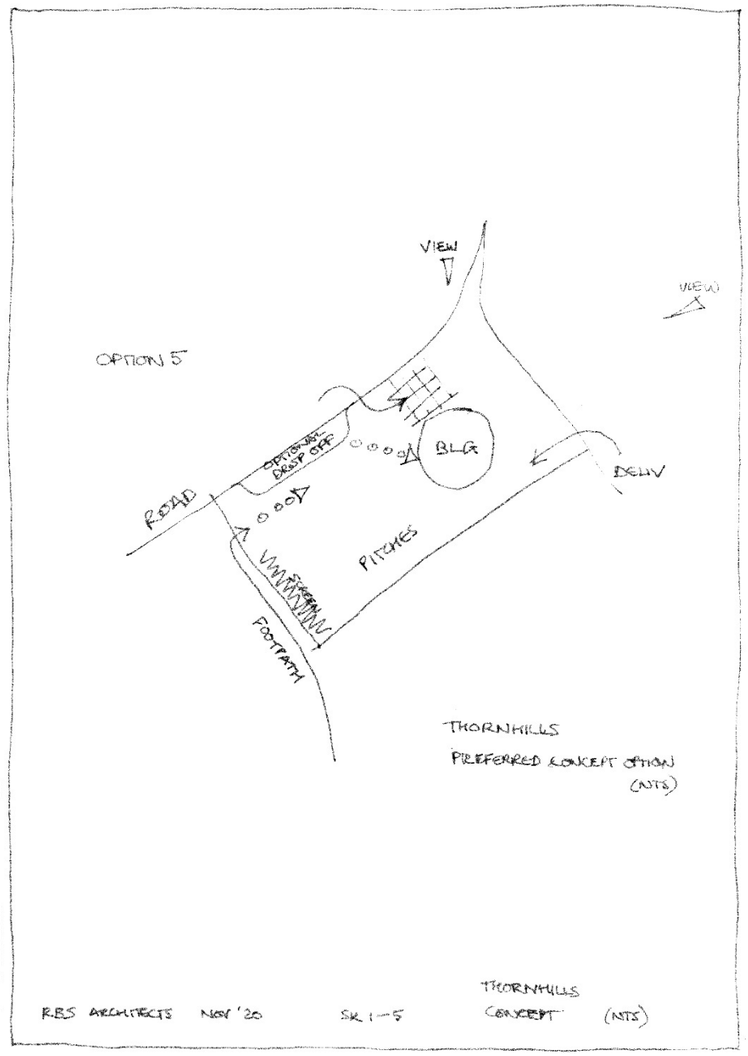
The site was considered in the context of the proposed garden suburb sketch plans.

Concept options took account of the site appraisal and site opportunities sketch. 1-4 Options were produced. These indicated alternative building footprint locations and alternatives for access for building users with separate access for service and deliveries. The proposed road and garden suburb layout have been taken into account.

Option 5 was created following discussion with the client.







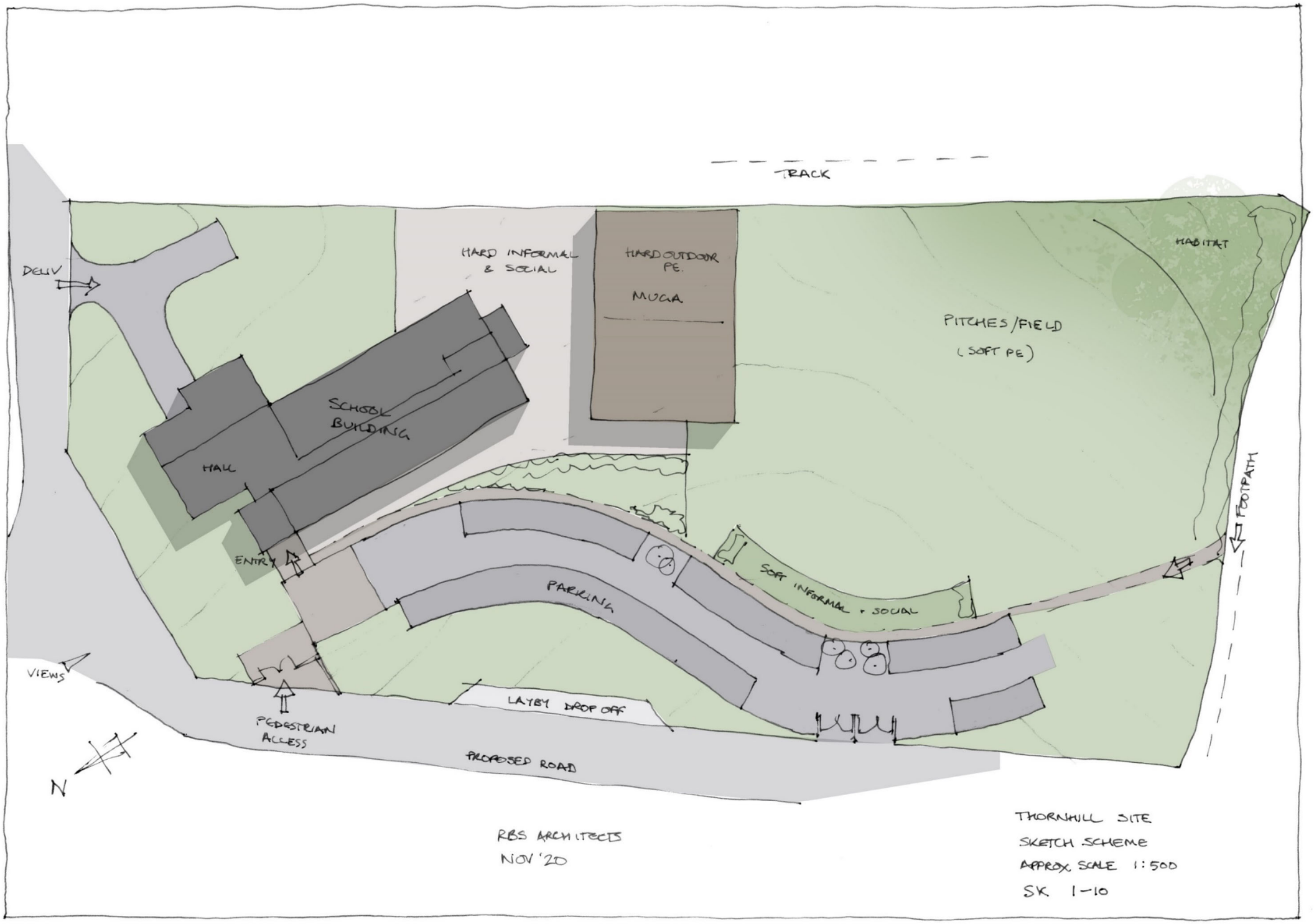
Option 5 was developed into a sketch scheme SK1-10. This shows the building located close to the main road junction, but set back slightly to achieve an improved visual impact. The entrance is in a prominent location on the corner. The building is set on an approximate N-S access, with the intention of reducing solar gains to internal rooms and classrooms. Parking is from the west side with deliveries separated from the east.

Pedestrian access is expected to be high with many pupils attending from the garden suburb itself, although provision is made from the footpath from the town centre from the south. This access can run across the site to the building without crossing parking/vehicular routes.
The MUGA is located on Northwest - Southeast line close to the end of the building.
Site contours suit the building location. Views into the site from the north and access road west are considered. Distance views from the hillside to the NE are possible.

This was taken to a client meeting and the following comments were made:

- MUGA – location might require acoustic fencing due to local properties.
- Length of car park to be reviewed once numbers of spaces are finalised to see if they can be brought a little closer to the building.
- Hard informal and social area to be extended, and to go around the building.
- Soft crumb might be appropriate on west side for early years.
- A bit more expansion space for school building is required. So the MUGA could be repositioned a little.
- ‘Dashed’ future expansion is to be indicated to allow possible future expansion/nursery.


N
Path (um)
Track
Pondwell Lodge
CAM LANE
Uttercroft Barn
Pond
Notes
1 DURING THE CONSTRUCTION PHASE NO DIMENSIONS TO BE SCALED FROM THIS DRAWING.
2 THE CONTRACTOR SHALL VERIFY ALL LEVELS AND DIMENSIONS ON SITE.
3 ON SITE ALTERATIONS TO THE CONSTRUCTION OR FINISHES SHOWN, OR IMPLIED ON THIS DRAWING MUST BE DRAWN TO THE ATTENTION OF THE ARCHITECT BEFORE SUCH WORK IS IMPLEMENTED.
Site Boundary - 1.50 Ha
0 5 10 20 30 40 50
Scale Bar in Metres 1:500
Updates to Topo' Survey 10/11/20 SF A
Revisions Date Sig. Rev.
Rance Booth Smith Architects
Architecture
Interiors
Sustainability
Conservation
11 Victoria Road
Saltaire
Shipley
BD18 3LA
T. 01274 587 327
www.rbsarchitects.co.uk
Project: Thornhills Calderdale
Client: Calderdale Council
Drawing: Site Plan
Date: November 2020
Scale: 1:500 @ A1
Drawn By: SF
RBS Job no Project Originator Volumes Level Type Role Suitability Number Rev.
14493 PHSC RBS XX XX DR A SO 02 A


TRACK
DELIV
HARD INFORMAL & SOCIAL
HARD OUTDOOR PE.
MUGA
HABITAT
PITCHES/FIELD
(SOFT PE)
SCHOOL BUILDING
HALL
ENTRY
PARKING
SOFT INFORMAL + SOCIAL
FOOTPATH
VIEWS
LAYBY DROP OFF
PEDESTRIAN ACCESS
PROPOSED ROAD
N
RBS ARCHITECTS
NOV '20
THORNHILL SITE
SKETCH SCHEME
APPROX. SCALE 1:500
SK 1-10

6. Area requirements and Schedule of Accommodation

A Schedule of Accommodation has been prepared based on the guidance for schools design and number of pupils. In this case the number of pupils has been set at 420 and there is to be no nursery provision. It has been confirmed that the garden suburb can provide the source of full capacity of the school, although some students may attend from outside the suburb and other from the suburb may go elsewhere.

The Schedule of areas has been calculated and reviewed. Many rooms sizes are specified and fixed, although there is a float allowance, and circulation space is variable depending on building layout and planning efficiency. It has been decided to allow a provision of 17% circulation, in order to provide some flexibility at the later stages of design. This circulation figure can be altered if required.

Schedule of Accommodation – Calderdale Schools (420 pupil) **(REV_C)**

Internal Net Area		
Room / Area	Notes	Total Area Required (sqm)
Basic Teaching ▪ 2no. Reception Classrooms @ 62sqm each ▪ 2no. Year 1 Classrooms @ 55sqm each ▪ 2no. Year 2 Classrooms @ 55sqm each ▪ 2no. Year 3 Classrooms @ 55sqm each ▪ 2no. Year 4 Classrooms @ 55sqm each ▪ 2no. Year 5 Classrooms @ 55sqm each ▪ 2no. Year 6 Classrooms @ 55sqm each	2sqm per student approx	784
Hall - Dining / PE		140
Studio	(in schools with more than 300 pupils)	45
Learning Resources ▪ Medical Inspection ▪ Library / Learning Resources ▪ S.E.N	*5sqm approx* (9sqm for every 150 pupils) *10sqm approx*	42
Staff and Admin ▪ General Office ▪ Reception		50
▪ Interview Room ▪ Sick Room ▪ Head Teachers Office		
Storage ▪ Lockable storage of at least 1sqm for every classroom ▪ Walk-in store ▪ PE equipment storage ▪ Coats and bags ▪ Cleaners Cupboard	 (min 1 store required more recommended - It is important that defined teaching storage is provided to avoid compromising the usable area and flexibility of the teaching spaces. 5sqm) (10% of the area of the hall) Coats and bags (located in separate cloakrooms, corridors or directly off classrooms) – 3sqm per class (+ 4sqm circulation space)	129
Staff Room	Including kitchenette	25
Float	*When the recommended minimum areas of each category of space are added together, the total will be less than the recommended total net area. This difference provides the 'float' that can be used to enhance some areas, depending on the priorities of the school*	80
		Total Net Internal 1215 sqm *does not inc. float*

Internal Non-net Area		
Room / Area	Notes	Total Area Required (sqm)
Plant	An area equivalent to 1.5% to 3.5% of the total net area	**25** (based on 2%)
Circulation	corridors leading to more than one teaching rooms should have a clear width of at least 1.8m wall to wall (2.55m wall to wall where there are lockers); shorter corridors leading to one or two small spaces should have a clear width of at least 1.2m;	**206** 17%
Full-Service Kitchen	30m2 + 0.08m2 for every pupil dining on site	**64**
Student Toilets (Key Stage 1 & 2)	One for every 20 pupils in total. (18 total)	**288**
Reception Toilets	one for every ten full-time pupils	**36**
Accessible Toilets		**25**
Staff Toilets	At least one toilet with wash hand basin plus one for every 25 full-time equivalent members of staff	**12** Based on 50 satff
Changing Facilities for Staff		**9**
Specialist Hygiene Room	(with fixed or mobile hoist and space for assistants to change a pupil. In a primary school this should contain a changing bed and accessible WC unless this is included in an adjacent accessible toilet.	**9**
Religious Requirements		**10**
		Total Non-Net Internal - 684 sqm

Schedule of Accommodation **REV C**

External Net Site Area

(Some schools will be on restricted sites and will not have enough outdoor space to meet requirements on site. In these situations, pupils will need to be provided with access to suitable off-site provision).

Where there is limited outdoor space available to pupils on a restricted site, consideration should be given to providing the following: firstly, hard informal and social area, including outdoor play area immediately accessible from early years classrooms; then hard outdoor PE space, ideally in the form of a multi-use games area; then soft informal and social area; finally soft outdoor PE area.

Room / Area	Notes	Total Area Required (sqm)
Hard outdoor PE area	A porous macadam multi-use games area (MUGA), with three netball courts overlaid, with critical dimensions of 22m x 33m plus margins for primary. Sports England Recommend a sports hall with minimum areas of 17.4 m long, by 9.1 metres wide and 7.5 metres tall with appropriate safety run off margins around the court to accommodate 1 badminton court. A pitch size of 36m x20m (+appropriate margins) would allow for a hockey pitch.	800
Soft outdoor PE area	20m2 per pupil U11 yr old football pitch to be sized 79m by 52m with appropriate safety run-offs around the pitch.	8400 2 pitches would require additional 1,296sqm
Soft Informal and Social Area	2sqm per pupil	840
Hard Informal and Social Area	1sqm per pupil	420
Habitat Areas	0.5sqm per pupil	210
		Total Net External Area 10670 sqm

External Non-Net Site Area

Room / Area	Notes	Total Area Required (sqm)
Pedestrian access		
Access for deliveries		
Space for coaches, or taxis to safely drop-off pupils		N/A
Refuse and recycling areas	Secure or distant from the buildings to meet local planning requirements	
Staff & Visitor Parking	To meet requirements from draft Local Plan. 1 space per 2 staff plus 5 spaces for visitors (+area for vehicle manoeuvring)	25 staff spaces 5 visitor spaces Based on 60 staff members. See Highways report for final calculation.
Electric Charge Points	3 Required. Ducting required for 3 further future spaces	3 spaces See Highways report for final calculation.
Disabled Parking		4 disabled spaces Based on 10% See Highways report for final calculation.
Cycle Parking	1 space per 20 pupils (which allows for staff)	21 spaces 15sqm
		Total Non-Net External - … sqm

Total Areas

Area	Notes	Total Area Required (sqm)
Internal Net Area		1215
Internal Non-Net Area		684
Float		80
Internal Walls		90
Total Gross Internal Area		2069
External Net Area		10670
External Non-Net Area		**Not Concluded**
		Total 12,483 sqm

7. Outline General Arrangement Plans

In parallel with the site layout sketch scheme, sketches of the internal layout of the building were produced, using the Baseline design information for ground and first floors.

This sketch plans were issued to all consultants and sent out to other external parties for their input.

- Calderdale Council's Planning Department
- Calderdale Council's Building Control Department
- Calderdale Council's Highways Department
- Calderdale Council's Road Safety Department
- Statutory Undertakers (including Utility Companies)
- Sport England
- Natural England
- Environment Agency
- West Yorkshire Police's architectural liaison officer

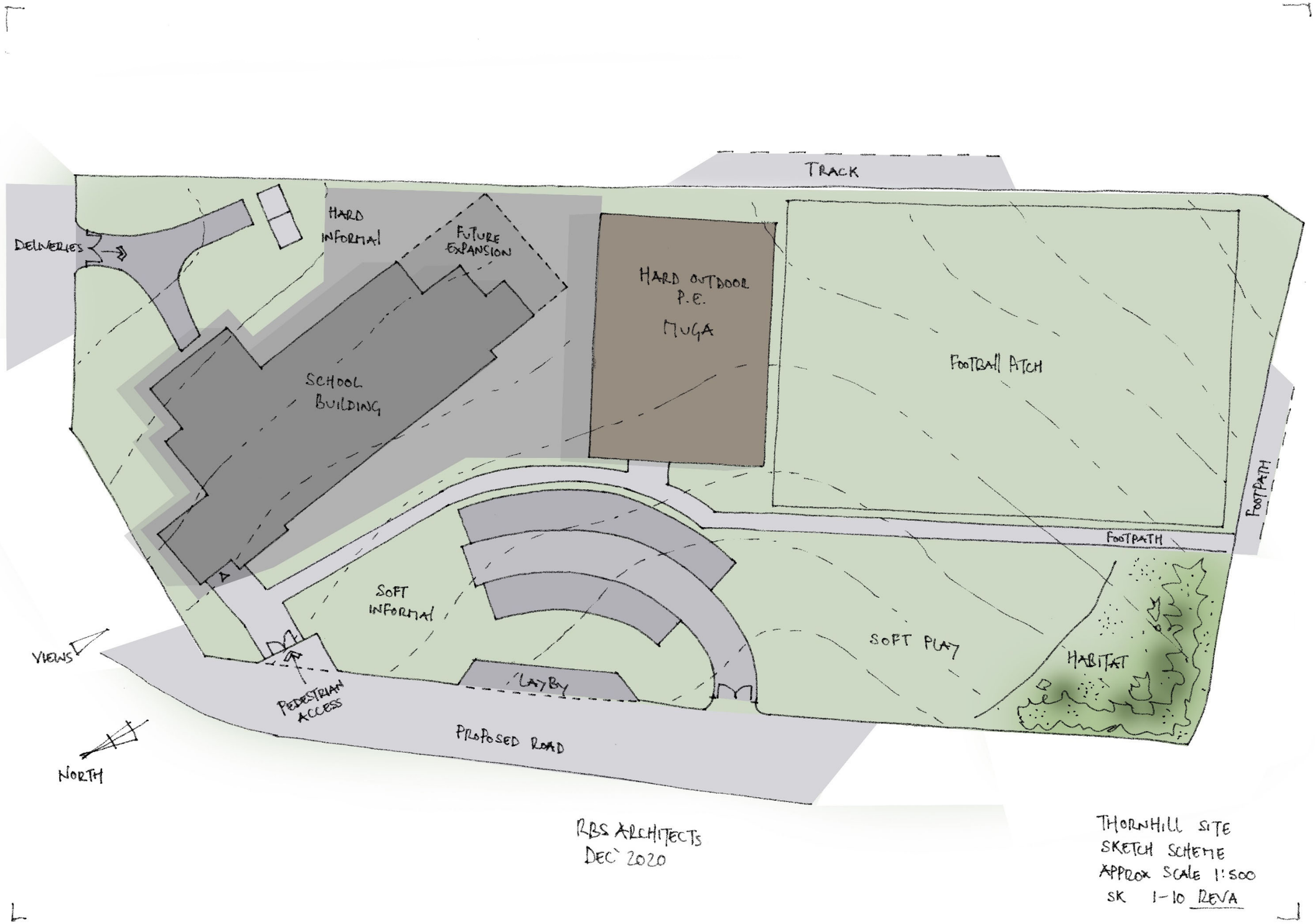
Building Control was consulted at a later stage.
Comments by those consulted are included under later sections of this study.

8. Design rationale and Developed sketch scheme

The site layout was developed to incorporate comments from all wherever possible.

The School building was reorientated slightly to fit with the contours and to minimise earth moving and regrading of the site. The parking requirements were reduced following guidance from planning, highways and numbers of staff. It has also been moved slightly east to maximise space for external pitches. The building remains essentially orientated N-S to reduce solar gains and the associated energy use.

The sports pitch was located at the size proposed by Sport England which restricted its position to the south end of the site.
The MUGA was pulled further from the school building to facilitate possible future school expansion. Ideal orientation would be N-S but this is slightly compromised due to other site constraints.
Service and public/pupil access remain segregated, and the main entrance remains in a prominent visual position on the corner of the site, accessible by vehicles and pedestrians.
Housing for bins and external M&E plant is indicated to the services side of the building.
Cycle and vehicle charging can be easily accommodated close to the building/car park area.
Habitat is located to the corner away from the school building although it is located roadside.
The site will require fencing which could be set into the site slightly to lessen its visual impact. Acoustic fencing adjacent to the MUGA etc could be provided should noise assessments and planning dictate this.
The location of parking and MUGA/pitches mean that it might be possible for community use of these areas to be arranged separately out of school hours.
Future expansion could accommodate additional footprint of 2 number classrooms i.e 4 additional classroom spaces. Alternately the space could accommodate future nursery provision.


TRACK
DELIVERIES
HARD INFORMAL
FUTURE EXPANSION
HARD OUTDOOR P.E.
MUGA
FOOTBALL PITCH
SCHOOL BUILDING
FOOTPATH
FOOTPATH
SOFT INFORMAL
SOFT PLAY
HABITAT
VIEWS
PEDESTRIAN ACCESS
LAYBY
PROPOSED ROAD
NORTH
RBS ARCHITECTS
DEC 2020
THORNHILL SITE
SKETCH SCHEME
APPROX SCALE 1:500
SK 1-10 REVA

The internal layout of the school building was revised to incorporate comments made on the location of the school hall by Sport England, to allow possible future extension.

Calderdale Schools
SK2-20 - **REV** C
Internal Layout
Not to Scale

Rance Booth Smith Architects

Indicative Element Specification

1 Substructure: piled foundations assumed at this stage with insitu concrete slab.

2.1 Frame: structural steel frame.

2.2 Upper Floors: composite concrete floor

2.3 Roof: Metal deck roofing system and insulation. Rainwater goods powder coated aluminium.

2.4 Stairs: Precast concrete dogleg staircases. PPC steel handrails and balustrade.

2.5 External Walls: Facing bricks. Insulated render block cavity walls.

2.6 External Windows & Doors: Double glazed uPVC and aluminium windows and doors.

2.7 Internal Walls and Partitions: Metal stud and block walls. Toilet cubicles. Movable wall.

2.8 Internal Doors: Solid core fire resistant timber door sets.

3.1 Wall Finishes: Plasterboard and skim. Plaster. Hygienic wall finish for kitchen. Ceramic tiles to toilet areas.

3.2 Floor Finishes: Carpet tiling. Safety flooring. Sports hall sprung flooring. Barrier matting.

3.3 Ceiling Finishes: Suspended ceilings and/or acoustic rafts.

4 Fittings and Furnishings: Reception desk. Kitchen units. Pocket tables. Whiteboards, blinds, hooks, shelving.

5.1 Sanitary Appliances: Sanitaryware.

5.2 Services Equipment: Kitchen equipment.

5.3 Disposal Installations: Soil and waste.

5.4 Water Installations Hot and cold water.

5.5 Heat Source: Air source heat pump

5.6 Space Heating & Air Conditioning: zoned heating – radiators and underfloor - see service engineer’s specification for further information.

5.7 Ventilating Systems: natural, assisted and mechanical ventilation.

5.8 Electrical Installations: Power and light including emergency lighting.

5.9 Fuel Installations: Electric.

5.10 Lift & Conveyor Installations: hydraulic Lift.

5.11 Fire and Lightning Protection: Lightning protection. Sprinkler system.

5.12 Communications and Security Installations: ICT infrastructure. Security and control systems. Internal CCTV.

5.13 Special Installations: Building management system.

5.14 Builder's Work in Connection: Builder's work in connection with services.

8 Site Works: Macadam access roads and car parking. Use of permeable paving where possible. Macadam play surfaces. PCC paving slabs. Grass football pitch. Steel fencing. Grass seeding and landscaping. Car park barrier.

8.6 Drainage Foul and surface water: Plastic inspection chambers. Rainwater attenuation. Hydrobake.

8.7 External Services: CCTV and lighting.

9. Planning, Building Regulations, Sport England and Crime Prevention consultation summary

Planning Department Response

The site sketch layout and internal layout were sent to the local Planning Officer Richard Seamans. At this early stage he noted that he did not have any adverse comments. It would be appropriate at a future date to send the scheme to the developer team for the garden suburb.

Sport England Response: (by email)

- Thornhills

Thank you for consulting Sport England on the above pre-application proposal. It is understood that the proposal is for a new 14-classroom primary school, and would be located on existing agricultural land; and the proposal would include an indoor hall, a multi-use games area (MUGA) and a playing field.

The advice given in this response in in respect of the information provided that sets out that this is a proposal for a new school on a greenfield site that is not an existing playing field and is not a replacement for a school, or playing field lost elsewhere.

The existing development site is not considered to be playing field therefore Sport England does not consider this proposal would require statutory consultation, under the terms of the Town and Country Planning (DMP) (England) Order 2015, at the formal planning application stage. However, it is considered to be a development where consultation is advised under the terms of National Planning Policy Guidance Para. 003 Ref. ID 37-003-20140306; and the Government, within their Planning Practice Guidance (Open Space, Sports and Recreation Facilities Section) advises Local Planning Authorities to consult Sport England on a wide range of applications.
https://www.gov.uk/guidance/open-space-sports-and-recreation-facilities-public-rights-of-way-and-local-green-space#open-space-sports-and-recreation-facilities . This application falls within the scope of the above guidance as it relates to the creation of new playing fields.

Sport England would assess any application for the proposed development in light of the National Planning Policy Framework (NPPF) (notably Par 97) and against its own planning objectives, which are Protect - To protect the right opportunities in the right places; Enhance - To enhance opportunities through better use of existing provision; Provide - To provide new opportunities to meet the needs of current and future generations. Further information on the objectives and Sport England's wider planning guidance can be found on its website: https://www.sportengland.org/how-we-can-help/facilities-and-planning/planning-for-sport

Sport England has produced a guide on how sport should be considered by those involved in preparing, assessing and determining planning applications which either affect, propose or create a need for sporting provision. We would advise that this is taken into account prior to submitting any planning application: https://www.sportengland.org/how-we-can-help/facilities-and-planning/planning-for-sport#planning_applications

In response to this specific pre-application consultation Sport England's comments are as follows:

It is understood that the proposal is for a new 14-classroom primary school, and would be located on existing agricultural land; and the proposal would include an indoor hall, a multi-use games area (MUGA) and a playing field. It is assumed that this is a new school and not one to replace a school elsewhere. The proposal offers opportunities for not only school sport and activity but community as well. It could be considered to be consistent with Sport England objective of 'Provide', providing sports facilities, and we would recommend that England advise that the sport facilities be designed fit for purpose and meet appropriate design and size standards. Any new facilities should be built in accordance with Sport England's technical guidance notes, copies of which can be found here http://www.sportengland.org/facilities-planning/tools-guidance/design-and-cost-guidance/

Sport England wishes to draw your attention to the following points:

1. The sports hall lies in a position within the building that would make it awkward to extend should there be a need to do so in the future.
2. We recommend that the sports hall dimensions are of such a size that it can accommodate at least one badminton court of dimensions of 17.4 m long, by 9.1 metres wide and 7.5 metres tall with appropriate safety run off margins around the court free from obstructions and pillars. If other indoor sports are to be accommodated the size may need to be larger. I attach a link here to Sport England's Guidance on "Comparative Sizes of Sports Pitches & Courts (INDOOR) (2015)" for your reference where you can find the sizes of courts for other sports including basketball and netball.
3. Sport England sports hall specific design guidance is available here.
4. The construction of the playing fields should be informed by an agronomy report prepared by a sports turf agronomist, and be constructed in accordance with Sport England's "Natural Turf for Sport Design Guide" available here.
5. The sports pitches on the playing field should be of at least a minimum size suitable for the age of children at the school. For example the dimensions of a Youth U11/12 (9v9) football pitch are 79m by 52m (including safety run-offs around the pitch). I attach a link here to Sport England's Guidance on "Comparative Sizes of Sports Pitches & Courts (OUTDOOR) (2015)" for your reference where you can

find the sizes of pitches and courts for other sports and sizes for different age groups. The position of the MUGA and play area restrict the space for the playing field/pitch(es) and if moved to towards the turning area they may enable up more space for pitches so that it could be easier to accommodate the appropriate size(s) of pitches.

6. The size and design of the MUGA, should be informed by the needs of the sports that the school would want to accommodate. Design guidance on sizes and surfacing is available here.
7. There is a range of further sports facility design and cost guidance available on Sport England's website here that you may find useful.
8. Sport England would welcome a Community Use Agreement as part of the proposal to open up the school sports facilities, including hall, MUGA and pitches to community use. More information on Community Use Agreements can be found here.

Sport England, in conjunction with Public Health England, has produced 'Active Design' (October 2015), a guide to planning new developments that create the right environment to help people get more active, more often in the interests of health and wellbeing. The guidance sets out ten key principles for ensuring new developments incorporate opportunities for people to take part in sport and physical activity. The Active Design principles are aimed at contributing towards the Government's desire for the planning system to promote healthy communities through good urban design. Sport England would commend the use of the guidance in the master planning process for new residential developments. The document can be downloaded via the following link: https://www.sportengland.org/how-we-can-help/facilities-and-planning/design-and-cost-guidance/active-design

Sport England reserves the right to object to any subsequent planning application if we do not consider that it accords with our objectives or Paragraph 97 of the NPPF.

If you require any further information or a conversation about any of the points raised please do not hesitate to contact me.

Yours sincerely,

Janet Belfield
Principal Planning Manager - North

Crime Prevention Officer Response: (by email)

Good morning

Thank you for your email in relation to security recommendations for two new primary schools at Thornhills and Woodhouse in Brighouse.

Both sites lie within a medium risk area for crime in Calderdale and below I have outlined my security recommendations using "Secured by Design" principles.

I note from your email that the schools are to be within a large future project, creating "villages". However "secured by design" recommends "that new schools should be planned on a single site wherever possible. Multi-site schools inevitably generate movement between the sites, with increased potential for unauthorised access and difficulty in managing perimeter security."

- Perimeter fencing around the schools should be to 2.4m high weldmesh construction and to LPS 1175 SR1.
- Lockable gates should also constructed to LPS 1175 SR 1 and match the height and design of the adjoining fence. There should be no climbing aids.
- I note from the plans that both schools will have footpaths running adjacent to the grounds. Public footpaths immediately outside the boundary fencing can affect security. If the footpath already exists and cannot be re-routed, or deemed a necessity, then the use of defensive planting in addition to fencing should be considered. However, this should not block natural surveillance from the footpath.
- All external doorsets within the shell of the schools, should be to an accepted security standards of either Secured by Design accredited, certified to: PAS24:2016 or STS 201 BR2 or LPS 2081 SRB (Issue 1 2014) or STS 202 BR2 or LPS 1175 SR 2. Glazing in and adjacent to doorsets must meet the requirements of BS EN 356:2000 class P1A laminated glass to a minimum thickness of 6.4mm fitted to the inner pane. Certificates should been seen and verified.

All external doorsets shall be certified to the following relevant specific standards:-
BS 7412:2007 (PVC-U)
BS 4873:2009 (Aluminium)
BS 6510:2010 (Steel)
BS 644:2009 (Timber)
BS 8529:2010 (Composite)

- All windows within the shell of the schools, should be to an accepted security standards and certified to either PAS24:2016 or STS 204 or LPS 2081 SRA (Issue 1 2014) or LPS 1175 SR1. Minimum glazing requirement is BS EN 356:2000 P1A laminated glass to a minimum thickness of 6.4mm fitted to the inner pane, certificates should been seen and verified.

  Windows must also be fit for purpose and shall be certificated to the relevant material standards:-
  BS 4873:2009 (Aluminium)
  BS 7412:2007 (PVC-U)
  BS 644:2012 (Timber)
  BS 6510:2010 (Steel)

  The following performance is also required:-
  BS 6375 parts 1 & 2

- Clear signage to be erected at all vehicle and pedestrian entrances, to direct people to their desired location. The main entrance/reception desk will have clear signage. This is to prevent people wandering around the grounds unnecessarily.
- The main entrance/reception will have access control to stop any unwanted visitors/strangers and to prevent unauthorised access into the school.
- Badly designed and located toilets in schools can offer opportunities for bullying, assault, arson and antisocial behaviour. The toilet blocks should be positioned opposite offices, staff work rooms or preparation rooms so that passive supervision can work well throughout the school day. At least one of the toilet blocks should be positioned to allow easy access from outdoor spaces used during lunch and break times.
- Any laptop charge/storage rooms should be located on an upper floor with no external windows. The door to the store should have two 5 lever mortice locks fitted to BS3621 standard.
- Consideration should be given to the location of the bin store, and any other climbing aids, and should not be positioned so it gives access to the roof.
- External lighting should not create shadows and should be a minimum 60Ra on the colour rendering index.
- West Yorkshire police do not advocate security PIR lightning. Dusk till dawn lighting is preferred,
- CCTV should be to BSEN 50132-2012 standard. Consideration should be given to the location of the hard drive as we see offenders breaking into schools and then removing the hard drive so all images are lost. The images ideally should be backed up to an external storage device and the hard drive stored in lockable and secure cupboard/area.
- Alarm systems should be to BSEN 50131-8 2009.
- If there are to be any cycle shelters then these should be galvanised steel construction (minimum thickness 3mm) filled with concrete. The minimum foundation depth should be 300mm with welded “anchor bar”.

If secured by design if going to be considered then I will require an application form which can be obtained from the secured by design website then click on Industry advice and guides page.

If I can be of further assistance please do not hesitate to contact me.

Tracy Hanson
West Yorkshire Police
Architectural Liaison Officer
Calderdale

Building Control Response (by email)

The updated sketch scheme was sent to Building Control Officer Mike Terry who has provided the following response:

The Buildings

The building are shown as two storey detached buildings. No details are provided of the potential construction of the load bearing elements and external envelope. Perhaps the buildings might be erected with masonry exterior walls supported by a steel frame, with suspended concrete first floor under a timber constructed dual pitch roof, supported by the steel frame, together with a solid ground floor slab.

If the construction might be more esoteric, contain external cladding, or be constructed of modular means, earlier discussions might be profitable to discuss any additional implications please.

It is assumed that the hall is a lofty space.

Will the building incorporate an atria or areas of open spatial planning, as this may potentially have a negative impact upon fire safety if not addressed and mitigated in the design.

As schools have duties under the Equalities Act and Building Regulations M1 applies, I assume that the building and its curtilage will be designed to be wholly accessible, meeting the aspirations and recommendations of BS 8300 Parts 1 & 2, including the provision of accessible ground floor exits.

I believe the location of a vertical lift facility, communicating between floors, to be located opposite the hall and near to the left-hand staircase.

Building Regulations

Purpose Group V ‘Assembly & Recreation’ – Educational establishment

Minimum periods of fire resistance 60 minutes (with sprinkler 30 minutes) *

Compartmentation max floor area 2000m^2 (4000m^2 if building is sprinklered) *

- See AD B Vol II Appendix E i.e. BS EN 12845 including Appendix F

If the floor area exceeds 900m^2 a fire fighting shaft is required.

Proposed fire precautions

Sufficient fire precautions are required to demonstrate a level of fire safety that complies with Approved Document B (AD B Vol II 2019 Edition with 2020 Amendments), BB100 or BS 9999, for example:

▪ The general philosophy for means of escape is that there will be satisfactory means to give an early warning of a fire to the occupants together with minimal travel distances, generally in alternative directions.

▪ The escape strategy should be based on simultaneous evacuation; with actuation of the fire alarm system give an audible warning, if the premises might be used by people with a hearing impairment a visual indication would be of value too.

▪ Category L2 fire alarm system installed throughout the building to BS 5839-1

▪ The buildings are shown with 6 classrooms to the ground floor and 8 classrooms to the first floor, together with additional (presumably) break out spaces. Planned occupancy may well therefore be 14 classrooms @ 30 pupils + 2 adults = circa 448 people plus other staff on site. What is the planned occupancy please?

Will the additional ‘break out spaces’ be occupied (SEN, Studio, Practical) from the fourteen classrooms or is it envisaged that pupils might from other locations, thereby increasing the actual occupancy?

▪ All occupants should evacuate the building in less than 3 minutes. Will each ground floor classroom and the hall space have direct access to external air?

▪ Means of assisted evacuation is required from the first floor. It would be best if the lift facility were designed as a lift capable of use for assisted evacuation after the fire alarm has been raised, by the provision of additional switchgear and a secondary power supply.

Will the SEN area include use of soft play areas, where people with mobility impairments might be enabled to exercise free from the constraints of their access equipment? If so consideration should be given to an appropriate and safe means of evacuation, e.g. evacuation mats. Where evacuation mats are provided, hoists may be necessary too, to ensure the safe and effective evacuation of non-ambulant children within 3 minutes. It would be prudent to practice this form of evacuation, including how one might lift a young person from the floor safely and without hazard, prior to dragging them out of the building. An evacuation mat may not be suitable for vertical evacuation via the staircase. It may also be prudent to consider the use of a protective 'bump' hat for those riding upon the evacuation mat.

▪ If door access control equipment is to be deployed, it should fail safe in the open 'unlocked' position when the fire alarm is activated. Manual release should also be provided alongside the door in the form of a break glass unit.

▪ Smoke and/or heat detectors should be provided in each room, dependent upon risk of accidental activation, (where ever possible it is prudent to fit smoke detection) to provide the earliest warning of a fire,

▪ All escape routes should have emergency escape lighting (to BS 5266-1) and signage (in accordance with the Signs & Signals Regulations or BS 5499), both internally and externally. With care much of the emergency escape lighting can be fitted within the standard artificial lighting thereby improving the visual appeal of the premises. If the school premises will be used beyond the 'school day' (e.g. for breakfast clubs, after school clubs, Staff, parent, community meetings, fairs, fetes, galas or shows, the installation of emergency escape lighting is essential.

▪ The partitions to the central corridors used for means of escape must continue to the underside of the first-floor slab or roof deck to inhibit the spread of smoke and be fire stopped.

▪ Compartmentation: max floor area 2000m^2 (4000m^2 if building is sprinklered) *

▪ Will the corridors be constructed as 'protected corridors' with fire resisting self-closing door sets? This arrangement can create difficulties in a school, where teachers often like their classroom doors to be open or ajar? If fire resisting self-closing door sets are to be used, consider the use of magnetic door hold up devices or swing free devices linked to the premises fire alarm system. **Note:** leaving classroom doors open or ajar may conflict with requirements to provide acoustic protection within the building in-accordance with BB 100 & E4.

▪ To maintain high levels of occupant fire safety, protect the central internal escape route, and offer the greatest levels of asset protection, it would be best if the corridor walls were carried through the ceiling and fire stopped to the back of the first floor or roof deck, or to provide a fire resistant ceiling of some merit (perhaps in excess of 30 minutes), where the enclosing walls only reach to the ceiling and do not separate the ceiling void above.

▪ The externally accessed plant room should be isolated be a fire compartment and the walls be of at least 30 minutes fire rated construction and fire stopped. The plant room should be protected by an automatic fire detector linked to the premises fire alarm.

▪ All elements of the structure to receive 60 minutes fire resistance, (30 minutes if an automatic fire suppression system is fitted).

Will the site be located within a fenced perimeter? If so how will the occupants escape the confines of the fence during an emergency without the use of a key, fob or code? Any secure gates should release on the activation of the premises fire alarm.

If the external footways travelling away from final exit doors pass adjacent to the external fabric of the building (within 1.8m) any fenestration should be sealed shut and fire resistant for a minimum of thirty minutes.

Provision of automatic water fire suppression system – sprinkler

The authorities Fire Safety Policy states:- "In accordance with agreed policy and concordat the Local Authority will consider providing sprinkler installations to provide automatic fire suppression (to BS 12845:2004 inc A2:2009) to all newly built schools, major extensions and works of significant refurbishment".

The benefits of installing a sprinkler system are an increased life safety standard for the occupants, together with enhanced asset protection, albeit at increased capital costs and additional annual revenue costs, but also enabling benefits to be gained during the design and construction by virtue of a relaxation of Building Regulation requirements where an automatic water fire suppression system is installed.

Whilst a fire event in a sprinklered classroom could be tidied up and the room back in operation within 24 hours, the same fire in a none sprinkler protected room may well take the room (and adjacent spaces) out of use for months whilst the works of repair are procured, tendered and undertaken.

Building Bulletins

Additionally, educational premises are expected to meet the rigours of Building Bulletins, namely

BB 93 Acoustics
BB 100 Fire Safety
BB 101 Ventilation, thermal comfort & air quality
BB 102 Designing for disabled children and children with special educational needs in mainstream schools
BB 103 Floor guidelines for mainstream schools

Internal Layout

Specific questions regarding the tabled sketch, namely:

Please clarify use of all rooms and spaces
Ground floor central corridor does not include a final exit to the right-hand end.
The central, shared bathroom to the ground floor classrooms does not indicate a final exit door.
Please provide details of arrangements for cloakroom facilities.

The central spine corridor at both ground and first floor should be isolated about the mid-point by a fire resisting FD30S, self-closing, double swing, cross corridor door set (and any associated side screen), carried to the soffit of the floor or roof above and fire stopped. The door leaf should incorporate a vision panel. The door may be held open on a magnetic door hold open device linked to the premises fire alarm, with smoke detection provided each side of the door, within a 2m distance. The purpose of the door is to prevent the risk that the whole of the corridor might be smoke logged in the event of a fire.

The vertical lift facility should be isolated from the central spine corridor at each level by the use of a fire resisting FD30S, self-closing, door set (and any associated side screen), carried to the soffit of the floor or roof above and fire stopped, to prevent the risk of smoke passing about the building via the lift facility.

Please provide details of any potential use of the sterile central, spine corridor. At first floor level a number of boxes, spaces or pieces of furniture are indicated. Please describe their use and purpose.

The two staircases communicating between the ground and first floor should be constructed as ‘protected’ staircases, isolated from the adjacent accommodation by thirty minutes fire resistance with fire resisting FD30S self-closing, door set (and any associated side screen), carried to the soffit of the floor or roof above and fire stopped. The protected staircase should include a final exit at ground level. The ‘protected’ staircase should be maintained sterile and empty. It should not be used as a learning space, nor as a storage area.

The hall is to be used as the dining room and is linked to the kitchen. If there is to be a dominant servery opening between the kitchen and hall, one way of maintaining ease of use and ensuring asset protection is to isolate the hall and kitchen entity from the remainder of the building by 30 minutes fire resistant construction including fire resisting FD30S self-closing, door sets.

It is noted that that currently the hall is shown without the benefit of multiple final exits doors leading to external air. Access and egress is presently indicated by a single pair of double doors opening against the direction of escape. Currently the maximum safe occupancy of the hall is 60 people. If the doors exit from the hall, opening in the direction of escape, care should be taken to avoid obstruction of the corridor and the risk of strking people, by setting the doors within an alcove to prevent obstruction of the corridor. It would be better to add a number of additional final exist from the hall.

Both once at ground level and twice at first floor level, there appears to be the provision of a ‘dead end’ corridor, where occupants may have to pass adjacent accommodation before having a choice of direction of escape. Such instances may require additional protection measures to be provided.

Please be aware of the need for separate gender (male & female) toilets within schools, also HM Government’s concern for the proliferation of gender-neutral facilities. Please see the MHCLG note attached.

Please be aware of changes to AD M2 from the beginning of January 2021 regarding the provision of ‘Changing Places’ within places of ‘Assembly & Recreation’. Although schools are not included, the amendments to the Approved Documents suggest that where schools are used by the community, that guidance may be created requiring the inclusion of changing places accommodation. Please find the amendment to AD M2 attached.

As with any new none domestic construction, the premises will need significant thermal insulation standards and great care during construction to meet the challenging air tightness standards to ensure compliance. The efforts required on site to achieve an appropriate standard should not be underestimated.

As and when the designs are firmed up, it might be prudent to continue further in-depth discussions with my learned colleague Phil Deacon, who will lead on the project, including consultation with the Fire & Rescue Service. Phil can be contacted via email at Philip.deacon@calderdale.gov.uk or via his mobile, on 07800 675 436. If have attached your sketches, so that Phil might be able to see them.

As the projects move toward fruition and construction, Phil will be able to advise which of our Surveyors will deal with each project. I hope this helps. Please do not hesitate to contact me if you require any additional information.

Kindest regards, Mike

Mike Terry
Building Control Manager
Building Control

Note: a response to Mr Terry was made but many of the queries above would be concluded at the next stage.

10. MEP/Building Services Strategy (including environmental considerations)

See Appendix

11. Structural, Civils and Drainage Strategy

Civils & Structural Input

JBA Project Code	2020s1386
Contract	Thornhills Primary School
Client	Calderdale Council
Day, Date and Time	06-01-2021
Author	S Cropley
Reviewer / Sign-off	
Subject	Civils & Structural Appraisal RIBA 0-2

1 Document control

P02	Final	07/01/21	S Cropley		
P01.1	Draft	06/01/21	S Cropley		
Rev.	Status	Date	Originated	Checked	Approved

2 Introduction

Calderdale Council have engaged JBA to provide a feasibility assessment for a newbuild 2-form entry primary schools in the Thornhills area of South East Calderdale.

The Council's brief requires Breeam 'Very Good' to be achieved as a minimum, with an aspiration to achieve Breeam 'Excellent'.

This filenote focuses on the civil & structural requirements that have fed into the cost plan, plus outlines any 'abnormals' as currently known.

3 Building structure

3.1 Site characteristics

The site is sloping and the school has been aligned to sit within the contours to minimise the extent of retaining walls and pop outs. The school building has an approximate 1m slope front to back.

The ground floor is assumed to be on one level, with access/egress currently at ends and midpoints. Re-contouring of some of the site may be feasible to reduce the extent of retaining walls required to the buildings.

3.2 Form of construction

The school is a two storey buildings with a central spine corridor, maximising open spans and natural light to the classrooms. The building is envisaged to be steel framed with composite concrete floors, to support passive heating/cooling measures and assist with acoustic requirements. The steel frame would allow for clear classrooms with perimeter columns and a line of internal columns situated along one of the corridor spine walls, effectively hiding internal vertical supports. The composite beams could be cellular to maximise head heights whilst allowing building services to be threaded through the cells.

The ceilings could be generally exposed with localised suspended acoustic rafts rather than full suspended ceilings, so that passive concrete cooling/heating benefits are maintained, whilst still hiding some of the ceiling services.

The steel frame will also allow for future flexibility opportunities, assuming building services can be suitably positioned to reflect future changes of layouts.

There is also opportunity for a green roof to be included, to assist with drainage attenuation requirements & increased biodiversity.

3.3 Foundations

Despite the site being essentially open agricultural fields there is scant information on ground conditions other than broad scale geological mapping.

Therefore, at this preliminary stage piled foundations have been assumed, which can be reviewed at later RIBA stages when site investigations are carried out. It is hoped these foundations can then become raft foundations or strip footings.

The Thornhills school site is situated in an area of historic coal mining. However, overall the desktop study shows that risks associated with mining are relatively low. There is a historic shaft marked within 20m of the property boundary, so as a precaution it would be prudent to confirm during site enabling works (or beforehand) that the shaft does not encroach onto the site.

From a contaminated land perspective, risks posed to the future development are considered low. There are no mapped historic sources of contamination on the site, or surroundings, although there may be an area of historic infilling/deposition near to and just beyond the southern boundary associated with historic coal mining. At this stage, no particular "abnormals" from a ground contamination perspective are anticipated that would preclude for example retention on-site of material generated during earthworks.

Again, in the absence of sufficent GI data it would be prudent to allow for low level gas protection measures on the basis that it is located in an area of historic mining. The likelihood is that this would not be necessary but this requires confirmation through monitoring of ground gases.

3.4 Drainage Requirements

Since the site is sloping, and the surrounding infrastructure is yet to be constructed, gravity drainage has been assumed throughout.

Attenuation requirements have been assumed using non-permeable paving & parking areas for a 'traditional' drainage scheme, however permeable surfaces should be reviewed for feasibility in next RIBA stages, when further ground conditions information is available.

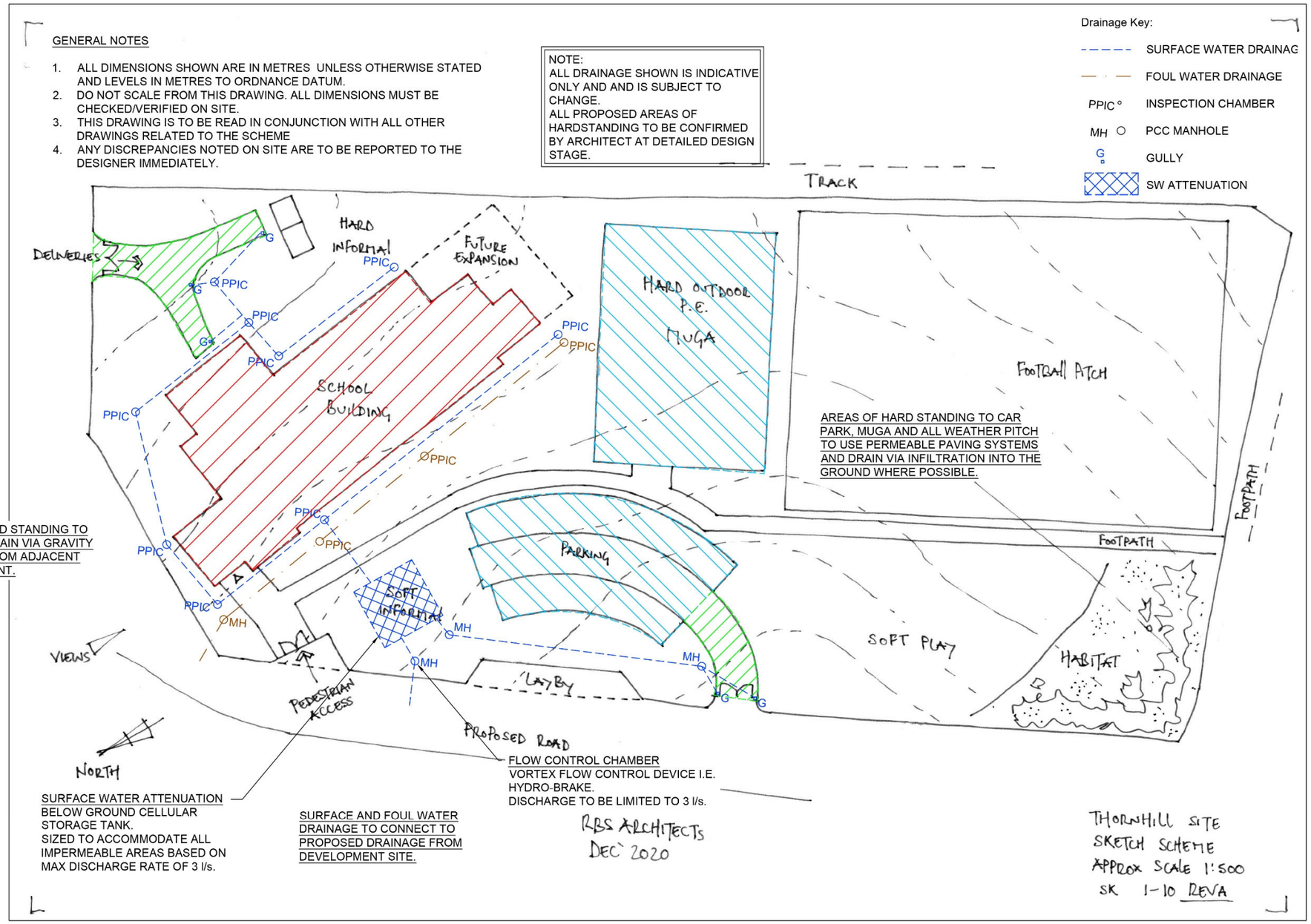
The use of permeable paving systems in the proposed car parking and access road areas could mean a potential reduction of attenuation volume requirement if existing ground conditions allow.

If permeable paving is used for car parking areas, there would be no requirement for a petrol interceptor as only the roof and non-trafficked areas would discharge from site. Similarly, there is no requirement for a petrol interceptor if the total parking/access road area is reduced to less than 800m² or 50 car parking spaces.

Connection points for both Surface and Foul water drainage from the proposed school has been determined by the natural existing gradient of the ground to ensure discharge via gravity. Connection will be to new drainage systems, beyond our site boundaries, that are located within the new carriageway for the proposed residential developments.

The scheme includes for a hydrobrake to limit discharge to 3 litres/second and assumes that suitable surrounding drainage infrastructure will have been constructed (by others) & will be in working order prior to the opening of the school.

SCHEMATIC DRAINAGE LAYOUT, IMPERMEABLE AREAS & PROPOSED RETAINING



12. Cost Plan

ORDER OF COST ESTIMATE

For

THORNHILLS PRIMARY SCHOOL BUILDING

At

SOUTH EAST CALDERDALE

For

Chartered Quantity Surveyors and Project Managers

208/210 Keighley Road
Bradford
West Yorkshire BD9 4JZ

T. (01274) 480011
E. nigel.slack@eyres.co.uk
W. www.eyres.co.uk

DECEMBER 2020

Order of Cost Estimate 1

1. Executive Summary

1.1 Description of the project

Construction of 1 Nr new build Primary School building and associated external works.

1.2 Estimated Costs

Based on the current drawings and project information, the current estimated costs (excluding VAT) are as follows:

Thornhills £ 8,255,329.91

The basis of this estimate can be found within Appendix 1.

Within this estimate there are several items which could be omitted to reduce the overall cost of the project, for example the BREEAM 2018 Excellent rating and Climbing wall. Any omissions would also slightly reduce the Contingency (10% of the costs) and Tender Price Inflation uplift.

1.3 Estimate Base Date

We estimate the project to be completed by the Second Quarter 2024. If the project were to be delayed to the Second Quarter 2025 we would recommend an increase to the attached costs by 4.1% (as per the BCIS All in Tender Price indices).

1.4 Procurement type

We recommend the project be procured using a Traditional form of procurement administered under the JCT Standard Building Contract with Quantities 2016. Within the JCT Standard Building Contract there is provision for elements of the construction to be Contractor Designed.

It is our understanding that following the publication of the 'Procurement Policy Note 08/20 - Introduction of Find a Tender', The project will be required to be published on the UK's new procurement platform 'Find A Tender' the new Post-Brexit alternative to the 'Official Journal of the European Union's Tenders Electronic Daily (OJEU/TED).

2. Appendices

Appendix 1 – Estimated costs build up

Appendix 2 – Cost of BREEAM level 'Excellent' and 'National School Delivery Cost Benchmarking' 2008

Appendix 3 – BCIS Cost per m² for Primary Schools

Appendix 4 – A similar project from the BCIS for comparison

Appendix 1

			Breakdown	
Element		**As latest drawing**	**Cost/m²**	**% of Cost**
0	Demolitions & Alterations	0	0.00	0.00
1	Substructure	362,075	175.00	7.49
2.1	Frame	200,693	97.00	4.15
2.2	Upper Floors	217,245	105.00	4.49
2.3	Roof	182,072	88.00	3.77
2.4	Stairs & Ramps	8,276	4.00	0.17
2.5	External Walls	148,968	72.00	3.08
2.6	Windows & External Doors	161,382	78.00	3.34
2.7	Internal Walls & Partitions	171,727	83.00	3.55
2.8	Internal Doors	82,760	40.00	1.71
3.1	Wall Finishes	68,277	33.00	1.41
3.2	Floor Finishes	62,070	30.00	1.28
3.3	Ceiling Finishes	51,725	25.00	1.07
4	Fittings & Furnishings	97,243	47.00	2.01
5.1-4	Plumbing Installations	169,658	82.00	3.51
5.5-6	Heating Installations	266,901	129.00	5.52
5.8	Electrical Installations	211,038	102.00	4.36
5.9	Fuel Installations	6,207	3.00	0.13
5.10	Lift & Conveyor Installations	26,897	13.00	0.56
5.11	Fire and Lighting Protection	6,207	3.00	0.13
5.12	Communication and Security installations	159,313	77.00	3.29
5.13	Special Installations	31,035	15.00	0.64
5.14	Builder's Work	24,828	12.00	0.51
		2,716,597	**1,313.00**	**56.18**
8	External Works	1,082,087	523.00	22.38
8.6	Drainage	260,694	126.00	5.39
8.7	External Services	161,382	78.00	3.34
10	Preliminaries	614,493	297.00	12.71
	Total	**4,835,253**	**2,337.00**	**100.00**

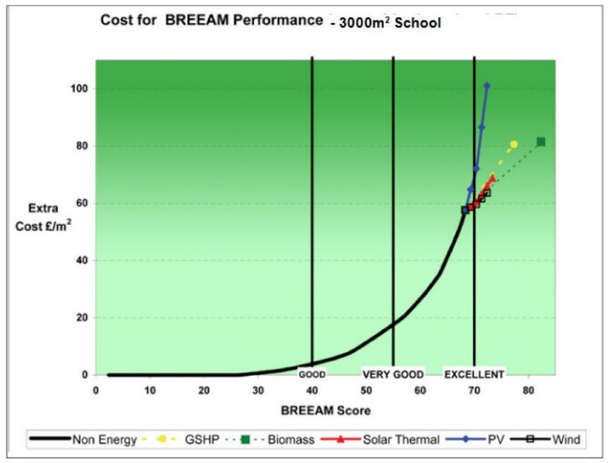
The rates above are taken from the BCIS example School project found in Appendix 4 and with the project being similar to the proposed project within this document, provides a good benchmark for predicted costs and specifications.

Appendix 1

		Quantity	Unit	BCIS Mean Rate (500-2000m²)		
	Thornhills					
1	School building (BREEAM Very Good)	2,069	m²	2337	£	4,835,253.00
2	BREEAM Uplift (9.5% excellent)			9.50%	£	459,349.04
3	External works	10,670	m²	inc		*Inc*
	Total (BREEAM Excellent)				**£**	**5,294,602.04**
4	Location indices (+0%)			0.00%		
	Adjust for abnormals					
5	Additional Surveys			Prov Sum	£	25,000.00
6	Acoustic Fence - to MUGA			Prov Sum	£	45,000.00
7	Multi-Use Games Area (MUGA) 2-3 courts			Item	£	175,000.00
8	Additional costs for Piling			Prov Sum	£	90,000.00
9	External Retaining walls and Earthwork removal			Prov Sum	£	50,000.00
10	Coal mining remedial substructure contingency					*EXC*
11	Contaminated land					*EXC*
12	Adjust for new Part L (B/Regs)			Prov Sum	£	264,730.10
13	Sprinklers (to align with BS 12845 TB221)	2,069	m²	73.95	£	153,002.55
14	Fixtures and Fittings (Inc Climbing wall)			Prov Sum	£	95,000.00
15	Furniture			Prov Sum	£	95,000.00
16	Inflation (BCIS) (5.6%) 2nd qtr 2024			5.6%	£	354,121.39
17	Contingency & optimism bias (10%)			10.00%	£	664,145.61
18	Multi-disciplinary Professional fees (13%)				£	949,728.22
19	**Total (BREEAM Excellent)**				**£**	**8,255,329.91**
20	**^Total (BREEAM Very Good)**				**£**	**7,655,810.52**

Currently the estimate includes for BREEAM 'Excellent' with a cost saving of roughly £599,519 (taking into account reduced Contingencies, Inflation etc.) available if BREEAM 'Very Good' were delivered. With the BREEAM Excellent classification various options are still to be developed and as such assumptions have had to be made therefore a VFM exercise will have to take place to justify whether the uplifts in costs are commercially viable.

Appendix 2



The cumulative cost of BREEAM credits, as an additional project cost, are shown on the Y axis for an increasing BREEAM score shown on the X axis.

Taken from 'Schools for the Future – cost of BREEAM Compliance in schools' 2008

Figure 3 | New Development Average Cost Summary							
GIFA (m²)	Gross Cost per m²		Nett Cost per m²		Cost Per Pupil Place		Sample Size
	Average	20th Percentile 80th Percentile	Average	20th Percentile 80th Percentile	Average	20th Percentile 80th Percentile	
0 - 750	£4,287	£2,860 £5,545	£2,994	£2,138 £4,133	£10,461	£4,657 £13,831	5
750 - 1,500	£3,462	£2,799 £3,988	£2,145	£1,889 £2,449	£19,655	£14,386 £23,202	18
1,500 - 2,250	£3,049	£2,701 £3,409	£1,921	£1,644 £2,109	£15,093	£11,407 £18,810	31
2,250 - 3,000	£3,228	£2,481 £3,918	£2,154	£1,737 £2,649	£19,084	£12,468 £24,305	20
3,000 - 3,750	£3,508	£3,089 £3,892	£2,256	£1,989 £2,568	£16,329	£14,838 £17,681	9
Above 3,750	£3,099	£3,099 £3,099	£1,897	£1,897 £1,897	£14,806	£14,806 £14,806	1
Whole Sample All GIFA Bands	**£3,303**	**£2,691** **£3,874**	**£2,124**	**£1,747** **£2,474**	**£16,874**	**£11,935** **£21,671**	**84**

Taken from 'National School Delivery Cost Benchmarking' 2019

Appendix 3

BCIS® RICS

£/m2 study

Description: Rate per m2 gross internal floor area for the building Cost including prelims.
Last updated: 29-Aug-2020 00:49
At 3Q2020 prices (based on a Tender Price Index of 332) and UK mean location (Location Index 100).

Maximum age of results: Default period

Building function (Maximum age of projects)	£/m² gross internal floor area						Sample
	Mean	Lowest	Lower quartiles	Median	Upper quartiles	Highest	
New build							
710. Schools							
Generally (15)	2,271	850	1,898	2,224	2,593	5,123	639
Public (15)	2,287	884	1,904	2,239	2,615	5,123	580
Private (15)	2,096	850	1,747	2,098	2,364	3,579	58
711. Nursery schools/creches							
Generally (15)	2,440	850	1,979	2,411	2,811	4,586	110
Up to 500m2 GFA (15)	2,482	1,159	2,030	2,434	2,896	4,586	88
500 to 2000m2 GFA (15)	2,230	850	1,881	2,170	2,638	3,239	21
Over 2000m2 GFA (25)	2,701	2,255	-	-	-	3,147	2
712. Primary schools							
Generally (15)	2,344	1,408	1,961	2,319	2,681	4,116	228
Up to 500m2 GFA (15)	2,569	1,436	2,261	2,507	3,045	3,506	35
500 to 2000m2 GFA (15)	2,337	1,408	1,962	2,310	2,631	3,624	96
Over 2000m2 GFA (15)	2,270	1,418	1,866	2,208	2,593	4,116	97
712.1 Middle schools (20)	1,995	1,613	1,690	1,927	2,056	2,795	6
712.12 Primary/middle schools - specialised teaching blocks (15)	1,267	891	-	1,300	-	1,574	4
712.8 Primary Schools - mixed facilities (15)	2,114	1,019	1,790	2,117	2,478	3,172	64
713. Secondary schools (high schools) (15)	2,107	1,088	1,820	2,100	2,389	5,123	65
713.1 Secondary schools - specialised teaching blocks (15)	2,213	884	1,820	2,092	2,515	4,271	51
713.8 Secondary Schools - mixed facilities (15)	1,963	1,243	1,674	2,046	2,279	2,619	33
714. Sixth form/tertiary colleges (15)	2,296	1,295	2,010	2,218	2,605	3,212	19
714.1 Sixth form specialised teaching blocks (15)	2,220	1,534	1,789	1,950	2,679	3,076	13
714.8 Sixth form - mixed facilities (15)	2,102	1,493	1,668	1,982	2,663	2,744	9

Appendix 4

Example Project – Primary School County Durham

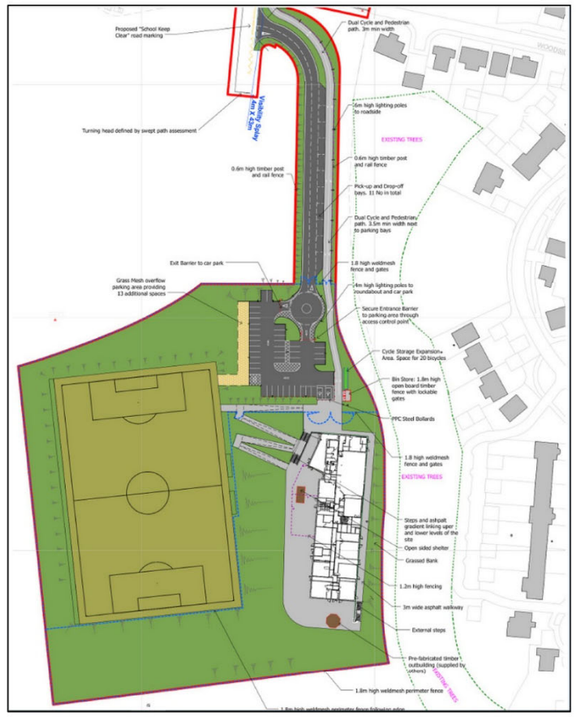
Project details: Two-storey Primary School and Nursery with external walls, including landscaping, community use grass football pitch, parking for 42 Nr cars drainage and services

Site conditions: Green field sloping site

GIFA: 2,190m²

Cost per m²: £2,337 (excluding fees and VAT)

Contract breakdown	
Measured work:	£4,395,888
Prime cost sums:	
Provisional sums:	£20,000
Preliminaries:	£649,834
Design fees:	£307,380
Risk (client's contingencies):	£52,498
Contract sum:	£5,425,600



13. BREEAM considerations

BREEAM Statement – Thornhill Primary School

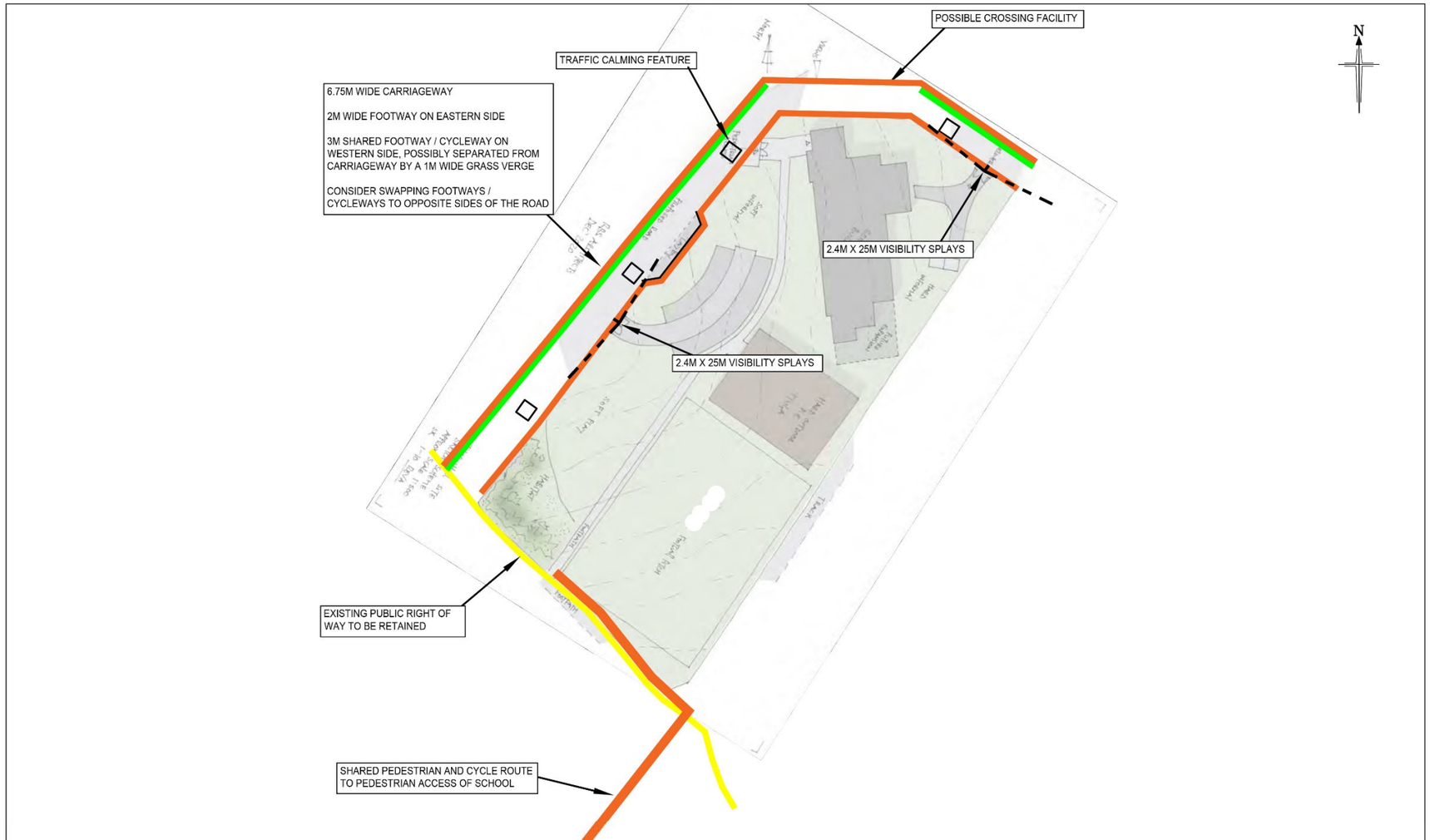
WYG have been appointed to provide BREEAM AP services for the feasibility review of the new build Thornhill Primary School in Calderdale.
The project is still at very early concept design and some of the information required to confirm the BREEAM rating are not currently available. This assessment is therefore based on the currently available site information and the designers and BREEAM Assessor experience.
The pre-assessment report provides details of the available credits and a road map to the required BREEAM rating. At this stage it would be possible to commit to most credits because the site and building is a blank canvas, however realistically these would be unlikely to be retained and credits could be lost as more information becomes available. It was felt that it would be more beneficial to identify a sensible approach to the commitments and build up the scoring as information becomes available. The current rating therefore identifies a 'Very Good' rating with the potential to increase to the 'Excellent' rating via several additional commitments.
The BREEAM requirement for the project is 'Excellent' based on a 2014 assessment rather than the current 2018 scheme. The new 2018 scheme is significantly more difficult as BREEAM strives to push the boundaries of sustainability. Whilst the 2014 scheme is no longer available the Assessor has completed a BREEAM review, under this early version, to establish what rating the scheme would have achieved. This shows that the current commitments in the 2018 tracker (62.82%) would achieve the 'Excellent' rating under 2014 (72%).
The AP input provided for the BREEAM at this stage must be continued at the next stage and through detailed design and construction to ensure the best-case rating can be achieved. There are a number of concept design actions identified in the pre-assessment which must be completed early in the next stage, where the designers want to achieve the commitment. It is recommended that these are considered strongly, particularly for the higher ratings.

See appendix for BREEAM Pre Assessment Report and BREEAM 2018 Design stage tracker

14. Highways/Transport Statement

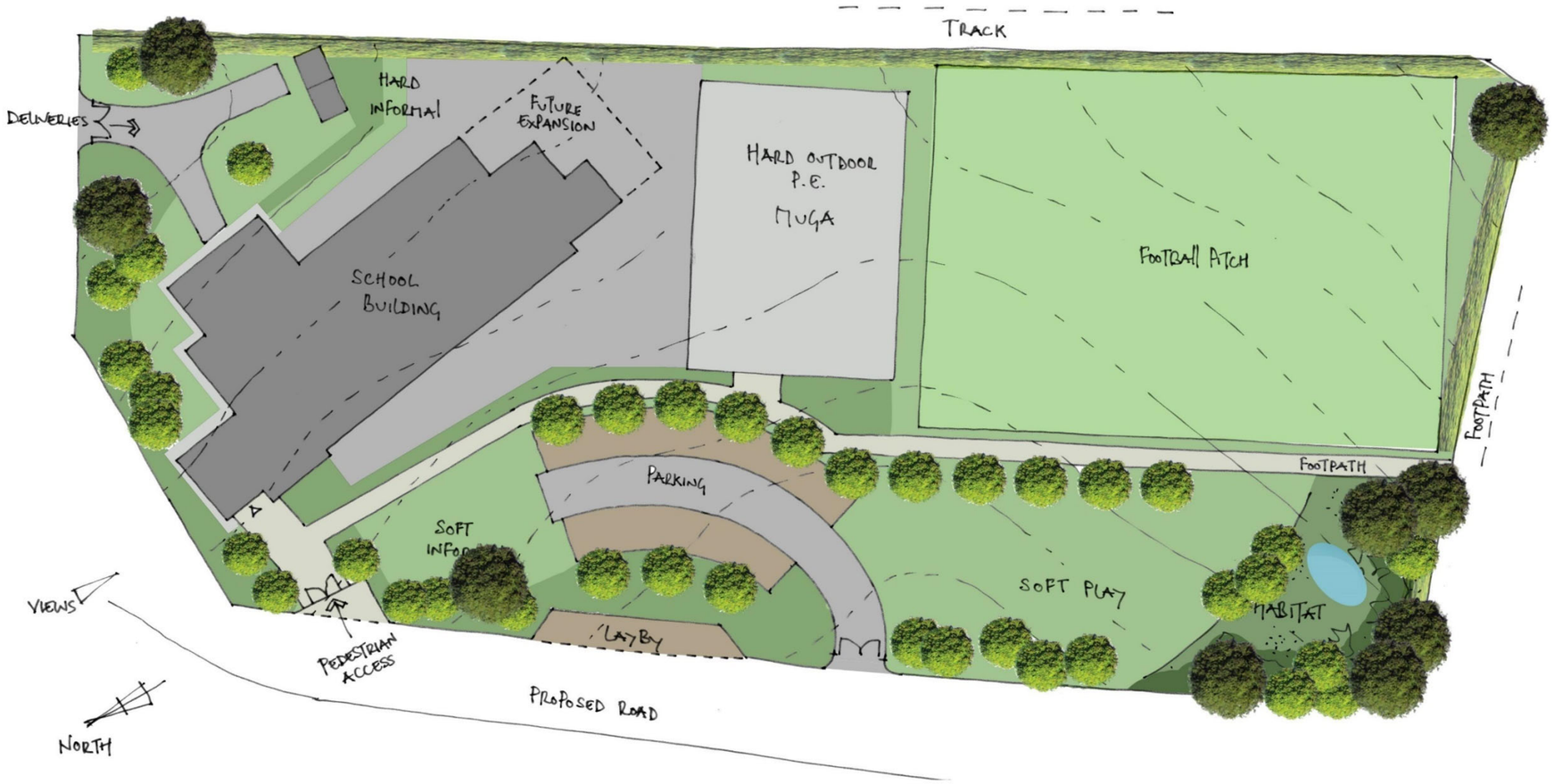
See Appendix for Transport Statement

Note: There are works which are recommended which are outside the boundaries of the site.



15. Landscape

Proposals are indicated in the attached sketch layouts.






Design Opportunities:

- Permeable surfacing to Car parking area
- Using field drains and surface run off to feed pond in habitat area.
- Using native vegetation and wildflower swathes for improved biodiversity.
- Opportunities for outdoor learning.

Calderdale Council

Thornhill – 2FE SCHOOL FEASIBILITY LANDSCAPE PROPOSALS
December 2020

JBA consulting

1 Thornhills Highmoor

1.1 Introduction

An initial feasibility option for the proposed Woodhouse school site was developed in order to ascertain the proposed site development and organisation. The proposed Landscape option considered site constraints such as topography, ecological and environmental findings and drawing on our experience of the governments building bulletin 103 and past experiences.

1.2 The Site

The Thornhills Highmoor site is situated within a proposed two garden suburbs and the proposed school site is located at the heart of the development.

It will be surrounded with Housing to the north, east and south, as well as proposed playing fields to the west.

The school site will be bound by proposed roads to the north and west.

Proposed Layout of Garden Suburb

1.3 Layout

The School building is situated to the northern corner of the proposed site to provide adequate access from the proposed road network. The building is set back from the road frontage to allow adequate screening and the possibility of providing a welcoming aspect to the entrance.

Car parking is situated along the western boundary with drop off facilities also situated on this boundary.

It is anticipated that most users will access the building from the surrounding neighbourhood and a secondary pedestrian access point is provided to the south.

The school is surrounded by hard play surfacing, allowing for good access as well as offering students the possibility to benefit of sufficient outdoor activities. With careful zoning, this area can be divided into active and quiet zones, offering a wide variety of uses.

A Multi use games area is provided to the south of the Hard play area offering sports activities to the school. This would consist of Basketball, Volleyball, Tennis as an example.

Further south, a 52x79m sized grassed sports pitch is proposed, allowing for more organised team sports and activities.

Informal soft play area is situated to the south west of the site, allowing for more quiet areas and outdoor learning facilities.

A Habitat area is situated to the south western of the site, would be designed to offer ecological benefits, as well as opportunities for the students to perform some outdoor learning. This area could incorporate a pond, being fed by field drainage and sustainable drainage features, being fed from the Sports pitch and the car park.

Diagrammatic site organisation Layout

1.4 Aspirations

Hard Play

Outdoor classrooms

Multi Games Area

Habitat Area

16. Principal Designer/CDM regulations

Consideration of the designers CDM duties were followed during these early stages. A number of the required surveys and investigations have been carried out that would be necessary under CDM 2015.

The location of the site benefits from space during construction, being within an agricultural area, although there would need to be further consideration if other contractors are on site at the same time undertaking the roads and adjacent site works.
As part of the development of the school site a Principal Designer would need to be appointed and notification made to HSE of the planned project.

The Principal Designer should become part of the design team, being consulted as necessary, and made aware of the H&S decisions that are being taken by the designers.

They should confirm that design team meetings are being held, and that Health and Safety is a specific agenda item. They should be checking to ensure that designers are considering health and safety, and that foreseeable risks are eliminated or controlled as the project progresses. Evidence that designers are doing this might include review of their Hazard Sheet or H&S notes on drawings, however this needs to be an ongoing process throughout the design stages.
Each designer has their own 'hazard management sheet' but likelihood of risks, and severity of risks should both be graded. Designers should ideally only note those risks which are unusual or particularly relevant for the project to ensure that there is clarity in the pre-construction information.
The consultant should be a member of an associated body eg. Association of Project Safety.

Guidance Document L153 is a useful reference source for the duties and regulations themselves, and also the Principal Designers Handbook, a publication by APS and RIBA jointly, along with information on the APS website, and also that of the Health & Safety Executive.

17. Procurement and delivery strategy

Consideration has been given to alternative forms of procurement: traditional and design and build.
The project could go down a **Traditional Contract** route where the client will appoint the Design Team to design the preferred option. The contractor will then be appointed under a lump sum construction contract which will have penalties for late completion. This form of contract would suit circumstances where changes may be required through the design process as a result of unforeseen works and would provide the client with more certainty over design and product specification.

This option would require more up front design time as the more details which are fixed, and the fewer variations instructed after the contract is signed, will provide better cost certainty for the client. Areas which are not fully concluded prior to entering into contract will open the client up to potential additional costs which may be higher than if covered in the tendering process. The contract needs to ensure there are no areas of ambiguity as to what is design/fabrication information and who is contractually liable for providing this. Any areas where the design/specification require input from specialist suppliers such as curtain walling/windows/rainscreen cladding//mechanical & electrical systems should be included within the Contractors Design Portion as necessary. This option requires more certainty about unforeseen elements and requires sufficient survey information to be carried out prior to the design and tender process to enable elements of the below ground/site works to be detailed and tendered, for example surface water, pitch and foul drainage design.

Alternatively the contract could be awarded through one of the many variations of **Design and Build Contracts** in which the main contractor will be appointed to design and construct the works. This would provide the client with a single point of responsibility for delivering the project however this form of contract is generally not seen as appropriate for more complex projects or projects where design quality is seen as a key consideration. Using this form of contract may well result in higher tenders as the Contractor needs to ensure that all eventualities are covered however this would provide the client with more cost certainty.

From the above comments it is felt that traditional form of procurement would be the best option, utilising a form of contract such as JCT or NEC. In this case it is felt that JCT Standard Form of contract with Quantities, which would include elements of contractor design, would be appropriate.

18. Method of construction/buildability appraisal

Another option to consider would be going for a **modular/ volumetric form** of construction. This would have the benefit of a reduced time on site which would minimise disturbance in terms of noise and time. It could however also restrict the flexibility and be limiting due to modular size and access and is limiting in terms of design and aesthetics. If the decision is made to investigate/go down this route it will be necessary to decide which manufacturer's system to use early as they each have individual components sizes and restrictions. This requirement to design to pre-determined individual manufacturer's sizes reduces the flexibility of tendering a design and can therefore inflate costs. On this school scheme a significant element of the cost will be the below ground and site works and it will need to be determined quickly who has responsibility for this. i.e. will the modular contractor carryout these works and take on the liability or will a main contractor appoint the modular contractor.

It is felt, in this case, the advantages for using this type of construction are not appropriate for this site.
As a green field site, access is not restricted or limited. Timescale is reasonably flexible rather than very tight. Cost is likely to be higher using modular building without achieving the benefits of this method of construction.

19. Outline Construction Programme

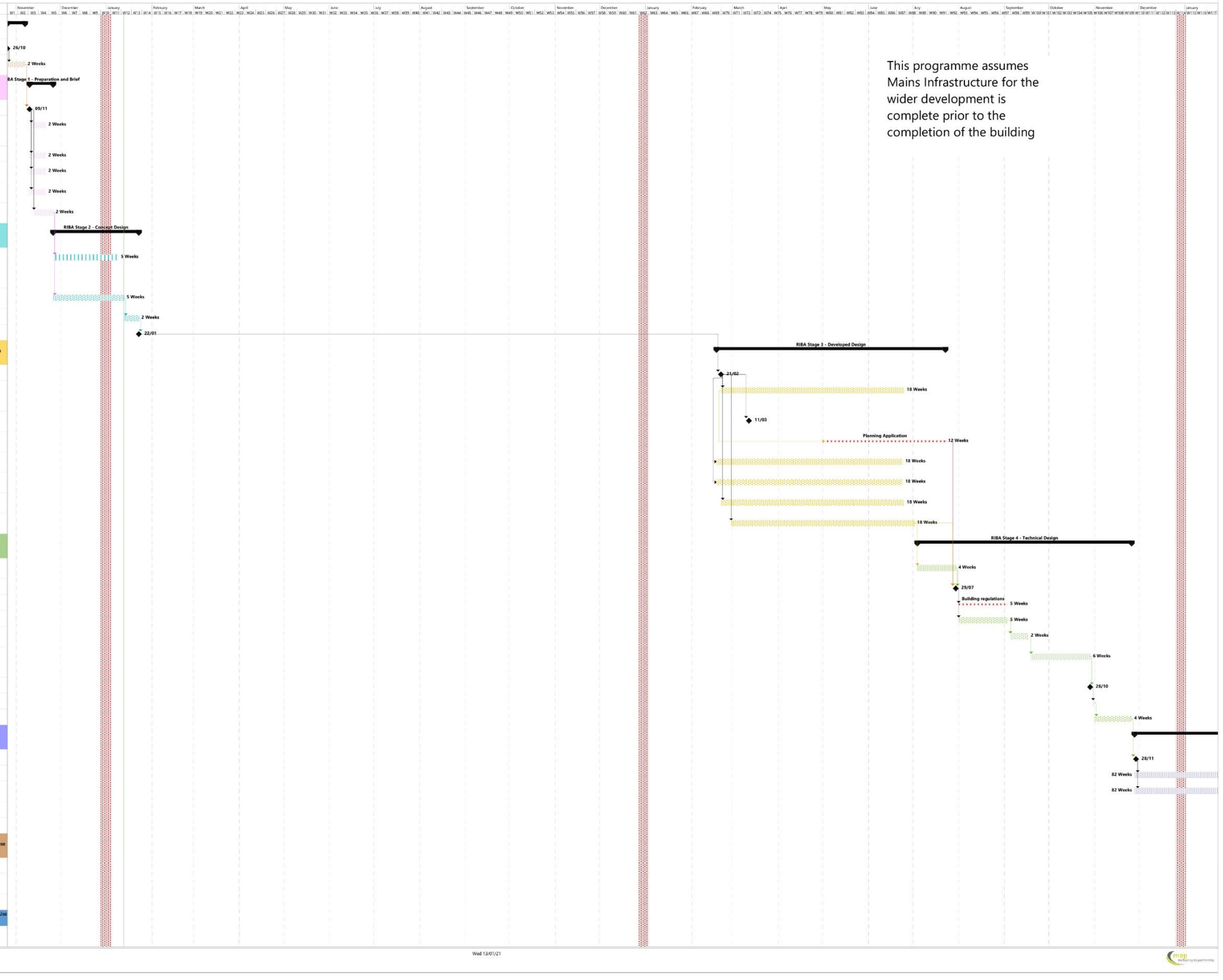
The brief indicated completion and occupation of the schools by 2024. A programme has been drafted based on traditional procurement. An assumption has been based on timescale to get the project initiated and approved and some allowances have been made during the programme for cabinet approvals. The contract period has been drafted to allow some slack/or contingency.

Note:

The progressions of the garden suburb has not been taken into account although it would be necessary for infrastructure to be brought to site before the school building could be completed and handed over.

South East Calderdale - Thornhills

ID	Task Name	Start	Finish	Text1
1	**RIBA Stage 0 - Strategic Definition**	**Mon 26/10/20**	**Fri 06/11/20**	
2	Design Team Appointed	Mon 26/10/20	Mon 26/10/20	
3	Design Team Undertakes various roles	Mon 26/10/20	Fri 06/11/20	2 Weeks
4	**RIBA Stage 1 - Preparation and Brief**	**Mon 09/11/20**	**Wed 25/11/20**	**RIBA Stage 1 - Preparation and Brief**
5	Initial design meeting	Mon 09/11/20	Mon 09/11/20	
6	Initial PM & Principle Designer survey and feasibility study assessments	Tue 10/11/20	Fri 20/11/20	2 Weeks
7	Initial M & E engineer survey	Tue 10/11/20	Fri 20/11/20	2 Weeks
8	Initial Structural engineer survey	Tue 10/11/20	Fri 20/11/20	2 Weeks
9	Initial BREEAM Consultant survey	Tue 10/11/20	Fri 20/11/20	2 Weeks
10	Initial Quantity Surveyor Cost review	Fri 13/11/20	Wed 25/11/20	2 Weeks
11	**RIBA Stage 2 - Concept Design**	**Thu 26/11/20**	**Fri 22/01/21**	**RIBA Stage 2 - Concept Design**
12	Carry out site surveys - Site investigations, Ecological Appraisal, Tree survey & Traffic assessment	Thu 26/11/20	Fri 08/01/21	5 Weeks
13	Project team develops Primary Schools 1 & 2	Thu 26/11/20	Tue 12/01/21	5 Weeks
14	Report produced	Wed 13/01/21	Fri 22/01/21	2 Weeks
15	Commission completion	Fri 22/01/21	Fri 22/01/21	
16	**RIBA Stage 3 - Developed Design**	**Fri 18/02/22**	**Fri 22/07/22**	**RIBA Stage 3 - Developed Design**
17	Commence Developed Design	Mon 21/02/22	Mon 21/02/22	
18	Architects Developed Design in association with BREEAM Consultant	Mon 21/02/22	Fri 24/06/22	18 Weeks
19	Attendance at stage review meeting with stakeholders	Fri 11/03/22	Fri 11/03/22	
20	Prepare Planning application documents	Mon 02/05/22	Fri 22/07/22	12 Weeks
21	Structural Engineers Developed Design	Fri 18/02/22	Thu 23/06/22	18 Weeks
22	M & E Engineer Developed Design	Fri 18/02/22	Thu 23/06/22	18 Weeks
23	Landscape Architect Developed Design	Mon 21/02/22	Fri 24/06/22	18 Weeks
24	Quantity Surveyor prepare final cost plan	Mon 28/02/22	Fri 01/07/22	18 Weeks
25	**RIBA Stage 4 - Technical Design**	**Mon 04/07/22**	**Fri 25/11/22**	**RIBA Stage 4 - Technical Design**
26	Prepare Specification & tender documents	Mon 04/07/22	Fri 29/07/22	4 Weeks
27	Out to Tender	Fri 29/07/22	Fri 29/07/22	
28	Building regulations	Mon 01/08/22	Fri 02/09/22	5 Weeks
29	Tender period	Mon 01/08/22	Fri 02/09/22	5 Weeks
30	Quantity Surveyor prepares Tender report	Mon 05/09/22	Fri 16/09/22	2 Weeks
31	Tender Adjudication including final funding approvals	Mon 19/09/22	Fri 28/10/22	6 Weeks
32	Appoint Main Contractor	Fri 28/10/22	Fri 28/10/22	
33	Pre-Start meeting	Mon 31/10/22	Mon 31/10/22	
34	Lead In Period	Tue 01/11/22	Fri 25/11/22	4 Weeks
35	**RIBA Stage 5 - Construction**	**Mon 28/11/22**	**Fri 19/07/24**	**RIBA Stage 5 - Construction**
36	Commencement on Site	Mon 28/11/22	Mon 28/11/22	
37	Thornhills Construction Work	Mon 28/11/22	Fri 12/07/24	82 Weeks
38	Woodhouse Construction Work	Mon 28/11/22	Fri 12/07/24	82 Weeks
39	Snagging works	Mon 15/07/24	Fri 19/07/24	
40	Project Completion	Fri 12/07/24	Fri 12/07/24	
41	**RIBA Stage 6 - Handover and Close**	**Fri 12/07/24**	**Fri 13/06/25**	**RIBA Stage 6 - Handover and Close**
42	Project Handover meeting	Fri 12/07/24	Fri 12/07/24	
43	Quantity Surveyor settles final account	Mon 15/07/24	Fri 26/07/24	2 Weeks
44	12 months defects period	Mon 15/07/24	Fri 13/06/25	12 Months
45	**RIBA Stage 7 - In Use**	**Fri 26/07/24**	**Fri 26/07/24**	**RIBA Stage 7 - In Use**
46	Post - completion project evaluation meeting	Fri 26/07/24	Fri 26/07/24	



This programme assumes Mains Infrastructure for the wider development is complete prior to the completion of the building

20. Risk management Register

A Risk Register was produced at the start of the feasibility study. This has been reviewed periodically during the project and those entries on the register monitored and addressed as far as possible. There are a number of entries which will remain a risk for some time during the development of the project and therefore they are still on the Register. Additional entries can be inserted at the detail stages of design.

KEY:
Key/ Critical
Intermediate
Minor

Calderdale Council

South East Calderdale - Feasibility Study for Two New Primary School Buildings (2FE)

RISK IDENTIFICATION & MITIGATION					RISK ASSESSMENT - RESIDUAL RISK					ACTION PLAN - RESIDUAL RISK					COMMENTS
Ref	Category	Risk	Potential Impact	Completed Mitigation Action (to date)	Problty.	Impact	Risk Score/ Category	Cost Impact (Project Costs) [£K]	Schedule Impact [weeks]	Action Plan	Action Owner	Next Action Target Date	Date Achieved	Risk Owner	
1	Employer	Sign-off by Users and Duty Holders leads to design changes	Possible redesign and abortive design fees. Delays to project.		1	3	3			Any amendments to the design will be tracked via the change process.	**Design team / PM / Contractor**	Ongoing		Calderdale Council	
2	Employer	Changes to brief and/ or scope of works	Agreed strategies and plans require review and amendment. Cost and time implications		1	3	3			Project Reviews implemented to predict and mitigate potential changes	**Design team / PM / Contractor**	Ongoing		Calderdale Council	
3	Employer	Changes to Employer team	Delay to the project.		2	2	4			Agree in advance who would pick up work should such an event occur.	**Calderdale Council**	Ongoing		Calderdale Council	
4	Employer	Cabinet decision being reversed	Project is delayed or abandoned.		1	3	3			Monitor the situation and liaise with cabinet regarding any decision made to provide additional and further information as required and review the project particulars, as necessary.		Ongoing		Calderdale Council	
5	Employer	Planning Approval delayed / not granted	Planning approval determination delayed or approval rejected resulting in delay to project programme and costs.		2	2	4			Liaise closely with the LA planning department.	**Calderdale Council**	Ongoing		Calderdale Council	
6	Design	The project may fail to achieve BREEAM Excellent rating due to potential additional costs required to achieve excellent, such as implementing renewable technologies	BREEAM Excellent rating not being achieved. Potential additional resource and time associated with review to try and achieve BREEAM Excellent rating. This may have cost implications.		1	2	2			Undertake BREEAM Pre Assessment during RIBA Stage 2 and determine an outline design philosophy and to engage with the Employer during the early stage. The Design Team need to engage closely with the Employer. The Design Team should include members/specialists in BREEAM with the requisite skills and experience.	**Design team / PM / Contractor**	Ongoing		Calderdale Council	
7	Employer	Change in Standards/ Regulations	Re-design or rework due to change in standards and/or regulations - potential programme delay and additional costs.		1	2	2			Close monitoring to ensure latest building regs and design standards are adhered to	**Design team**	Ongoing		Calderdale Council	
8	Services	Existing Services Information	Existing services information not available or up to date.		2	1	2			Employer to issue existing site information and Utility Survey to be undertaken.	**Calderdale Council**	Ongoing		Calderdale Council	
9	Design	Access delays - a risk of access delays to site for surveys/visits/inspections	Delay to programme		1	2	2			All parties to work closely and ensure landowners/stakeholders are informed in advance of any specific visits/inspections/surveys. Agree a delivery strategy with Contractor prior to construction phase.	**Design team / PM / Calderdale Council / Contractor**	Ongoing		Calderdale Council	
10	Employer	Risk of funding allocation due to council/government spending reviews	Funding not granted resulting in increased costs and programme impact with project being deferred or even cancelled.		1	3	3					Ongoing		Calderdale Council	
11	Design	Environment Agency demand excessive remediation measures if the sites are located on flood plains.	Increase in the build cost.		2	3	2			Early liaison with the LPA and EA to ascertain requirements. Design Team to liaise with the EA and keep up to date with the latest standards, keeping concise records of all requirements/standards agreed upon.	**Design team / PM / Contractor**	Ongoing		Calderdale Council	
12	Employer/design	Identifying site area	Area for site is not covered	Obtain CAD infomration and exact location	2	2	2			confirm from CAD plans.	**Calderdale Council**	Ongoing		Calderdale Council	
13	Employer	Availbility stakeholders for meetings	Decisions delayed	Set out schedule at outset	2	2	2			Meeting dates set out	**Design team**	Ongoing		RBS	
14	Employer	Adverse publicity	difficulties for council	clarification on confidentiality at outset	1	3	3			Clarity received	**Design team**	ongoing		Calderdale Council	
15	Design	Obtaining information from external bodeis eg flood	Delay completion of study	Early contact to be made	1	2	2			ealry contact to be made	**Design team**	onging		JBA	
16	Design	Coordination of information	Incomplete or missing information	Schedule requirements	1	2	2			list provided at tender stage to be followed and reviewed at meetings.	**Design team**	Ongoing		RBS	
	Employer	Local plan not being favouable for development	scheme aborted	Await information			6				**Employer**	ongoing		Calderdale Council	

21. Conclusion

The Thornhills site is located in a proposed garden suburb. The investigations carried out by this study has not identified any issues that would prevent progressing with its development. There are of course issues outside the scope of the study that will still need to be addressed, including and most importantly, availability of site and budget allocation etc.
Further investigation of ground conditions will need to be undertaken although an allowance has been included in the cost plan for abnormals not yet discovered.

The site does allow for some future proofing and flexibility.
The cost plan indicates budgets a little below benchmarking information, however this can be impacted considerably if BREEAM excellent is to be achieved. Given that the standards have been elevated, it might appear reasonable to target a very good rating instead.
Environmental measures have been included where cost benefit is felt to be a reasonable assumption at this early stage.
Although piling has been indicated this may not be necessary once further site investigation has been carried out.

It is important that those highways measures suggested by the Highways consultant, which are external to the site boundary, are passed on to the developer of the garden suburb, so that they can be incorporated as part of their works. All infrastructure and services are assumed to be brought to the site boundary by the developer.
It is understood that new spine roads for the Garden Suburb developments should be well advanced to facilitate access for the construction of the schools, however, in the circumstances that they are not, temporary haul roads could be provided by others. However these are not included for in costs provided.

Next Steps
Should the project be progressed, a full team of consultants should be appointed, and the design should be further developed by interrogating the proposals within this study to ensure that a fully co-ordinated and cost checked design is produced, in terms of architectural intention, structural rationale, and mechanical/electrical strategy, prior to the submission of a detailed Planning Application. The following information will be required during Stage 3 and ready to accompany the planning application:

- Detailed site investigation for relevant areas (Phase II including bore holes)
- Further consultation, such as; Planning, Building Control, etc.

Possible early Contractor engagement/input into the deliverability of the scheme might be of benefit.

Appendices

Arboricultural Survey

Ecological Survey (P.E.A)

Geo environmental Report

Services:

- MEPS Feasibility Report
- LZC Technologies Feasibility Assessment

BREEAM Pre-Assessment Report

- BREEAM 2018 Design Stage Tracker

Highways/Transport Report

Building Control attachments

JBA Consulting
Salts Mill
Victoria Road
Saltaire
Shipley
BD18 3LF
Telephone: +441274714269
www.jbaconsulting.com

Rance Booth Smith Architects
11 Victoria Road
Saltaire
Shipley
BD183LA

01274 587327
saltaire@rbsarchitects.co.uk
www.rbsarchitects.co.uk