



ATKINS



The Centre for Research and Engagement
for Arts & Technology in Education (CREATE)
Milestone One Report

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October 2016

Centre for Research and Engagement for Arts & Technology in Education

Cambridgeshire County Council

Milestone One Report

Notice

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1.0 Introduction

01

Site Details : St Luke’s Barn

Site Location: **St Luke’s Barn, St Luke’s CofE Primary School**
Address: French’s Road
Cambridge
CB4 3JZ
Tel: 01223 566879 (St Luke’s CofE Primary School)
Site Email: office@stlukes.cambs.sch.uk
Client Contact: Mr. Matthew Gunn
Client Email: matthew.gunn@cambridgeshire.gov.uk

Rationale for Project

Changes in Arts Education

Over the last decade the formal education system has been changing rapidly. The creation of academies, chains of schools collaborating, teaching alliances and adjustments to National Curriculum has led to changes in arts education practice and levels of support and as a result, new opportunities.

Institutions are considering how curriculum art and cultural education is accommodated in innovative ways. Community needs are for participatory activities in groups and individual skill development outside of formal education.

Changes in demand, need and available funding mean that provision needs to accommodate informal and formal learning mechanisms achieving the same level of quality of delivery and experience.

Partnership working is vital to developing long-term sustainable arts education practice and engaging busy organisations and schools to ensure this is not marginalised by other priorities.

Support for arts education in the traditional “heritage” infrastructure can be eroded by economic pressures and fragmented education systems. Creating a facility with a specific focus will stabilise the access to creative learning that may be affected.

It is anticipated that other opportunities will present themselves during the course of development as more supporters engage with the development.

Feasibility Study for Cambridgeshire Music, Cambridgeshire County Council

This Milestone One Report has been undertaken in relation to the site and surroundings of the St Luke’s Community Barn adjacent to St Luke’s Primary School, French’s Road, Cambridge.

The study aims determine and provide estimated costs for creation of the facility, either:

- By renovating and converting the existing property
- By demolishing and new build.

In particular the study will investigate the difference in the two approaches and the potential benefits of new build in meeting the specification for the new facility.

Building Scope

The centre would need to include a degree of the following facilities:

- Office facilities, reception and waiting areas including network access, wireless provision, internet streaming, alarm and camera systems, reprographics and storage.
- Resource Storage facilities e.g. for instrument stock, workshop area for repairs and management.
- Arts/Music Sets collection storage
- Multi-use and sized spaces with appropriate acoustic treatments for tuition, meetings, recording from small group tuition size to full symphony orchestra size, including dedicated spaces appropriate for percussion, music therapy, music technology and recording and dance/drama, with streaming and recording network connections and audio-visual equipment.
- Ancillary facilities potentially including toilets, cleaning storage, staff area, café or shop or vending machine area, parking and access sufficient for vans up to Luton size, nearby drop off and pick up points, pedestrian access, security and disabled access requirements including if required lifts and audio loops.

These elements have all been identified as needs for arts development, county and community arts organisation and structures for supporting the technology integration into the arts education work.

Future Requirements

Further information will be required in respect of the following items, prior to commencement of an outline design proposal to Milestone Two.

- Consultation with the relevant Planning Authority
- Consultation with the relevant Highways Authority.
- Site and soil investigation
- Detailed structural survey of the existing building
- Alignment with CCC Sustainability Agenda
- Community Consultation

Design Team

The following team members have been appointed to carry out the Feasibility Study:

Faithful + Gould
Project Management
Cost Management

Atkins
Architecture
Landscape Architecture
MEPH
Acoustician

2.0 Executive Summary

Purpose of Report

This report has been prepared for Cambridgeshire County Council to test the feasibility of St Luke's Barn accommodating the Centre for Research and Engagement for Arts & Technology in Education (CREATE). The report will investigate remodelled/refurbished and a new build option of the site of the existing Barn.

Scope of Report

The scope of the Milestone One report is simply to confirm if the site and existing building is able to physically accommodate the accommodation required for the Centre for Research and Engagement for Arts & Technology in Education. As such, it stops short of a concept design study and should the project progress, then further study and consultation would be required. This would develop the plan of the building and adjacencies of spaces and assess how to resolve some of the more complex issues to do with expanding the existing accommodation.

The report looks at two building options:

1. Remodelled/refurbished development of the existing Barn
2. Demolition of the existing Barn and a new build Centre

The report looks at three landscaping options:

1. Improvements to existing school access from French's Drive
2. New access from Chesterton Mill (Private Road)
3. New access from Rackham Close

Brief

Following consultation with the Stakeholders the model net area required for the building totals 1,063m². The total GIA of the existing building is 650m² over two floors. A summary of the brief and external area requirements is included within Section 5.1. Acoustic requirements are summarised in Appendix A.

Option 1 (Preferred Option)

Remodelled/refurbished development of the existing Barn.

Option 1 accommodates the required area over three floors. The total GIA of the proposed option equals 1,239m². This comprises 883m² of remodelled area (existing Barn) and 356m² of new build area. To accommodate the area the existing barn has been lengthen by 5.2m to the rear and 6m to the front elevations.

Option 2

New Build development of the existing Barn site.

Option 2 accommodates the required area over three floors. The total GIA of the proposed option equals 1,169m².

Both options differ slightly from the model brief depending on layout and configuration of the spaces provided. Layouts are provided in Section 5.2 and 5.3.

Option 1 Landscaping

Retain and widen existing access off French's Road.

(Widening has been suggested for all options).

This option retains and widens the existing school access road and is detailed in section 6.4.

Option 2 Landscaping

Provide new access off Chesterton Mill (private road).

This option provides a new access road off Chesterton Mill, a private road to the rear of the Barn and is detailed in section 6.5.

Option 3 Landscaping

Provide new access off Rackham Close.

This option provides a new access road off Rackham Close and is detailed in section 6.6.

Options two and three explore alternative routes into the site. Both options require the loss of existing playing field which does not comply with the latest Sport England guidance and will likely face objection. Further guidance with CCC Highways Department, input from a highways engineer and transport consultant will be required at the next stage should the site be deemed appropriate.

On all options additional car parking is proposed increasing capacity beyond 40no.. spaces including Blue Badge parking. Additional cycle parking is also provided increasing numbers by minimum 50no. spaces.

Risks

All known risks have been identified as far as possible within the Risk Register in Section 10.0. Prior to any further design it is recommended that a risk workshop be carried out with all relevant parties to identify any further risks that may impact on the development proposals.

Programme

A programme for each option is indicated in Section 10.0.

Planning

At present no consultations have been carried out with Cambridgeshire County Council Planning Department. It is recommended that consultation with the local planning authority and Highways Department be undertaken prior to the next milestone of the project.

Archaeological

No Archaeological surveys were carried out for this Milestone Report.

Conservation Area

Investigations by the team suggest that the St Luke's Barn site is

not within a Conservation Area. There are no listed buildings whose curtilage borders the site (see Section 3.2).

Highways

Cambridgeshire County Council Highways Department have not been consulted in the development of this Milestone One study. Consultation should occur before any further design work is undertaken.

Acoustic Design

An Acoustic assessment was made of the requirements for the new/refurbished building and this is illustrated in section 7.0.

MEP Assessment

An MEP assessment was made of the existing building and this is illustrated in section 8.0.

Sustainable Design

A Technical Note covering the Sustainability requirements for the refurbished building (Option 1) has been carried out and this is illustrated in section 9.0.

Cost

Cost reports have been prepared for each Option. As with all costings prepared at this stage of a project, they are based on limited available information and will be subject to refinement as the project progresses through the subsequent stages.

The total anticipated project costs for each option are as follows:

Remodelled Option 1 £3,541,000.00 (preferred option)

New Build Option 2 £4,556,000.00

The additional cost to the overall project value to utilise Landscape Option 2 instead (new access road from Rackham Close) is £ 80,000.00

The additional cost to the overall project value to utilise Landscape Option 3 instead (new access road from Chesterton Mill) is £ 20,000.00

Summary

In summary, it has been concluded that the site can accommodate the accommodation required by the Centre for Research and Engagement for Arts & Technology in Education (CREATE) in either a remodelled or new build option. Due to constraints it is recommended that the access options indicated in Section 6.0 be developed further during Milestone two, in conjunction with Cambridgeshire County Council Highways department before a preferred option is chosen.

Background to the Project

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



3.1 Site Overview

03

Cambridgeshire

Cambridgeshire County is located in the South East of England bordering Lincolnshire to the North, Norfolk to the Northeast, Suffolk to the East, Essex and Hertfordshire to the South, and Bedfordshire and Northamptonshire to the west. Formed from the historic counties of Cambridgeshire, Huntingdonshire and Fenland. It is the 28th largest authority in England by population. Cambridgeshire has 201 primary schools, 30 secondary schools and 8 SEN schools. Maple Grove Infants School is located in the town of March.

The site

St Luke's C of E Primary School is located to the north of the city centre of Cambridge. The main pedestrian and vehicular access is from French's Road which is accessed from Victoria Road. The School shares this access arrangement with the adjacent residential area.

Conservation area

The Castle and Victoria Road Conservation Area includes the area bounded by Northampton Street, Chesterton Lane and Chesterton Road in the south and Madingley Road, Mount Pleasant and Huntingdon Road to the west. The northern edge is Oxford Road and the streets off the north side of Victoria Road, including the southern section of Histon Road.

The area is bounded by the Historic Core Conservation Area to the south, Storey's Way Conservation Area to the northwest, and the West Cambridge Conservation Area to the west.

The Conservation Area comprises the Roman settlement and Norman Castle with a huddle of small streets off Castle Street. It also includes the 19th century residential terraced streets south of Victoria Road to Chesterton Road, Victoria Park estate to the north, Histon Road cemetery and the streets around it, and the Edwardian development north-east of Huntingdon Road. There is an area of modern office development at the top of Castle Street to the rear of Shire Hall.

The Conservation Area is an intensely urban area, heavily built-up with housing and offices, with good provision of pubs and churches but an unfortunate lack of shops and cafes. For historic reasons, it has small open green spaces of great character and historic interest (e.g. Castle Mound, churchyards of St Peter's, St Giles' and St Luke's, Histon Road Cemetery), but Alexandra Gardens, Histon Road Recreation Ground and Shelly Gardens are the only parks maintained for recreation (although proximity to Jesus Green and Midsummer Common make this less significant than it otherwise might be). Practically the whole area was either farmland in the Middle Ages or, being royal land, was deliberately kept clear of settlement to protect the defensive value of the castle. This pattern continued well after the Enclosure of the parish of Chesterton in 1840.



01. Map of the British Isles

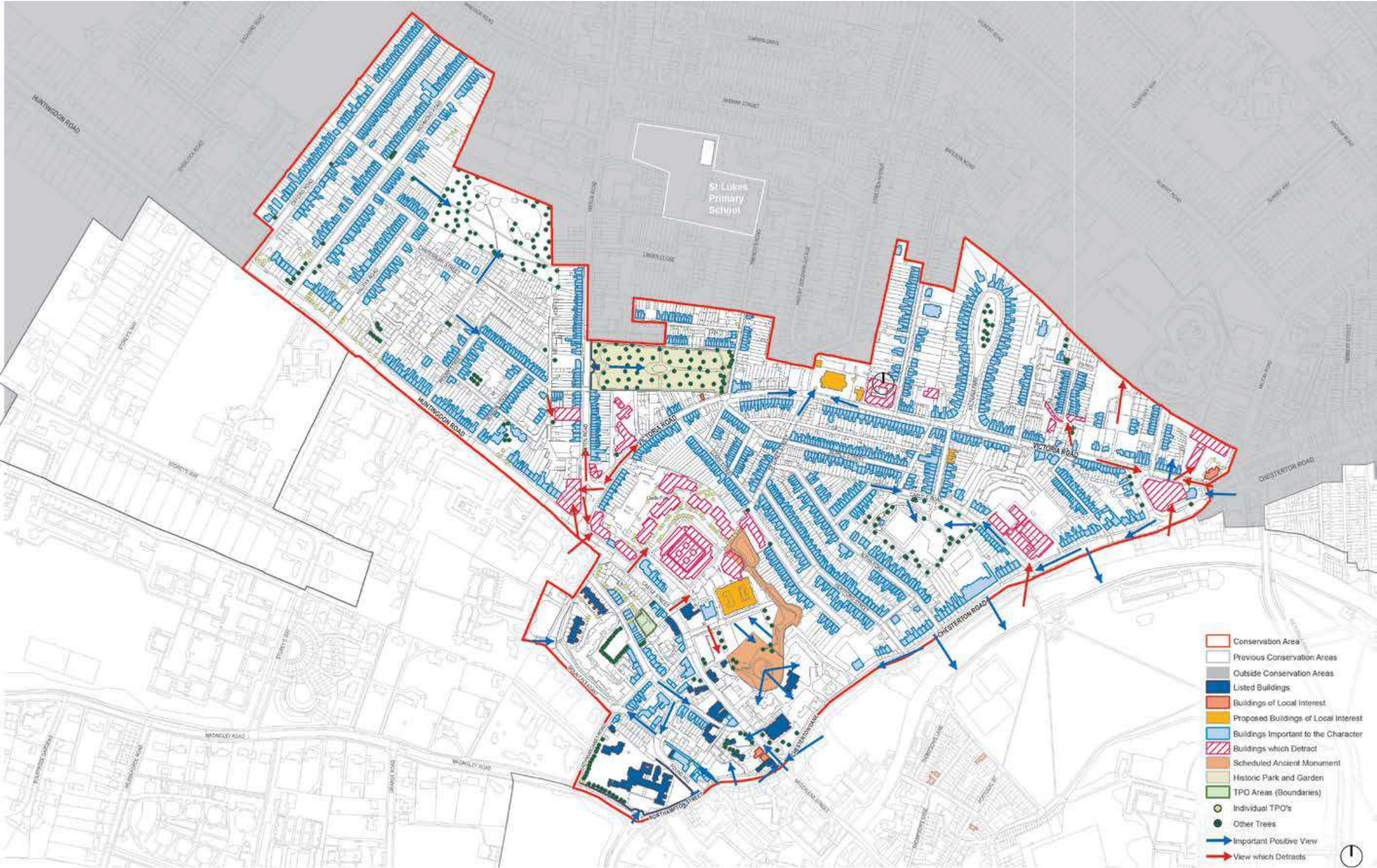


02. Map of Cambridgeshire County



03. Site aerial view

3.2 Conservation Areas



Castle and Victoria Rd Conservation Area

3.3 Site Connectivity & Flood Risk



Site Connectivity

St Luke's C of E Primary School is located within a residential district of Cambridge, approximately 0.5 miles north of Cambridge city centre.

Surrounding dwellings are a mixture two storey detached houses and two storey semi-detached houses. Most of dwellings include a drive and front and back gardens. Facing materials are generally either brick or render to external walls and either clay, slate or concrete tiles to roofs.

The school shares its only access driveway from French's Road with this adjacent residential area. Being surrounded only by secondary roads, an additional pedestrian and vehicular access is proposed in order to connect the site with Histon Road (B1049) which leads to the city centre. In addition, this main road comprises the nearest bus stops and considers a cycle route.

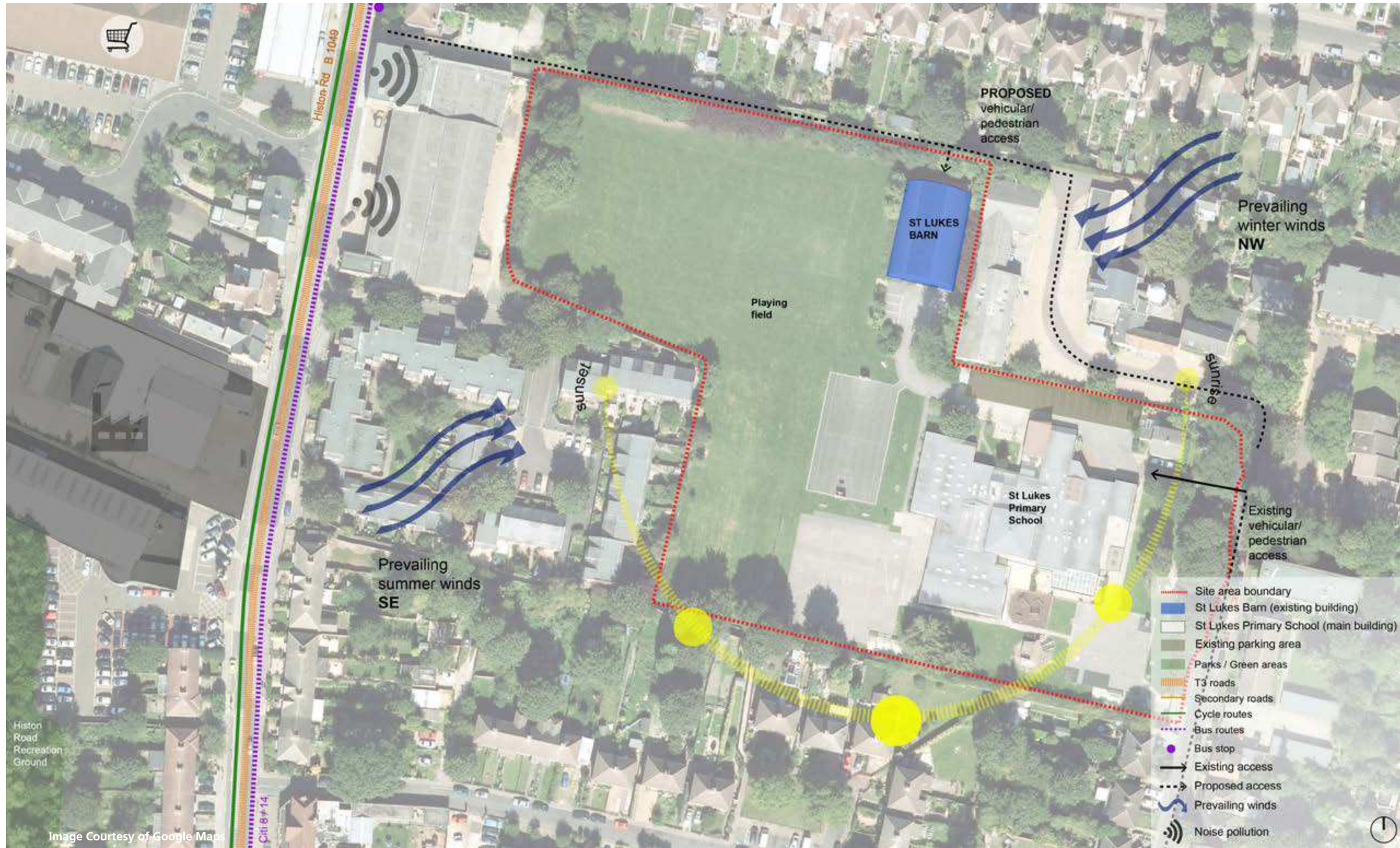
A lack of bus routes in the proximity of the site has been identified, apart from the ones located in Histon Rd (Citi 8 and 14)

Flood Risk

Based on information from Environment Agency Flood Map, the site is outside the flood plain.

However, since the maps only cover flooding from rivers and the sea, it should be considered that flooding can occur at any time and in any place from sources such as rising ground water levels, burst water mains, road drains.

3.4 Site Analysis



Site Environmental Analysis

Due to its central location within a residential area, the site is surrounded by existing buildings and trees, thus it is protected from prevailing winds throughout the year.

Additionally, the absence of any massive built form and open nature of the south-western site area provide good solar access during the day. With daylight being one of the main factors to consider when designing educational buildings, further solar studies could be considered.

The adjacent open field will allow the building to benefit from good levels of natural ventilation and daylight, while the existing houses located on the east boundary will act as winter winds barrier.

As it can be seen from the location map and site views, adjacent to the west boundary of the site there is an existing green barrier, made of leafy trees, which acts as a buffer space, mitigating the traffic noise effect coming from Histon Road.

The Existing Site

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



4.1 The Existing Site - Aerial View

04

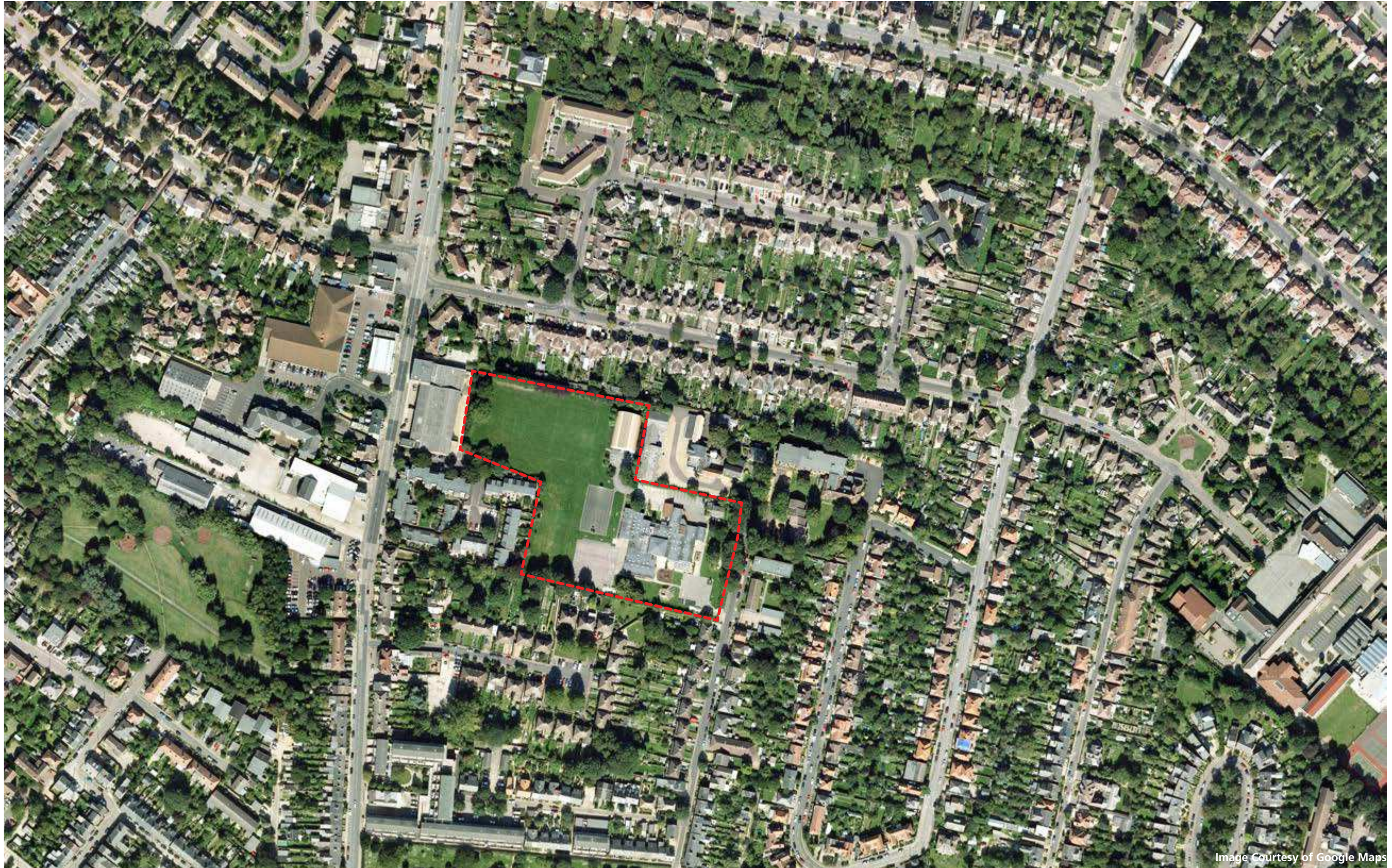


Image Courtesy of Google Maps

04. Site aerial view

----- St Luke's CofE Primary School Site

4.2 The Existing Site - Current Building & Site

Current Use

St Luke's Barn is currently used as a community sports facility with a first floor community room. The building sits on land within St Luke's Primary School site on land owned by the County Council. It is accessed over land owned by the Trustees of the Church Schools of Cambridge. The building is currently being operated by the Governing Body of St Luke's C of E Primary School under a tenancy at will whilst long-term options for the building are being investigated. Current client groups using St Luke's Barn include:

- University Badminton Club
- Bottisham Badminton Club
- Community arts events
- Cambridge Islamic Youth Project - Asian Boys Groups
- St Luke's School children

There are a number of sports and community facilities within close proximity to the barn. There is a hall within St Luke's School that the community can use in the evenings and during school holidays. St Luke's Church Centre has a range of halls and rooms for hire and Chesterton Sports Centre off of Gilbert Road has a swimming pool, tennis courts and a hall used for activities such as badminton, basket ball and football. The University will soon be opening new sports facilities in West Cambridge.

Land and Building Ownership and Position

The building and land including adjacent green recreation areas for the primary school are owned by Cambridgeshire County Council, the building having reverted to their management at the end of City Council operation. Current access routes to the Barn via the main school site gates. Additional parking and access improvement to the site would be required to meet the needs of the new building and indirectly would benefit the residents of French's Road by reducing the on-street parking issues that can occur currently. Agreement will be required to improve and develop the access and parking on a shared basis.

There is interest in continued local community group and primary school usage of spaces in the Barn as it currently operates going forward. Use of the building by third party groups will need to be

documented in the appropriate manner. Similarly there would be a benefit to the centre in having access to the green spaces on occasion and the school indicates that this would be feasible.

Although near to residential areas there do not appear to be major light, air or sound considerations that would change as a result of the process although consideration of traffic levels and access should be made, particularly during any period of construction work should the project proceed.

Building condition

Visual inspection of the building does not appear to indicate major structural issues, however clearance of some of the overgrown areas around the building would be needed prior to a fuller inspection.

A previous survey by the City Council to bring the building maintenance up to standard indicated that significant repair would be required to elements of the roof.

It is recommended that a further condition survey be carried prior to milestone two to fully assess the repair and replacement requirements of the existing roof, structure and fabric and to inform the milestone two design moving forward.

Stakeholders and Partnership Development

The following are existing or potential partners in the development and others are expected to be identified in the course of the development:

- Cambridgeshire Music (County Music Service with developing Performing Arts remit)
- Cambridgeshire Music Education Hub (Music Education Hub reaching over 400 music partners including schools, national portfolio arts organisations)
- Cambridgeshire County Council (County LA)
- Cambridge City Council (City LA)
- St Luke's Primary School (adjacent to site)
- Spinney Primary School (Teaching Alliance)

- Church Schools trust (County church school support)
- Diocese of Ely (Supporting organisation for Primary school)
- Cambridge Live (Entertainment Venue Partner with outreach activity)
- Cambridge Junction (Entertainment Venue Partner with outreach activity)
- Education ICT Service (County Education Service for Information Technology)
- University of Cambridge (Computer Lab, Outreach and Education Departments)
- Anglia Ruskin University (Electro-acoustic music department and Music Therapy partner)
- Dance East (Regional Dance Network)
- Arts Council of England (National Arts Council)
- Norfolk & Norwich Bridge Organisation (Bridge)
- Business Investment partners (redacted until confirmed)
- Kettle's Yard Gallery

4.3 The Existing Site - Site Access & Features

04



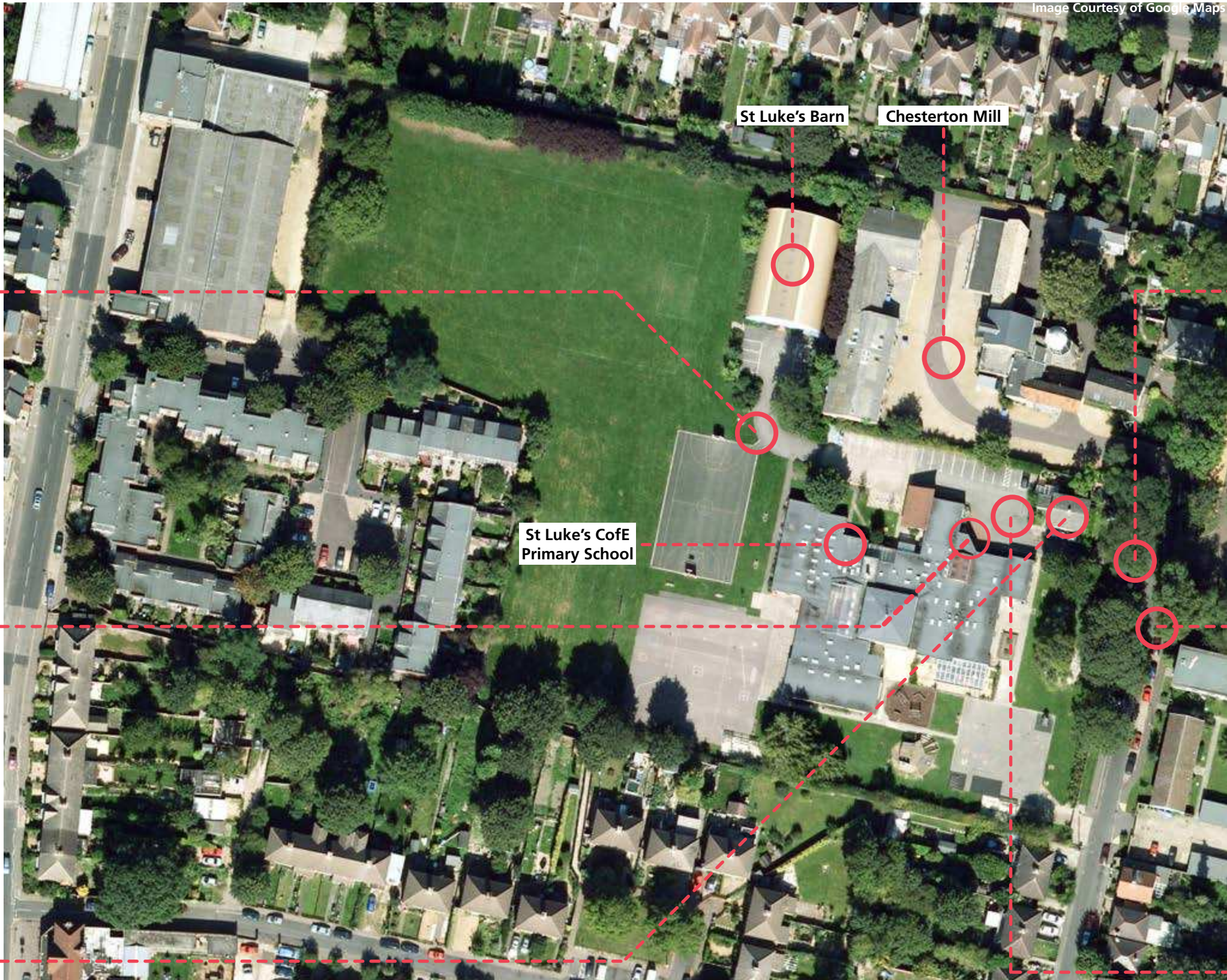
A - Fencing into St Luke's Barn Entrance



B - School Main Entrance



C - Caretakers House



05. Site aerial view

4.4 The Existing Site - Site Access & Features

Existing Site Plan & Buildings

St Luke's CofE Primary School and St Luke's Barn Site

Vehicular access into the site is provided by a single entrance from French's Road. A separate staff and visitor access is located to the left hand side of the vehicular entrance. Vehicle access to the school car park is currently restricted to staff, official visitors and deliveries. Currently the parking provides approximately 23 spaces and the St Luke's Barn site provides a further 6 spaces.

An additional access point to the field is located off Rackham Close.

St Luke's Barn Site

There is a field to the west of St Luke's Barn which is part of the School grounds. To the East is Chesterton Mill and The Little Gym facility. To the North is Chesterton Mill (private road) and to the South is St Luke's Barn car park.

Access is significant constraint that will affect any major development of the St Luke's Barn site. Options have been developed within Section 6.0 to mitigate this constraint.



D - Entrance to St Luke's CofE Primary School



E - French's Road



F - School Carpark



G - Entrance to St Luke's CofE Primary School from St Luke's Barn



H - School Car Park

4.5 The Existing Site - Current Building & Site

04



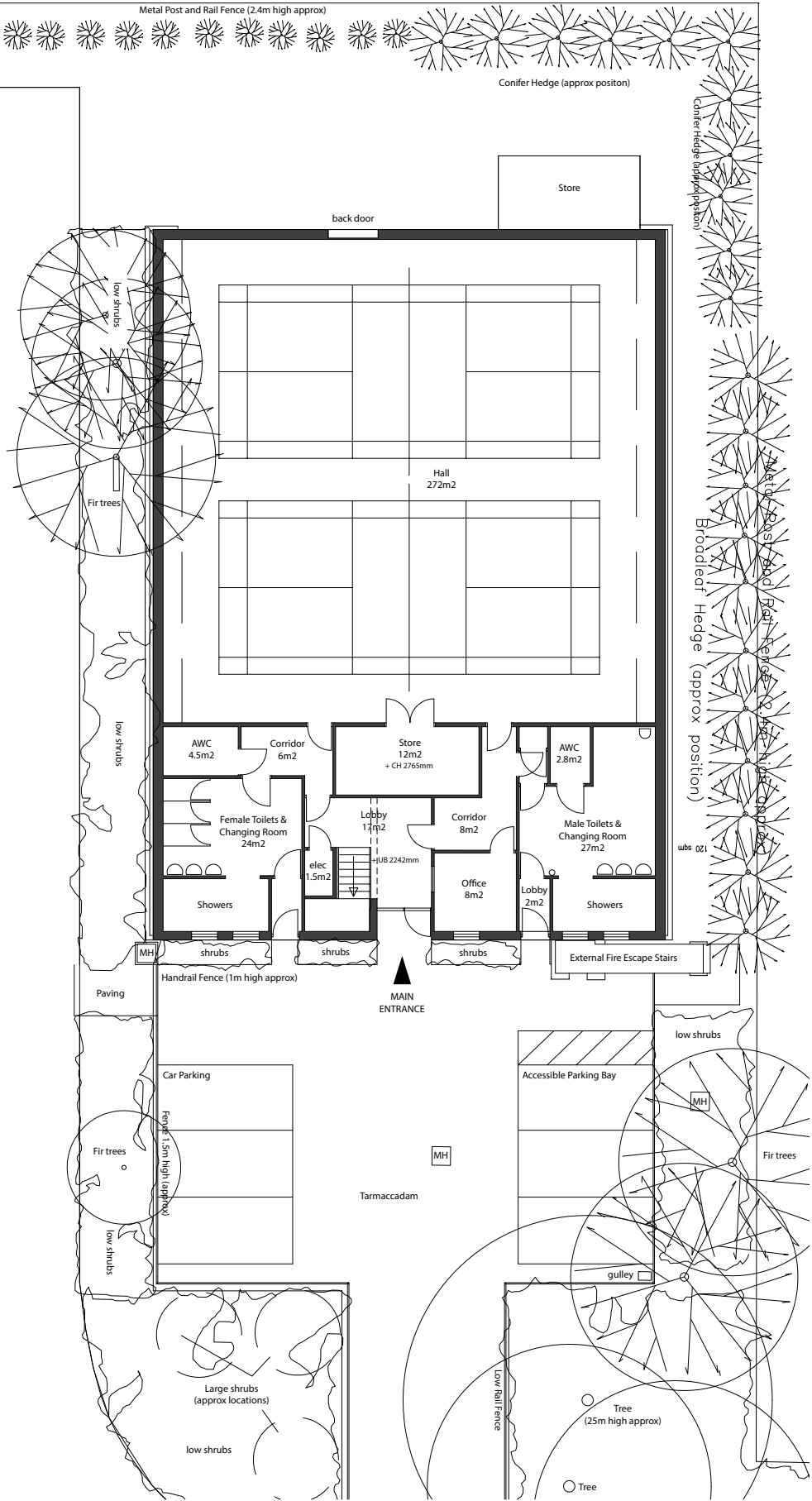
J - Entrance hall / stair



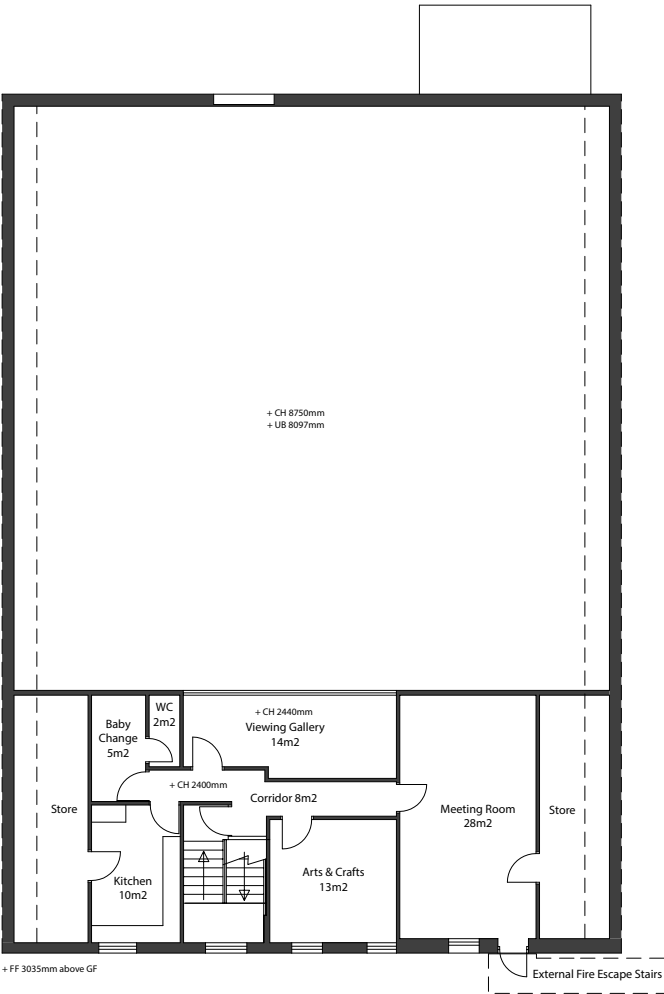
K - First Floor Meeting Room



L - Main Hall

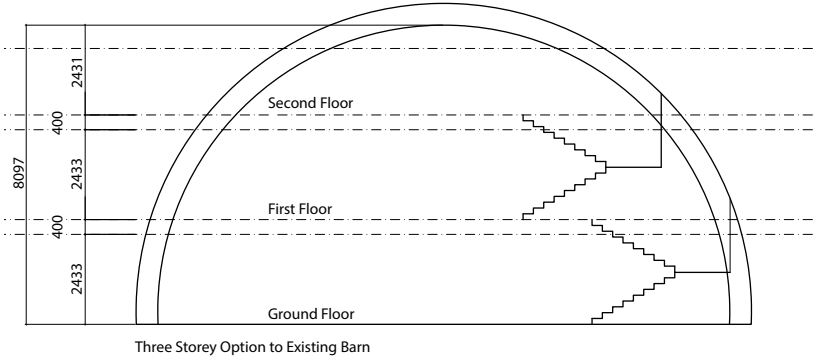


Existing Ground Floor Plan



Existing First Floor Plan

Existing building footprint 400m²
Existing building GIA 650m²



Existing Section (indicating potential 3 storeys)

4.6 The Existing Site - Current Building & Site



M - Front Entrance to St Luke's Barn



N - Side Elevation to St Luke's Barn



P - Rear Elevation to St Luke's Barn

4.6 The Existing Site - Current Building & Site

04



Q - Fire Escape from first floor



R - Cladding types - Brick and corrugate Metal



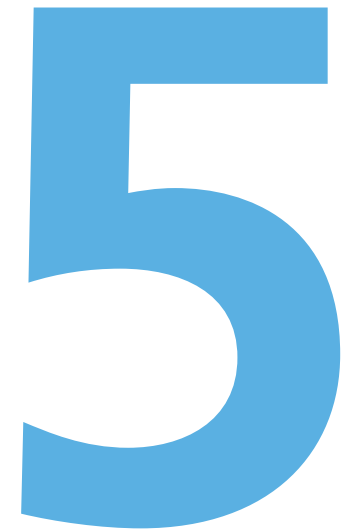
S - St Luke's Barn Car Parking

Options - Remodelled & New Build

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



5.1 The Brief

05

Cambridgeshire Music

Cambridgeshire Music are a County music service and Lead Partner for the Music Education Hub. There are a whole range of opportunities available through Cambridgeshire Music or their partner organisations in which people can take part.

Cambridgeshire Music has formed many partnerships with parent groups, schools, performing ensembles, venues and organisations. They work closely with the new music education hub in Cambridgeshire to ensure more opportunities can be made available to children and young people.



Feasibility Study for Cambridgeshire Music, Cambridgeshire County Council

This Milestone One Report has been undertaken in relation to the site and surroundings of the St Luke's Community Barn adjacent to St Luke's Primary School, French's Road, Cambridge.

The study aims determine and provide estimated costs for creation of the facility, either:

- By renovating and converting the existing property
- By demolishing and new build.

In particular the study will investigate the difference in the two approaches and the potential benefits of new build in meeting the specification for the new facility.

The facility will need to include for:

- Creation of additional car parking on the site (including options on the school part of the site).
- Consideration of highways agency issues in terms of access and congestion and alternative access options.
- Ground clearance around the existing site
- State of repair of existing building and renovation of exterior under the conversion option (further information will need to be provided in a condition survey prior to detailed design).
- Ground work and structure for internal frame and floor under conversion option
- Demolishing costs
- New build costs
- Internal layout, utilities, improvements to heating and lighting (including natural light), gas boiler installation and acoustic treatments
- Security and boundaries
- Permissions and authorities required

A discussion with the client was undertaken with the Client prior to the feasibility study to explore the above and documentation that was issues including:

- Outline purpose for the facility to date
- Specifications affecting internal layout and acoustic treatments

- Access and site parking options
- Available plans

An estimated cost is was also requested for this study.

Suggested specifications for internal spaces:

Usage parameters:

The facility will have multiple attendees at any one time, with a normal usage expected of 100 and a possible maximum of 200. Facilities should be sufficient to cater for this in terms of toilets, corridors and access.

Parking will be limited due to location and available spaces but it is expected that up to 40 spaces might be possible on site, more if feasible. Cycle racks will be used and pedestrian and cycling access encouraged. Disability access will need to meet national standards.

Environmental considerations including alternative power/heat mechanisms would be expected.

Main Hall:

One level of the building would need to be large enough to cope with a symphony orchestra rehearsal e.g. 80-100 people in orchestra format. Therefore the largest space will need to take account of that scale estimated as a minimum of 200m2.

This area would be subdivided into smaller halls, suitable for 25-35 players where possible.

The flooring for the hall areas would be a sprung floor.

The acoustics of the main hall would need to be sufficient for choirs and orchestras estimate 1.8 secs. Smaller halls might be less in natural reverberation due to the additional wall characteristics.

Small studios would be at least 16sqm in size with a square or rectangular shape to ensure some depth. There would not need to be specific flooring and acoustics would be relatively dry 1 sec or less.

5.1 The Brief

Large studios:

It is anticipated that large studios would be the size of a medium classroom, effectively a mid-range between small hall and small studio with appropriate characteristics and no need for specific flooring.

The range of options would look to establish a mix of provision e.g:

- 1 hall – up to 3 spaces
- 8 or more small studios
- 3 or more large studios
- Workshop and instrument store – spec from existing max storage equivalent to 3 large studios
- Music Library increase on current store – similar to large studio
- Office space equivalent to 2 small studios
- Reception area and small shop/space for vending equivalent to 1 large studio
- Lift and stairwell
- Second stair exit for fire purposes.

However there are lots of variables and options which can be explored for final layout as long as the basic 3 floor space provides for the minimum above.

Typical areas are indicated below:

Space	No.	Area	Total area
Main Hall	1	200	200
Large Studio	2	60	120
Small Studio	8	16	128
Workshop / Instrument Store	1	120	120
Music Library	1	60	60
Office Space	3	16	48
Reception Area / small shop space	1	40	40
Lift & stairwell	1	120	120
Toilets	2	26	52
Circulation			100
Breakout Areas			45
Plant Room 3% Net			30
Total required area			1063

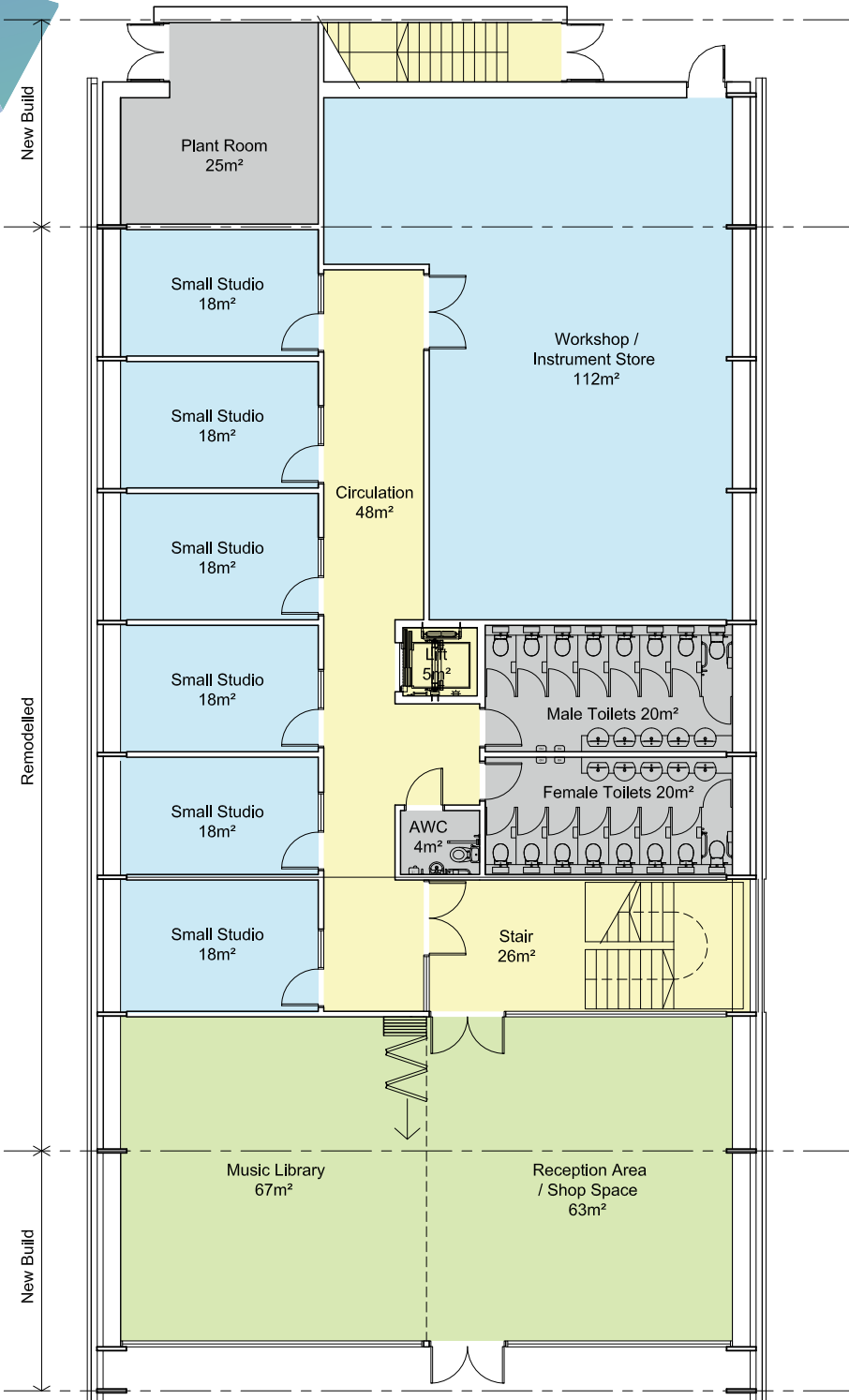
Elements to consider in the centre:

- Library Area for e.g. Music Sets – general public browsing access
- Storage e.g. for instruments – general public “try out” opportunities and instrument exchange
- Repair and maintenance area for instruments – with option for running workshops and training and “shop front” if required.
- Arts IT studio – with provision for digital arts and music creation, editing and training
- Recording facilities, linked from all learning, studio and ensemble spaces to enable audio visual transmission and recording with 2-way live streaming to internet or storage.
- Secure staff wireless internet access throughout building with guest option for visitors, network access from office and IT spaces.
- Reception and office area space with waiting seating and Monitor feed of centre activities/welcome screen, and security monitoring
- Bookable office rooms with phone points, wireless IT. Duty managers office with same.
- Meeting spaces – for 1;1 groups, large groups, conference hall – bookable as required
- Live and internet based tuition spaces – for 1:1, groups, large groups, full hall size activities – bookable as required
- Toilets, changing and limited kitchen facilities – max centre numbers anticipated 500 at any time.
- Parking and cycle storage on site.
- Heating/ventilation system– potential change to gas ducted heating/air condition?
- Lighting requirements for main hall and smaller rooms including natural light control as required.

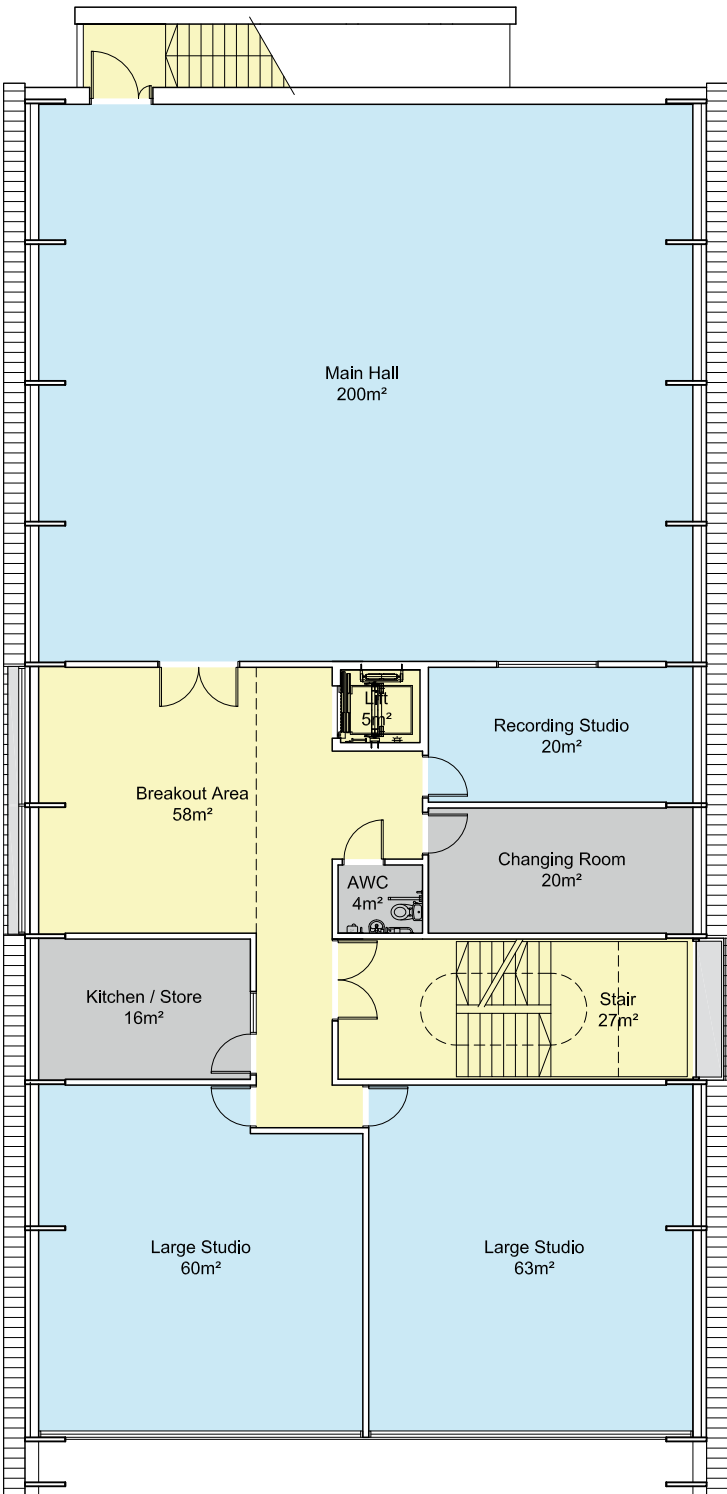


5.2 Option 1 - Remodelled Option

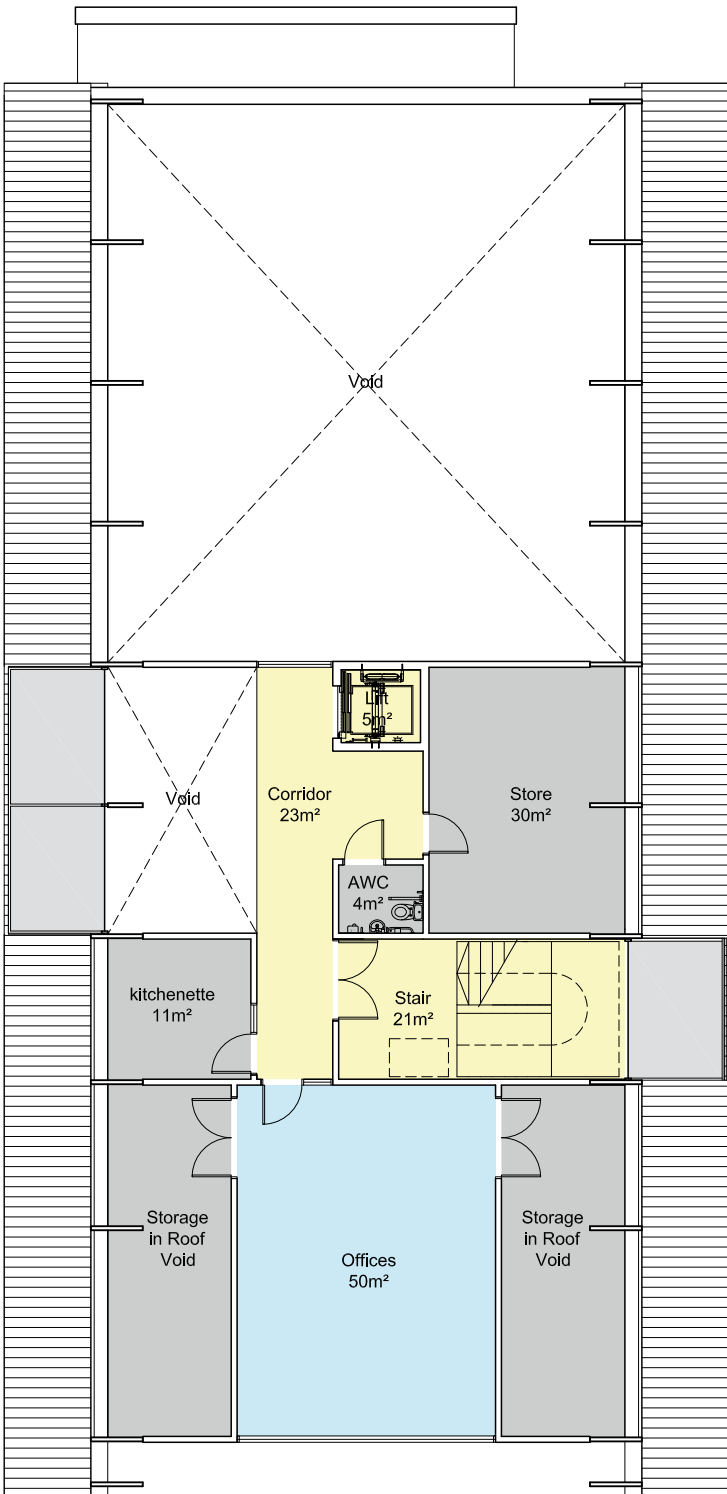
05



Ground Floor Plan
New Build GIA 148m2
Remodelled GIA 360m2



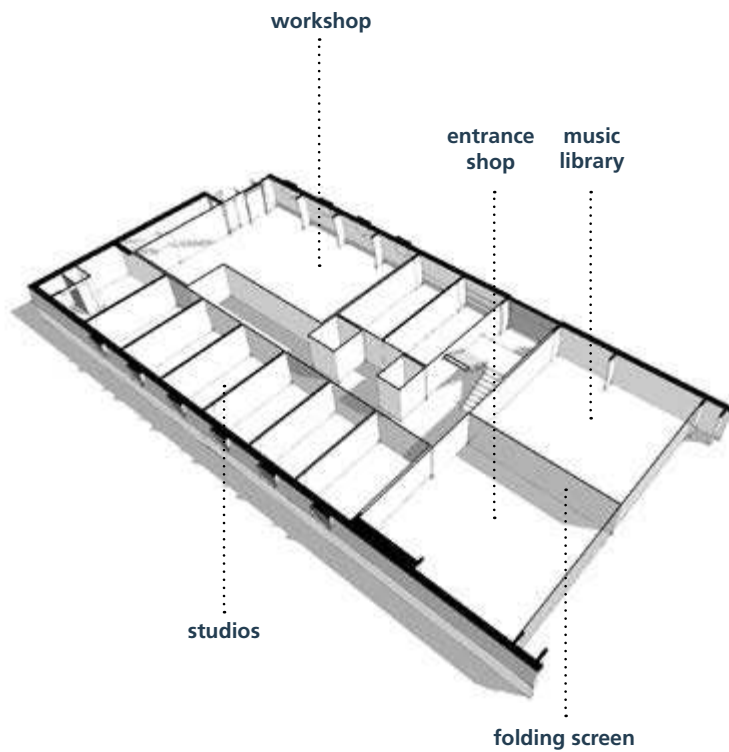
First Floor Plan
New Build GIA 148m2
Remodelled GIA 360m2



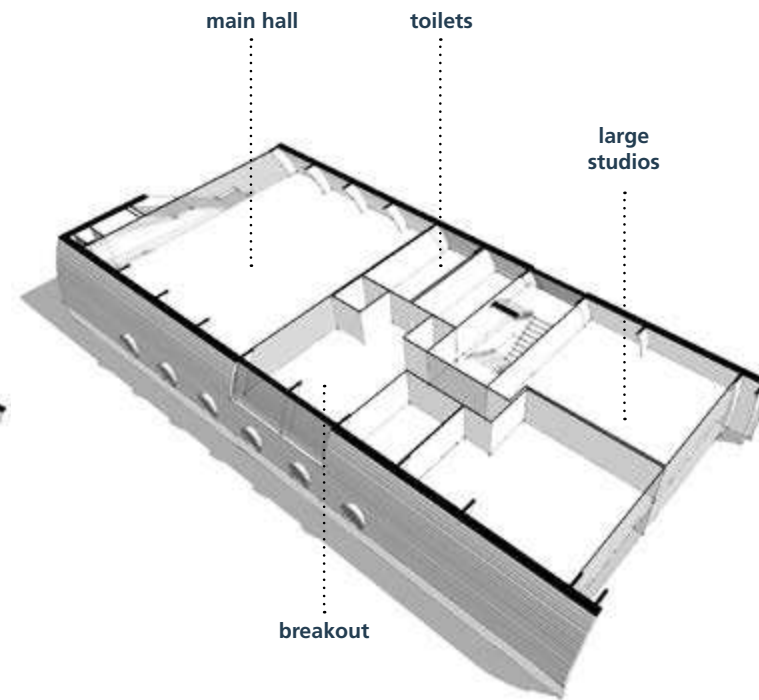
Second Floor Plan
New Build GIA 60m2
Remodelled GIA 163m2



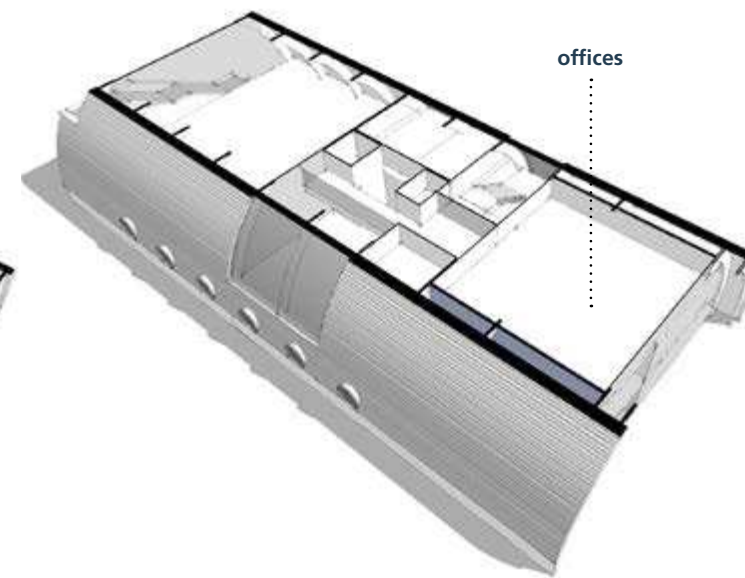
5.2 Option 1 - Remodelled Option



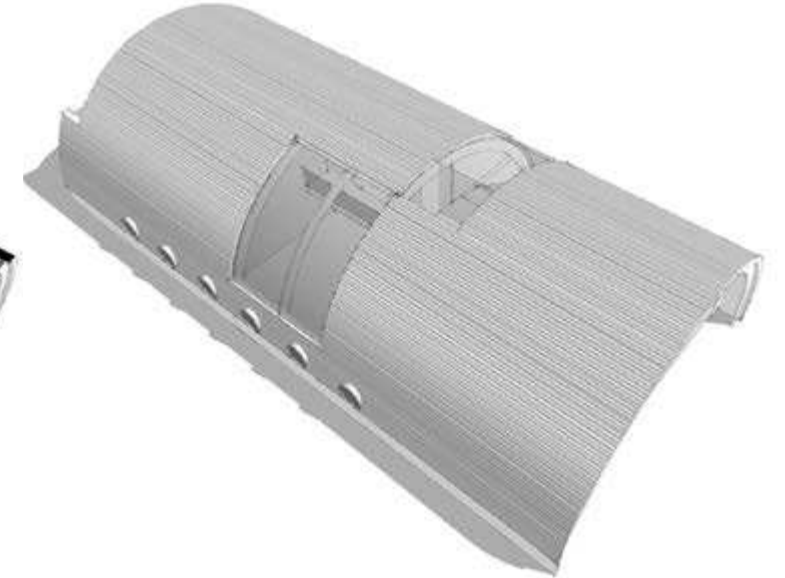
Option 1 - Ground Floor Arrangement



Option 1 - First Floor Arrangement



Option 1 - Second Floor Arrangement



Option 1 - Roof Arrangement

Option 1

Option One utilises the existing building glulam structure to create the Music Centre. All existing internal and external walls will be removed including replacement of the existing external metal cladding.

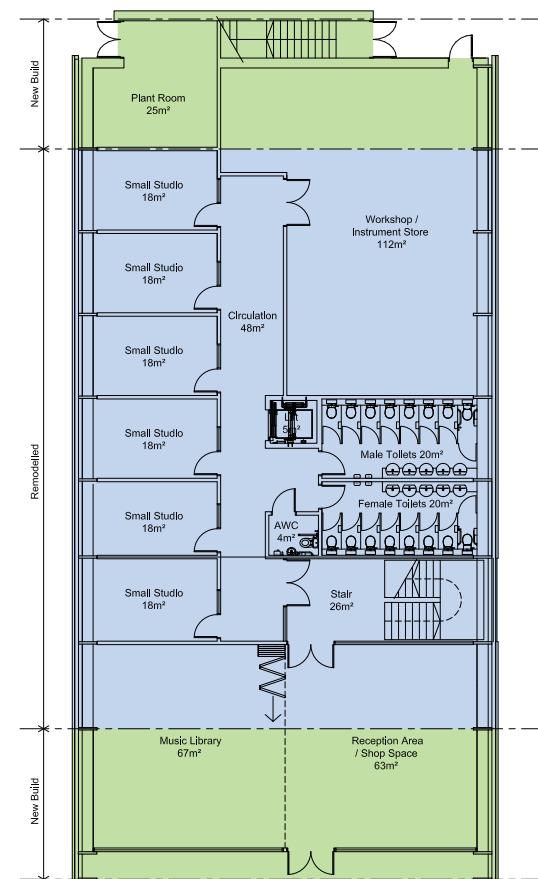
The existing two storey building is now split into three storeys giving a maximum ceiling height of 2400mm.

The ground floor accommodates the Entrance, shop, Library, Workshop and Studios together with ancillary Accommodation. The first floor accommodates the Main Hall (to benefit from additional ceiling height), the Large Studios and ancillary areas. The second floor accommodates Office Area and storage. This floor is restricted due to the curve of the roof structure.

Circulation is via one main stair and a lift. An additional escape stair is provided to the rear of the building accessed through the Main Hall.

Glazed areas are provided in the curve with 'punched' circular windows providing light and ventilation to individual rooms.

	New Build 356m2 GIA
	Remodelling 883m2 GIA

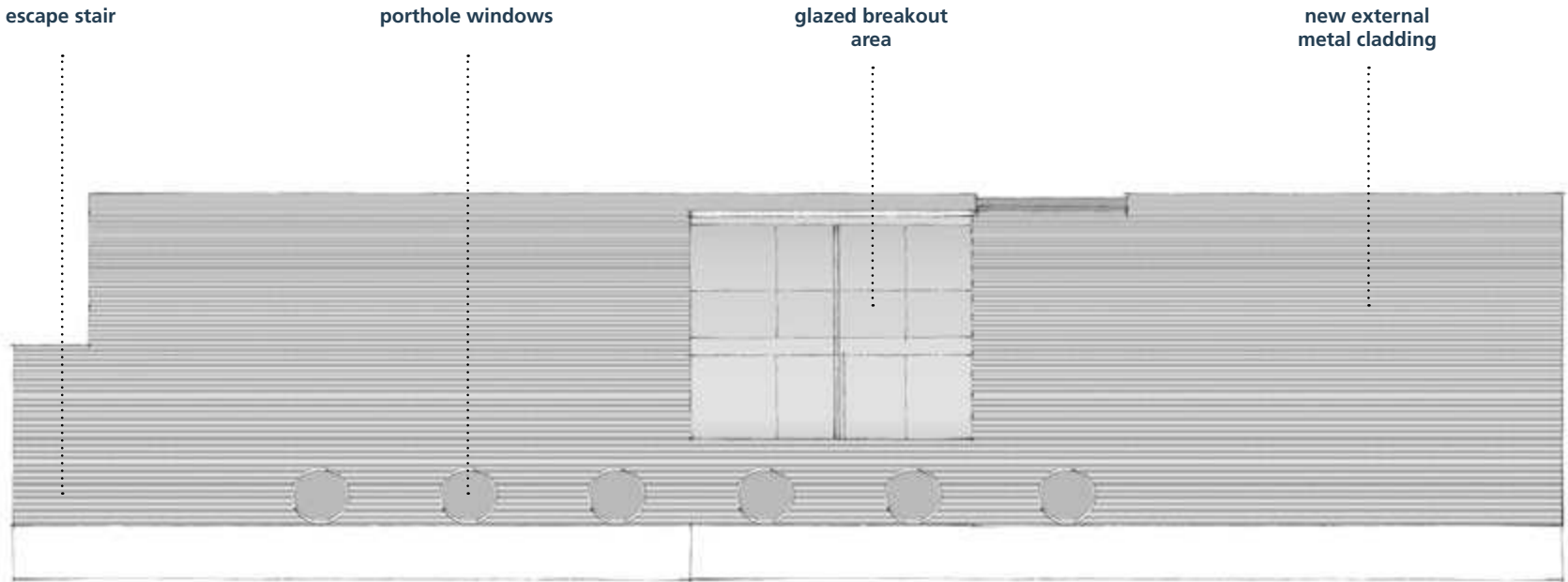


Extent of New Build & Remodelling

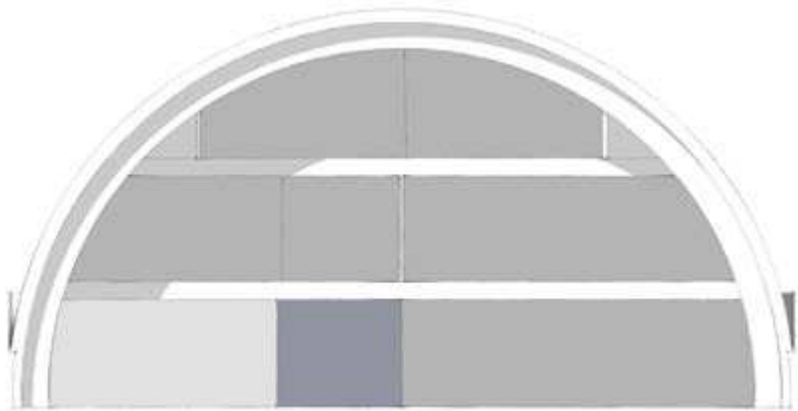


Option 1 - External View

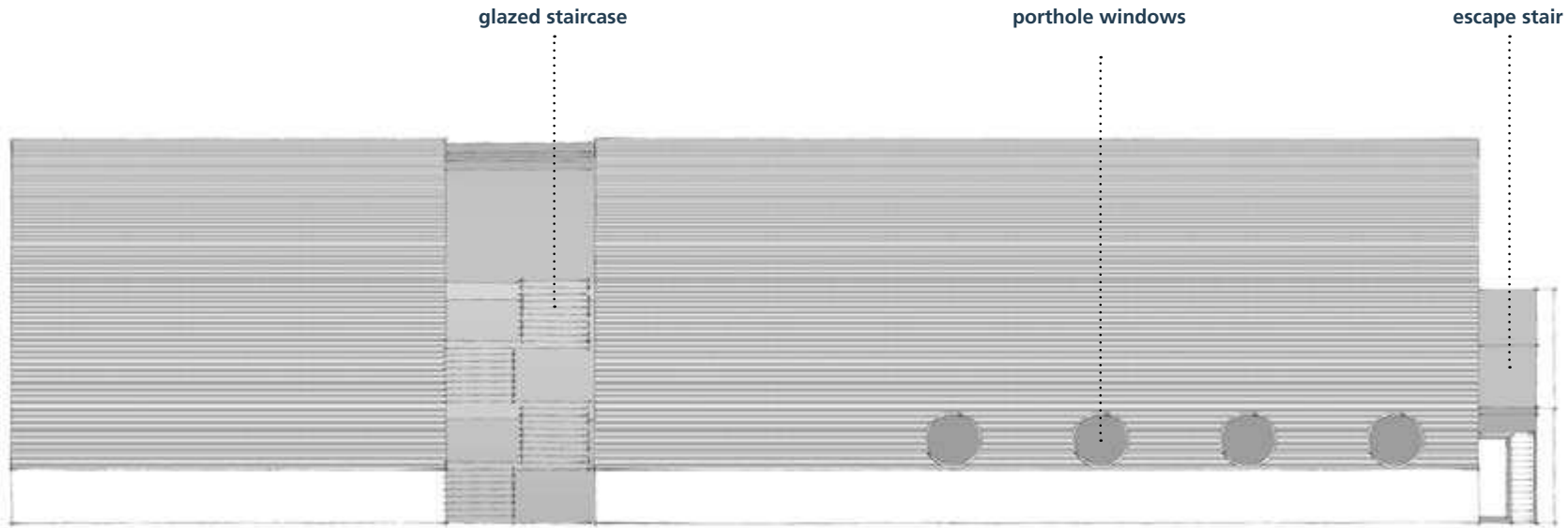
5.2 Option 1 - Elevations



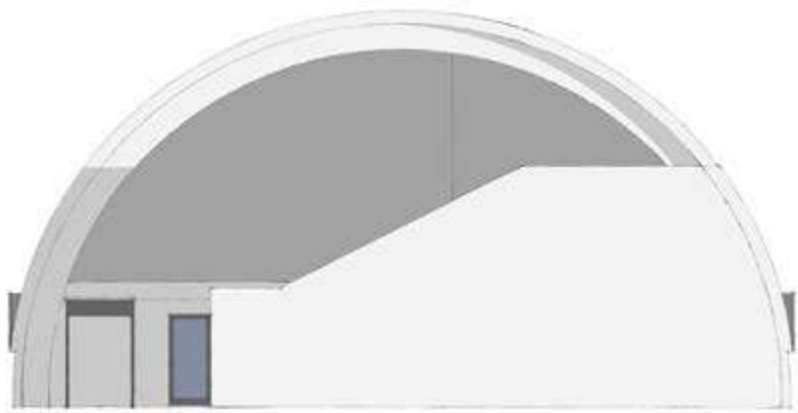
Option 1 - West Elevation



Option 1 - South Elevation

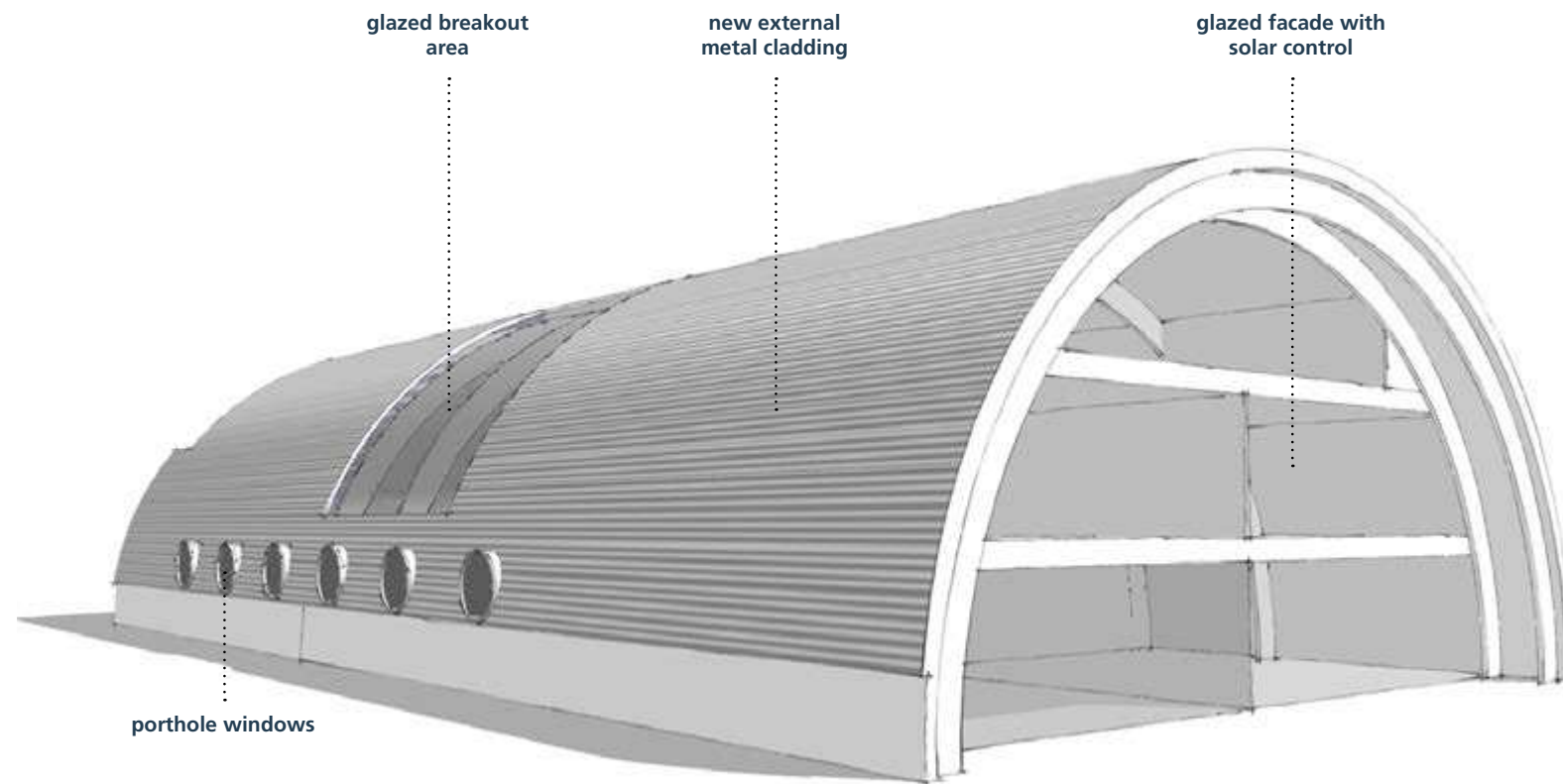


Option 1 - East Elevation

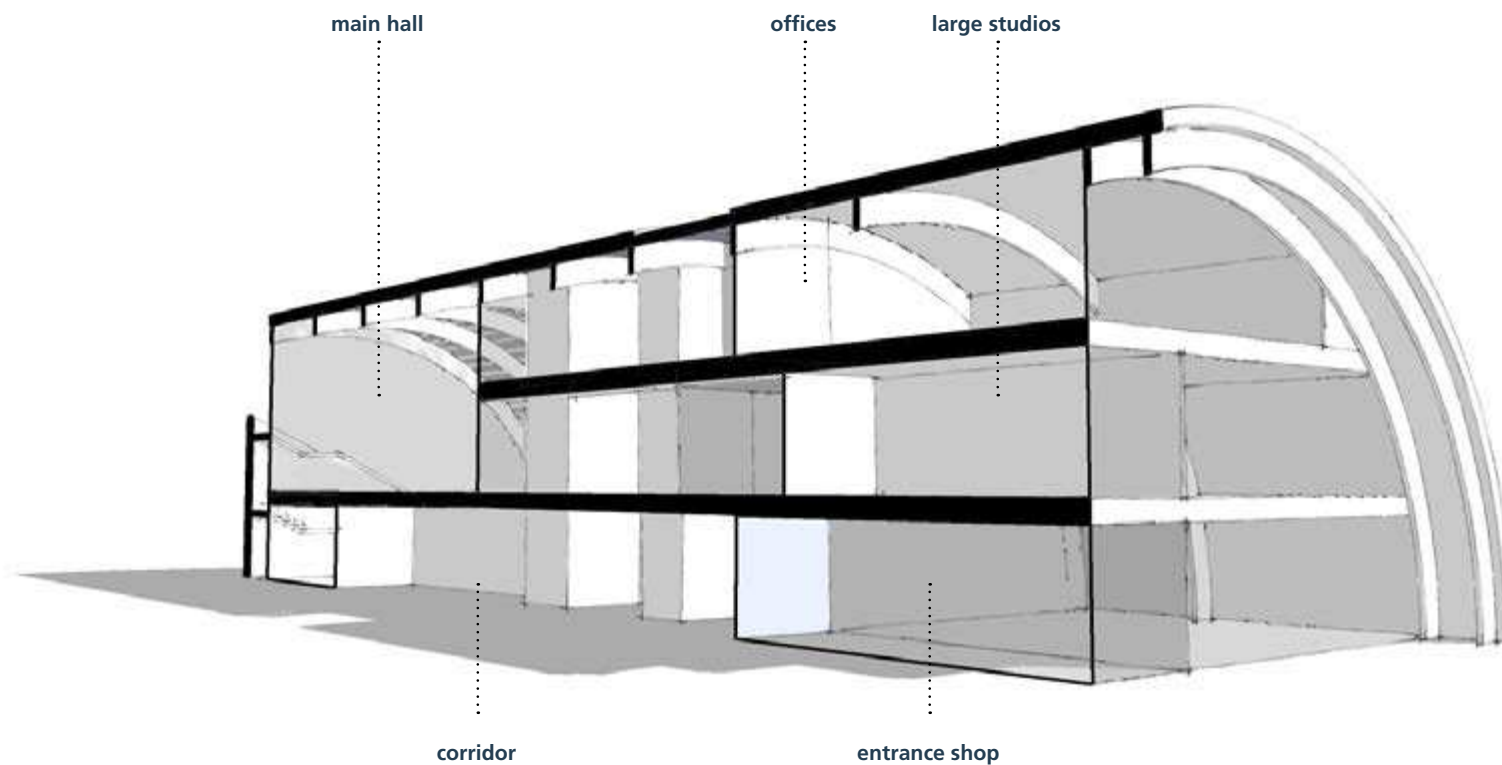


Option 1 - North Elevation

5.2 Option 1 - Section & Images



Option 1 - Eye View



Option 1 - Birds Eye View

External cladding option



SPECIFICATION

Euroclad Elite PLUS 53 – Wall Profile over sheeting rails.

Benefits:

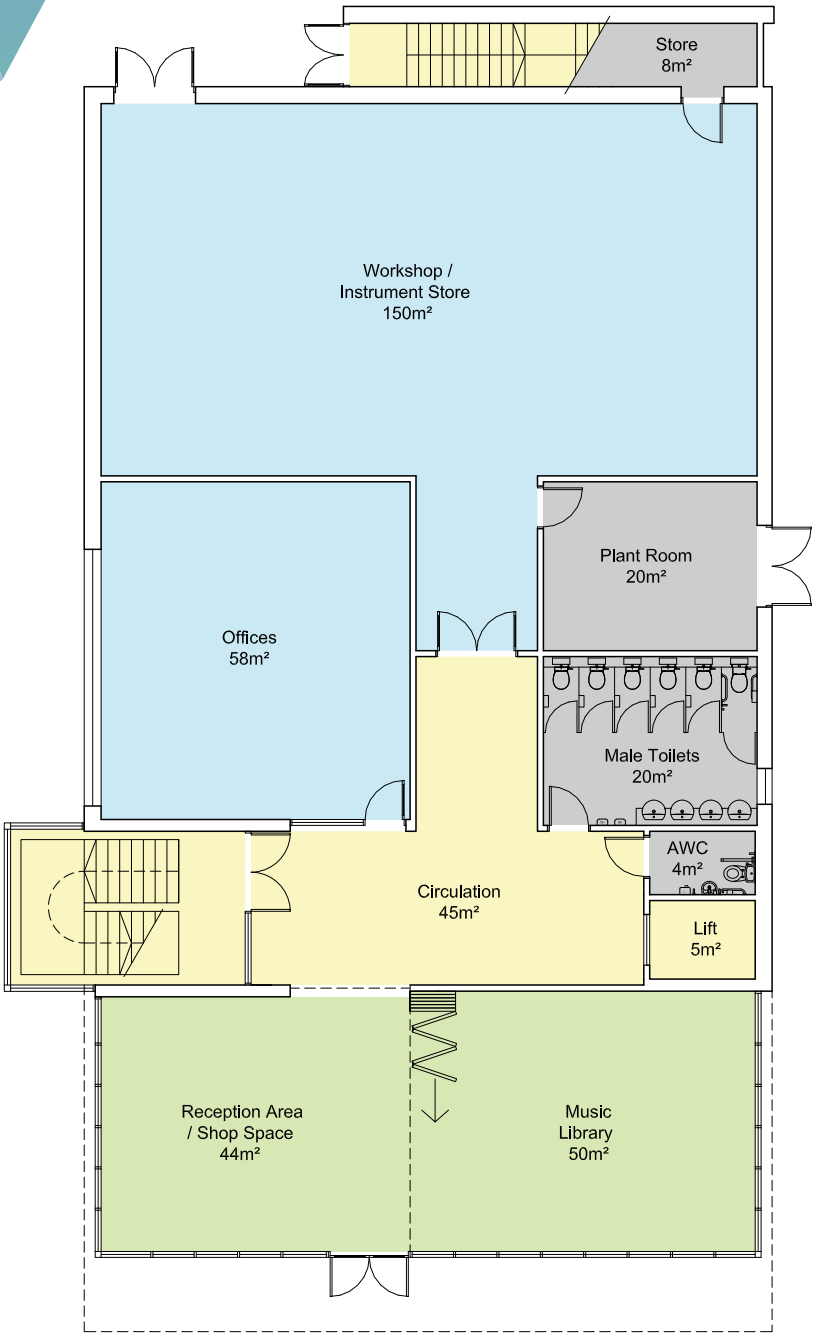
- Recyclable wall system
- Sound Reduction 40dB RW (min. for 0.31 U value, specific test data available on request)
- Suitable for all humidity class buildings
- Suitable for normal applications where acoustic absorption is not a requirement (acoustic absorption is to be provided by internal room lining).
- Economic wall solution
- Part B Firewall compliant 2 hours Integrity, 15 minutes insulation
- Available LPCB approved to LPS1181
- 25 year system guarantee
- BRE Green Guide rated A+ summary rating
- Non-Combustible insulation
- Best suited for industrial, commercial and warehousing applications

Features:

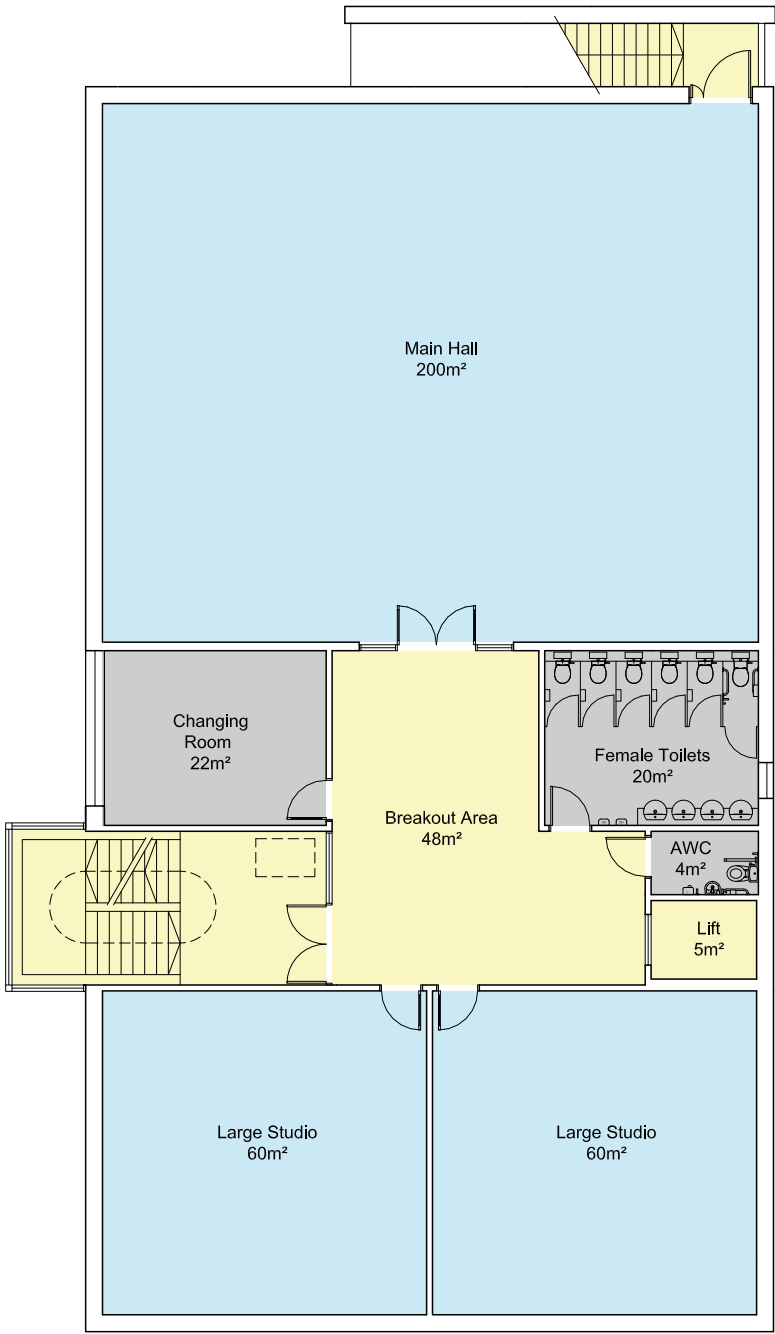
- 13.5_3 Sinusoidal profile sheet
- Colorcoat® with Confidex® Guarantee
- Quattro spacer system
- Glass Fibre insulation to achieve required U value
- 19/1000 0.4mm steel liner sealed to form VCL
- Steel sheeting rails (by others) gauge 1.5mm to 3.0mm
- Overall system depth from sheeting rail to crest of outer profile - see System Drawing file

5.3 Option 2 - New Build Option

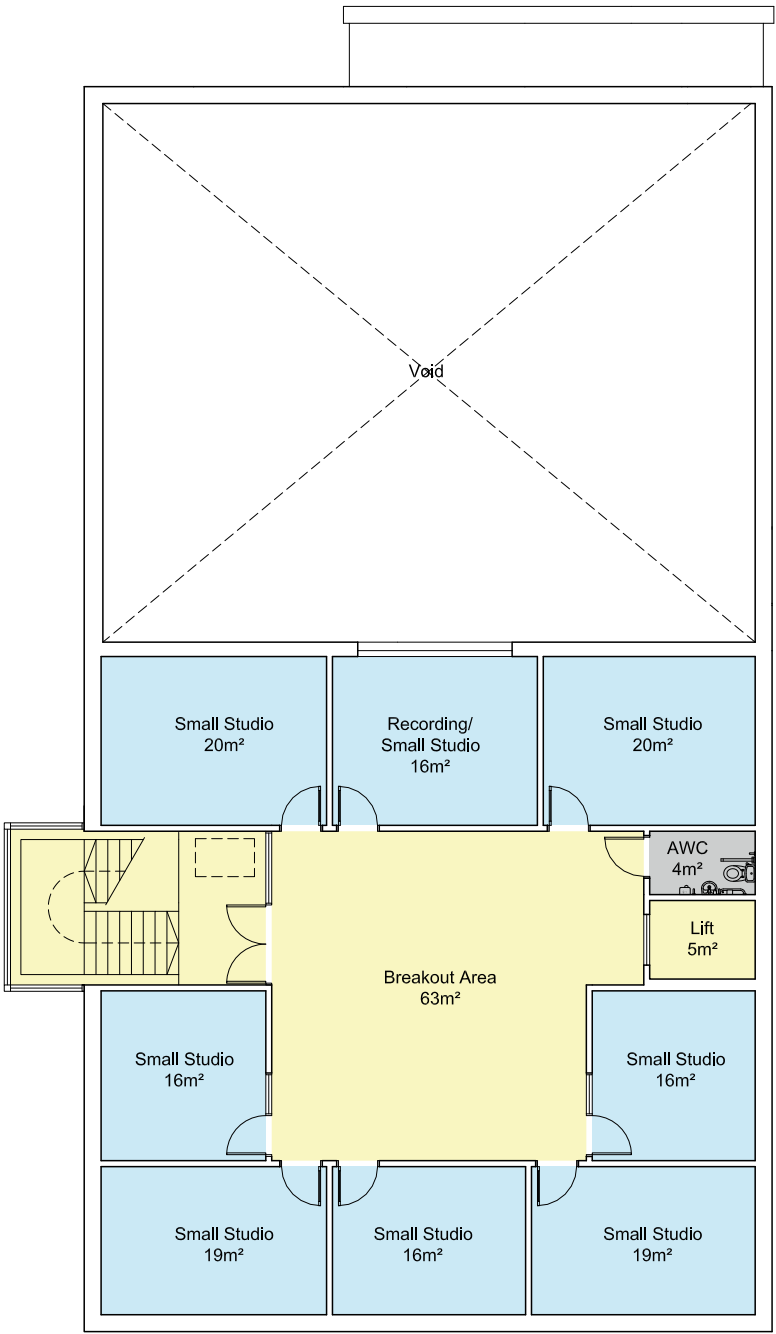
05



Ground Floor Plan
GIA 448m2



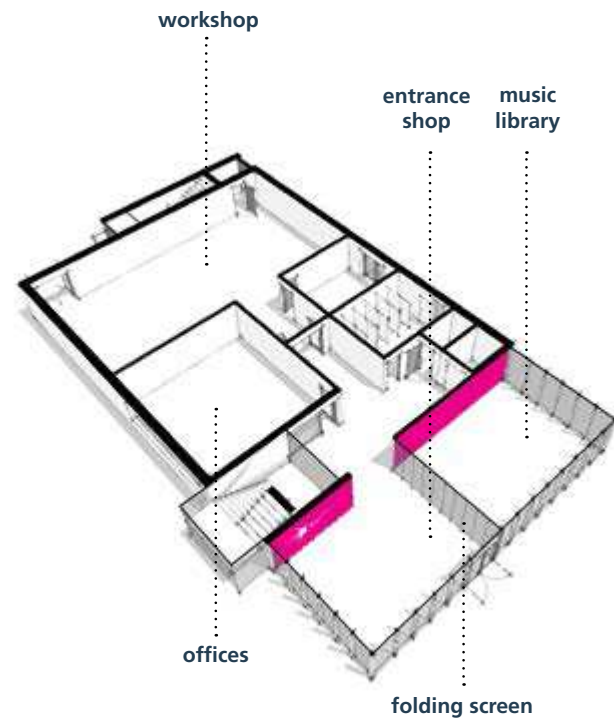
First Floor Plan
GIA 471m2



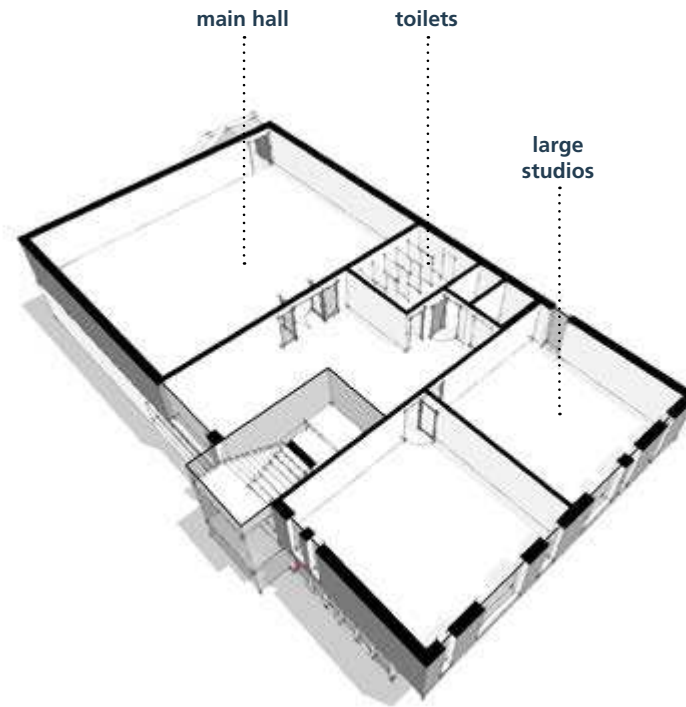
Second Floor Plan
GIA 250m2



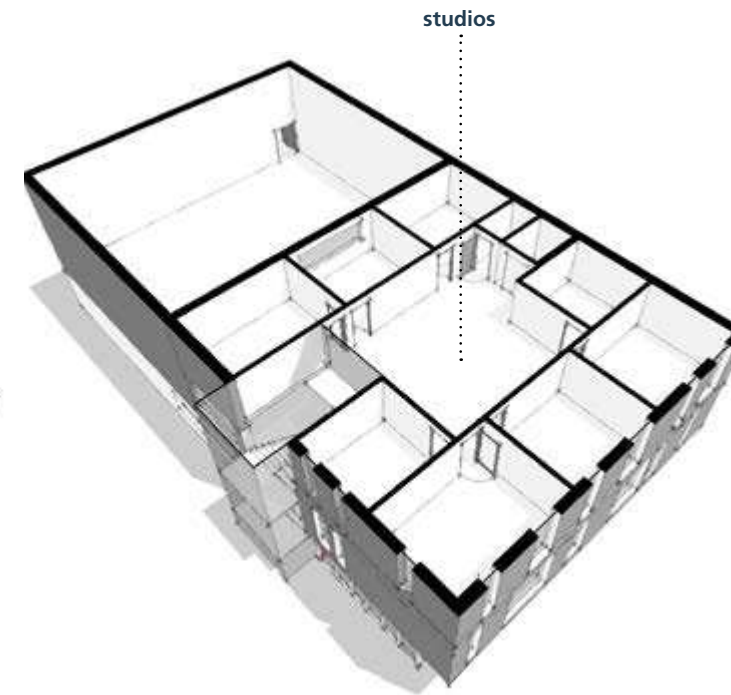
5.3 Option 2 - New Build Option



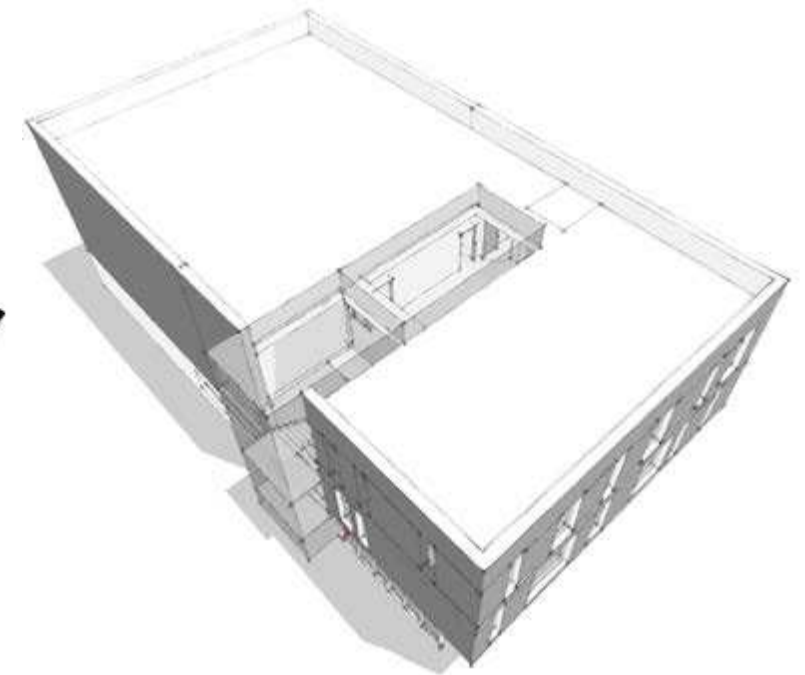
Option 2 - Ground Floor Arrangement



Option 2 - First Floor Arrangement



Option 2 - Second Floor Arrangement



Option 2 - Roof Arrangement

Option 2

With Option Two the existing building will be demolished to make way for a new build solution. Where possible the footprint has been designed to match the existing, so reducing the impact on external parking.

The proposed building will consist of three floors with an internal floor to ceiling height of 2700mm.

The ground floor accommodates the Entrance, shop, Library, Workshop and Offices together with ancillary accommodation. The first floor accommodates the Main Hall (to benefit from additional ceiling height), the Large Studios and ancillary areas.

The location of the main hall on the first floor enables sufficient space to be provided on the ground floor without compromise and allows the hall to benefit from double height without the need to build over it. This will however mean that the Main Hall floor will require additional acoustic treatment.

The second floor accommodates a suite of studios with ample breakout space and ancillary areas.

Circulation is via one main stair and a lift. An additional escape stair is provided to the rear of the building accessed through the Main Hall.

Glazed areas are provided in the with 'punched' windows providing light and ventilation to individual rooms and larger amounts of curtain walling to bring light deep into the building. A large rooflight is also proposed across the second floor breakout area.

For the purpose of this Milestone One report no external materials have been specified for the facade. This can be developed during Milestone Two/Three.

Images indicating possible concepts for the facade are shown in the following pages.

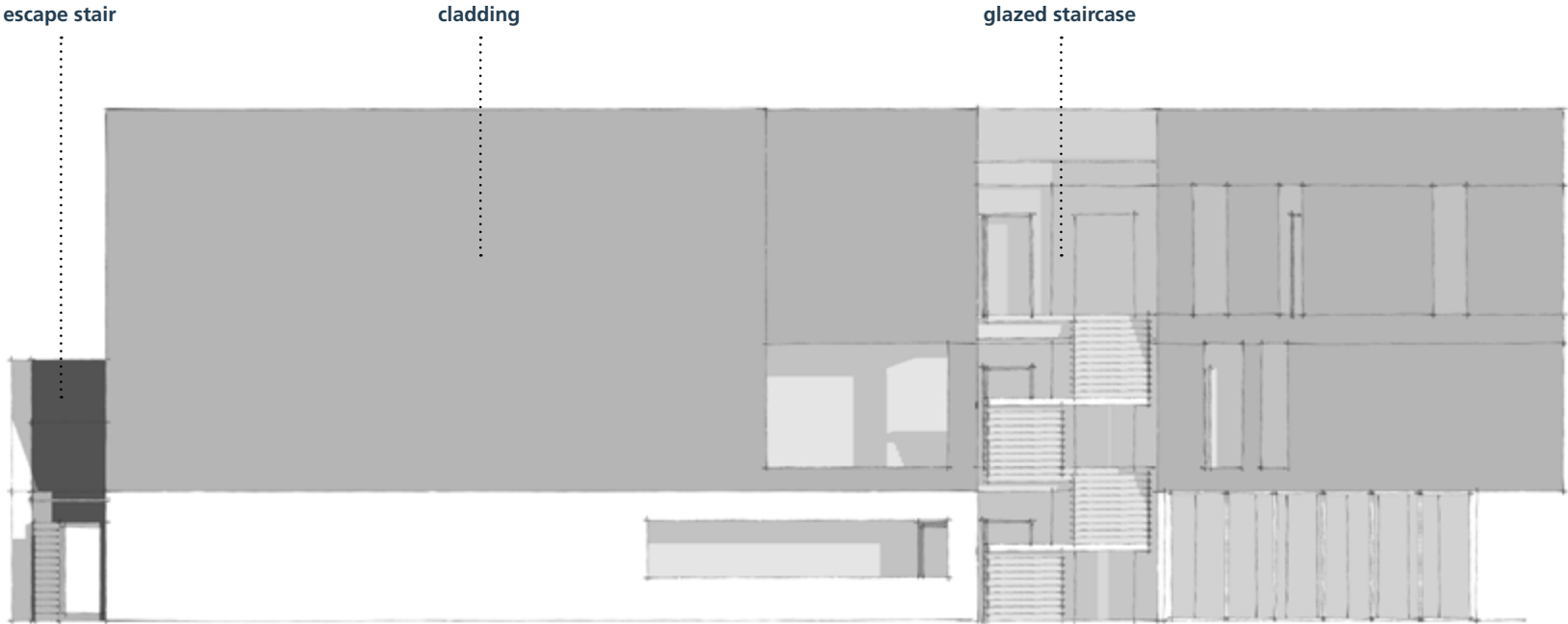
Total New Build 1,169m2 GIA



Option 1 - External View

5.3 Option 2 - Elevations

05



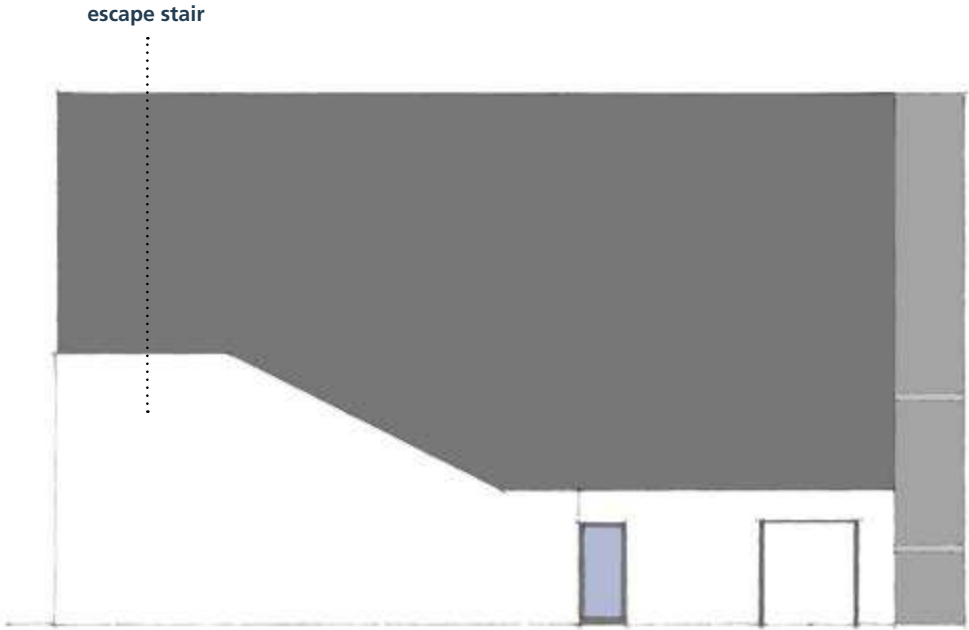
Option 2 - West Elevation



Option 2 - South Elevation



Option 2 - East Elevation



Option 2 - North Elevation

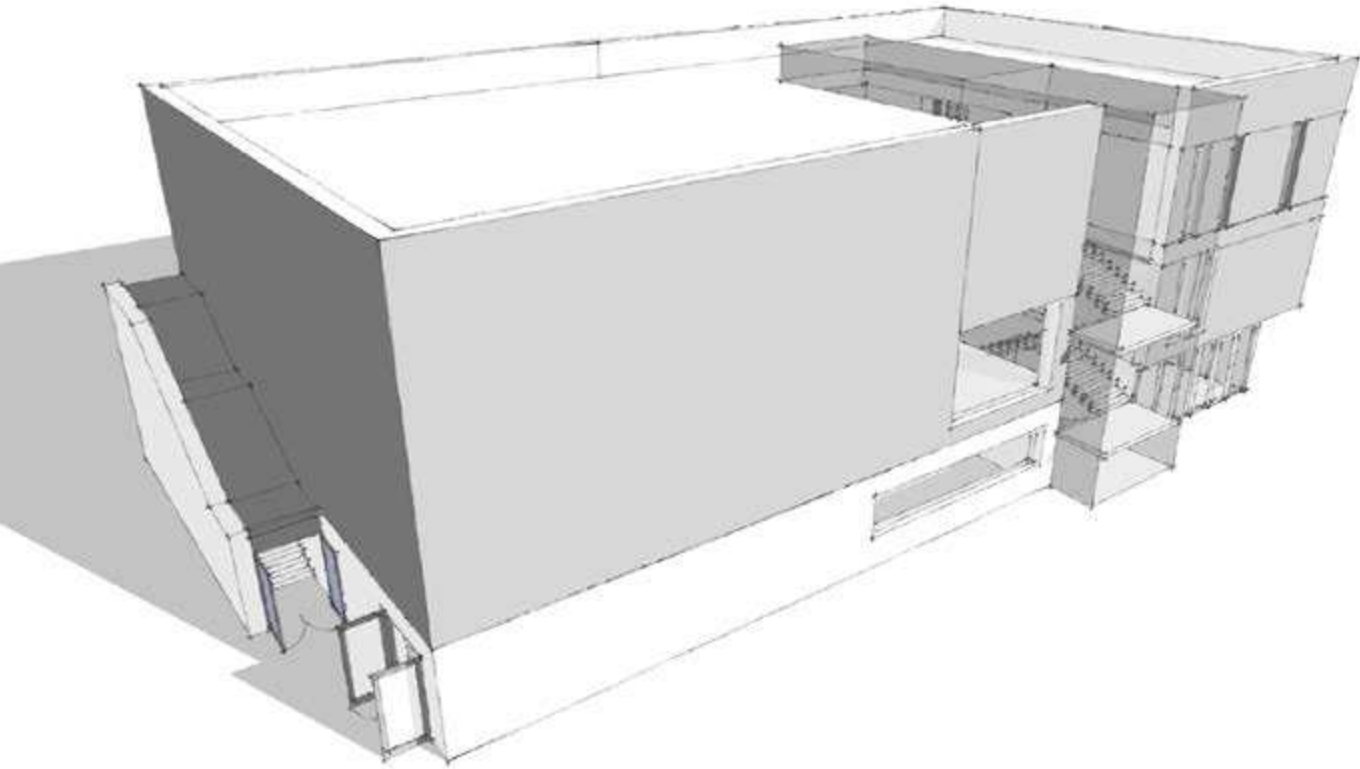
5.3 Option 2 - Section & Images



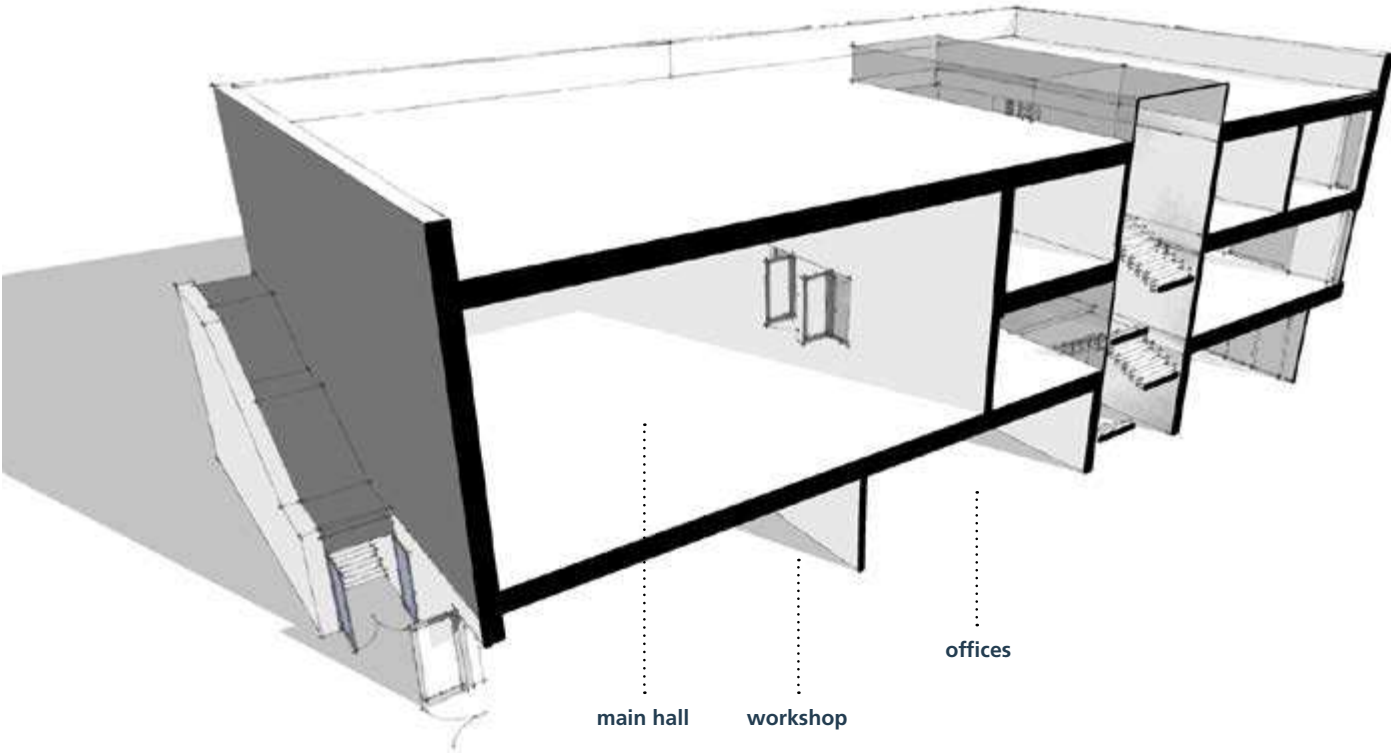
Option 2 - Eye View



Option 2 - Eye View Section



Option 2 - Birds Eye View



Option 2 - Birds Eye View Section

5.4 Option 2 - Facade Precedents

05



D - Helsinki Music Centre



D - Laban Centre



D - Modernist Cube



E - Performing Arts Centre Australia



E - Cut-Out Cube Architecture



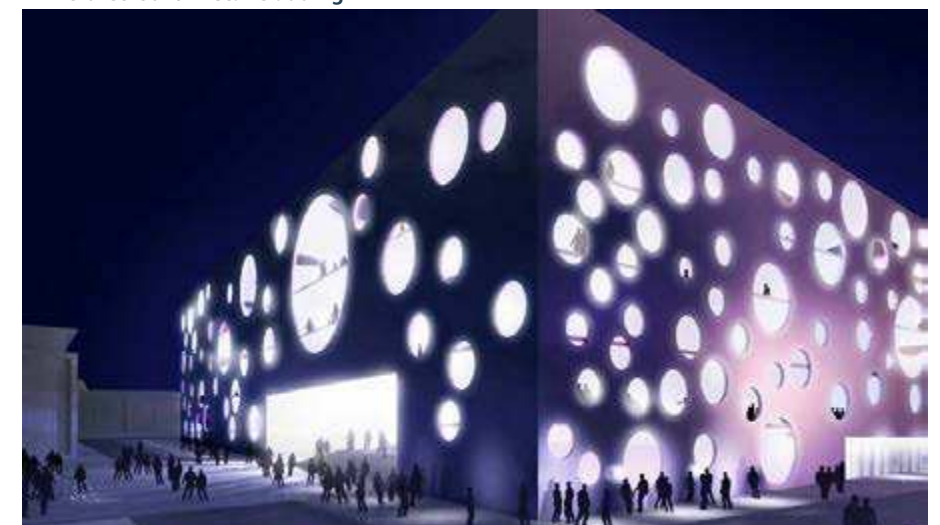
E - Bold Colour / Metal Cladding



E - Sheffield University Music Box



E - Coloured Glass Facade



E - Perforated Skin

Landscape

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



6.1 Landscape Intent

06

Setting and Planning Considerations

The site is located in Chesterton, Cambridgeshire, and are bordered by predominantly residential properties to the north, east, and south, and by commercial properties to the west.

St Luke's Barn is located within the Site Boundary of St Luke's Church of England Primary School.

The main vehicular access to the school and St Luke's Barn is from the east, off French's Road which runs the length of the eastern boundary.

The existing St Luke's Primary School / St Luke's Barn site has one significant constraint that will affect any major development of the site. Access to St Luke's Barn is via the existing school vehicular entrance which is a narrow single track road passing the main school entrance and through the existing carpark. It is recommended that consultation should be had with the School Stakeholders, Cambridgeshire County Council Highways / Planning Department prior to any further design development.

Vision

The overall vision for the landscaping design at St Luke's Barn is to provide a stimulating and vibrant entrance area with sufficient parking for the building use. Any future proposals should be low maintenance and provide access for all.

Considered and sensitive design techniques should be adopted throughout the design process, and the existing features of the site will be utilised to reduce the impact of development on the surrounding environment. Fundamental to this approach will be the retention of existing mature trees across the site wherever possible, and the provision of new planting to strengthen and augment the existing.

The ethos that architecture, landscape, and community are intrinsically linked will be promoted by providing efficient circulation routes throughout the site, linking the School to the Music Centre with suitable and robust hard landscaping.

One of the key principles of the design is "The shared and integrated environment" between the Centre and the School. Key design considerations should include separation of pedestrian and vehicular access, Cycle access and parking, accessible & general parking.

Vehicular Access to the Site

As part of this feasibility three options have been explored for access to St Luke's Barn. These are:

Option 1

Retain and widen existing access off French's Road. (Widening has been suggested for all options).

Option 2

Provide new access off Chesterton Mill (private road).

Option 3

Provide new access off Rackham Close.

The current access into the site is restricted to one vehicle entering the site with limited passing places. The existing school building and the caretakers property currently restrict access, this is further compounded by existing trees and pedestrian footway which all hinder access onto the site.

The proposed site options show the main entrance road widened until they reach the main school building. The widened road allows two vehicles to pass without causing restriction. The significant constraint comes at the pinch point between the existing school building and the caretakers property, which only allows space for one vehicle. Significant alterations would be required to either building to allow two vehicles to pass comfortably. The proposals show the existing pedestrian route realigned to improve access and reduce congestion, thus providing a safe and secure route for all pedestrians entering the site. An existing tree will likely be lost due to the impact on the root area, subject to further assessment from Arboriculturalist. However, if the loss of the tree is acceptable there is opportunity for tree mitigation planting.

On all options additional car parking is proposed increasing capacity beyond 40no. spaces including Blue Badge parking. Additional cycle parking is also provided increasing numbers by minimum 50no.spaces.

Options two and three explore alternative routes into the site. Both options require the loss of existing playing field which does not comply with the latest Sport England guidance and will likely face objection.

Further guidance with CCC Highways Department, input from a highways engineer and transport consultant will be required at the next stage should the site be deemed appropriate.



1 - View of field adjacent to the St Luke's Barn Site

6.2 Option 1, 2 & 3 - Proposed Access Options



OPTION 1 - Access via French's Road (existing access)



OPTION 2 - Access via Chesterton Mill (Private Road)



OPTION 3 - Access via Rackham Close



Current entrance to St Luke's Barn site from School grounds

6.3 Existing Site Plan

06

- Caretakers building
- Existing football pitch
(Not to recognised Sport England size)
- Existing car park
- Existing refuse store
- Existing playground



6.4 Option 1 - Current Access Option

- Outer building footprint represent renovation and extension of existing building. Inner building footprint represent to new building. Footpaths and plaza area to be extended as appropriate.
- Existing trees at the back of the building removed and replaced with dense hedge to provide new screening and allow improved, separate pedestrian access with double gates where appropriate
- Potential coach drop-off point
- Grasscrete for service access (subject to Sport England approval)
- Large entrance plaza highlights the main building entrance and provides high quality, impressive setting to the building. Area to include seating and planting.
- Additional gate onto field
- Minimal impact on the existing playing fields
- Refuse store relocated and increased in size to allow additional parking spaces to be proposed.
- New car parking spaces provided to increase the existing provision
- New cycle storage for minimum 50no. cycles
- New trees planted to mitigate the loss of existing trees felled for the implementation of additional parking / access facilities
- Entrance area improved to provide safe and secure access
- Entrance road widened to allow two cars to pass (with the exception of narrowing between School entrance area and the existing caretakers driveway)
- Main pedestrian footpath relocated to provide safe access route to the main school entrance



6.5 Option 2 - New Rackham Close Access

06

Outer building footprint represent renovation and extension of existing building. Inner building footprint represent to new building. Footpaths and plaza area to be extended as appropriate.

Additional access road follows playing field perimeter. The route is restricted by Tree root protection areas and playing field pitch markings.

(Note: Access route does not comply with Sport England guidance on playing fields)

Existing trees at the back of the building removed and replaced with dense hedge to provide new screening and allow improved, separate pedestrian access with double gates where appropriate.

Potential coach drop-off point

Large entrance plaza highlights the main building entrance and provides high quality impressive setting to the building. Area to include seating and planting.

Access road leading direct from Rackham Close (max 4m road width)

Minimal impact on the existing playing fields

Additional access road joins existing car park. New route reduces the amount of space for additional parking

Refuse store relocated and increased in size to allow additional parking spaces to be proposed.

New car parking spaces provided to increase the existing provision

New cycle storage for minimum 50no. cycles

New trees planted to mitigate the loss of existing trees felled for the implementation of additional parking / access facilities

Entrance area improved to provide safe and secure access

Entrance road widened to allow two cars to pass (with the exception of narrowing between School entrance area and the existing caretakers driveway)

Main pedestrian footpath relocated to provide safe access route to the main school entrance



6.6 Option 3 - New Chesterton Mill Access

Outer building footprint represent renovation and extension of existing building. Inner building footprint represent to new building. Footpaths and plaza area to be extended as appropriate.

Access off Chesterton Mill private access road (subject to agreement)

Potential coach drop-off point

Existing trees at the back of the building removed and replaced with dense hedge to provide new screening and allow improved, separate pedestrian access with double gates where appropriate.

Large entrance plaza highlights the main building entrance and provides high quality, impressive setting to the building. Area to include seating and planting.

Additional access road follows playing field perimeter. The route is restricted by Tree root protection areas and playing field pitch markings)

(Note: Access route does not comply with Sport England guidance on playing fields)

Additional access road joins existing car park. New route reduces the amount of space for additional parking

Refuse store relocated and increased in size to allow additional parking spaces to be proposed.

New car parking spaces provided to increase the existing provision

New cycle storage for minimum 50no. cycles

New trees planted to mitigate the loss of existing trees felled for the implementation of additional parking / access facilities

Entrance area improved to provide safe and secure access

Entrance road widened to allow two cars to pass (with the exception of narrowing between School entrance area and the existing caretakers driveway)

Main pedestrian footpath relocated to provide safe access route to the main school entrance



6.7 Parking Arrangements

06

Cambridgeshire Local Plan (2006) parking standards

Public halls require 1 space per 100m2 floor area, plus a disabled car parking bay if the development is located within the ' Controlled Parking Zone'. (Note, due to the proximity of the school to the city centre, it is assumed the scheme is within ' Controlled Parking Zone' although this needs confirmation from transport specialist.)

Based on this calculation (assuming 3 floors, each floor 500m2) would require a total of 15no. standard spaces and 3no. Blue Badge. Alternatively if the building is outside the 'Controlled Parking Zone' at total of 75no. standard spaces plus Blue Badge parking would be required.

Maximum Parking Provision (All Options)

Existing Parking on Site:

22no New spaces
7no. Blue Badge

Proposed Parking on Site:

37no. standard spaces
4no. Blue Badge

Plus: Overflow parking:

22no. standard spaces

Combined Proposed Total:

59no. standard spaces
4no. Blue Badge

Although the proposed parking provision can not extend to 75no. spaces is is recommended that dialouge with Cambridgeshire County Council Highways Department is carried out and a full and conclusive travel plan is produced. This will highlight the exact requirement of the facility and provide recommendations for alternative parking and/or alternative travel options.

Coach Drop-off

It is proposed that coach drop-off for parties of visitors to the centre would be on Histon Road or an alternative location used by St Lukes Primary School. No 'signed' coach drop-off locations were located during this study, therefore further discussion with Cambridgeshire County Council Highways will be required in Milestone 2 to agree a suitable location.

Table 4: Assembly, Culture, Leisure and Sports Uses.

Use	Inside CPZ	Outside CPZ
Museums, exhibition venues	Disabled only	On merit
Sports & recreational facilities, swimming baths	1 space for every 3 staff plus disabled car parking	2 spaces for every 3 staff, plus 1 space for every 4 seats, including disabled car parking
Cinema	Disabled and 1 space for every 2 staff	1 space for every 5 seats, including disabled car parking
Stadia	Disabled car parking only	1 space for every 15 seats, including disabled car parking
Places of assembly including, theatre, auditoria and concert hall	Disabled car parking and 1 space for every 2 staff	1 space for every 4 seats, including disabled and staff car parking
Place of worship	1 space per 100 m ² floor area, plus disabled car parking	1 space for every 8 seats, including disabled car parking
Public halls/ community centres	1 space per 100 m ² floor area, plus disabled car parking	1 space per 20 m ² of public space, including disabled car parking

Cambridgeshire Local Plan (2006) parking standards



View of Histon Road

Acoustic Design

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



7.1 Acoustic Design - Technical Note on Acoustic requirements

07

It is understood that the design of St Luke's Barn Music Centre is to achieve a music centre of a professional standard.

Two options for the development are proposed:

- Option 1 - the refurbishment of an existing building, and
- Option 2 - a complete new build.

It is considered that Option 2 is likely to represent the most complete acoustic design as the constraints of the existing building, as in option 1, could cause difficulties in achieving the desired acoustic performance. In both options the centre is proposed to have a large hall for orchestral music, a number of small and large studios for recording music, workshop/instrument store, music library, break out spaces and an office.

So that the expected activities within the proposed rooms can be carried out as intended and enhanced by quality acoustic conditions, and also, so that activities are not disturbed by external or internal noise or interference, the following points should be carefully considered:

- Sound insulation from external noise sources – the building envelope, external walls and roof, should be carefully designed to insulate from external noise sources. The extent of the design will depend on the external noise climate, which should be extensively surveyed. Also, the location and orientation of the building should be considered if possible, i.e. away from roads, rail and any noisy sites etc. With external structures to protect the building from noise considered, such as noise barriers. Appropriate site selection and orientation with regards to acoustic considerations, could save the project considerable amounts of money on treatment to the external fabric of the building.
- Indoor Ambient Noise Levels (IANL) for each room and its expected use should be considered, taking into account the

ventilation strategy and building services noise. Building services levels may need to be as low as NR18, which requires a large element of coordination between building services engineers and the acoustic specialists.

- Sound insulation between rooms and spaces is highly critical in such a development and for simultaneous use of rooms, high performance walls and floors will be required with a performance in the order of 65 – 75dB Rw likely, with high performance at low frequencies.

The following examples are for typical wall and floor constructions likely to be required, these are not exhaustive more specialist constructions may be necessary:

1. Partition wall: 2 or 3 layers of soundblock either side of a metal stud with resilient bars, and high density insulation within the cavity; overall partition width ranging from 300-500mm. (Any glazing in studio walls should be heavy weight and will require detailed design).
2. Partition wall: high density full height blockwork with a dry lining each side consisting of at least 2 layers of plasterboard with high density insulation in each cavity.
3. Separating floor: high density structural slab of heavyweight concrete with an isolated floating floor finish above and acoustic mass suspended ceiling below of at least 2+layers of 15mm soundblock and high density insulation in the void.

The room arrangement/layout should be considered at an early stage to minimise where possible the need for high performance partitions and floors. Stores and lobbies can be used as a buffers to aid sound insulation between critical rooms. For example, it is noted from the option layouts provided that the main hall is located on the first floor, ideally the hall would be on the ground floor to avoid the need for a high performance floor.

- Reverberation Time design is also critical for music spaces, acoustic treatment to walls and ceilings is likely, including bass traps, panel absorbers and diffusers. All of these are likely to be required in the main hall.
- Room dimensions should also be considered to reduce the effect of flutter echoes and colouration to sound. Room dimensions that are multiples of each other are to be avoided at all costs. Non parallel walls, particularly in the studios can be utilised for this effect.
- Careful design of building services, including no service penetrations through critical partitions or floors.
- Careful design of the junction detailing between walls, floors, ceilings and the external façade is essential.
- All critical music spaces should be modelled using acoustic software, particularly the main hall and large studios to understand and optimise the design.

Mechanical, Electrical & Public Health

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

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8.1 - MEP - Technical Note on MEP requirements

08

MEP INCOMING SERVICES

Incoming Gas

An incoming gas main enters the primary school site underground from Frenchs Road which feeds the school only.

There is currently no incoming gas supply to St Luke's barn.

The existing Barn is currently heated via electrical panel and convectors heaters. It is proposed that the existing system is removed and is replaced with a gas fired boiler heating system. This will remove a large electrical load from the building and will help in removing the risk of upgrading the electrical incoming service.

A new incoming mains gas supply will need to be applied for from the network utility provider for either of the proposed options for the redevelopment of the barn.

It is proposed that the new gas main runs underground from Frenchs Road and rises at the rear of the barns new main plant room.

It is considered that the existing incoming gas supply feeding the school is not adequately sized to suit the increased gas load.

The final capacity of the gas load is dependent on the final heating design.

New estimated gas supply £8,000 – £15,000; cost could be higher if the existing network is unable to take increased load.

Incoming Water

The barns existing mains cold water service enters the site underground and rises internally within the male toilet area adjacent to the wash hand basins. The existing water supply then rises to the loft where it feeds two large water storage tanks one for the cold water down services and the other for electrically heated hot water service.

It is proposed that the existing electrically heated hot water service is replaced with a gas fired hot water generation. This will remove a further large electrical load from the building which will help

further in removing the risk of upgrading the electrical incoming service.

The existing mains water will need to be re-routed to the new plant room through an underground duct.

The new hot and cold water services distribution shall need to be designed in compliance with the local water board requirements.

It is considered that the existing incoming water supply feeding the barn is sized to suit both of the proposed options water load. However the final capacity of the water load is dependent on the final hot and cold water services distribution design.

Estimated upgrade of main water supply £5,000 – £8,000 cost could be higher if the existing network is unable to take increased load.

Incoming Electrical Supply

The existing incoming supply to the barn is provided by UKPN and enters the site underground from Frenchs Road and terminates into a 100 Amp TP&N service head (72KVA) and meter located all located in an electrical service cupboard within the main office.

From a visual inspection of the incoming utility supply service indicates the supply is 100 Amps TP&N, should the supply require upgrading a new service will need to be provided from the main network within Frenchs Road and a new incoming location found due to the existing cupboard not being large enough to house the required CT chamber and meter for a 200amp (144KVA) service head.

A calculation has been carried out based on the overall existing area and the areas of the two proposals using BISRA Rules of Thumb - Guidelines for building services (5th Edition).

The results from the calculation shows the overall extra load required for both of the proposal is 35 amps per phase. This indicates that the existing supply should be suitable for either of the two proposals dependant on final equipment loads.

A load test on the existing incoming supply should been undertaken

over 7 continuous days during term time. This report will determine if the existing 100A services would need to be upgraded to 200A.

A review of the current 5 yearly Periodic Inspection Report shall also be required to ascertain the condition of the current electrical wiring installation should any be retained.

Estimated upgrade of the electrical supply £10,000 – £20,000 cost could be higher if the existing network is unable to take increased load.

Risk Items

- Discovery of uncharted, buried services and obstructions requiring additional surveys and diversions
- Local Authority, Anglian Water, Environment Agency requirements
- Uncharted gas and water mains connections from adjacent sites
- Report findings based on visual, non-intrusive MEP condition site surveys.

Renewable Energy Sources

It is an aim for the End User to have a cost effective and environmentally friendly way to generate energy within the new/ remodelled building. During the next Milestone renewable energy sources should be researched and proposed to meet the current Statutory & Planning requirements and also those that provide costs savings in the running/maintenance of the building.

Options for renewable energy could include but are not limited to:

- Solar - Photovoltaic
- Solar - Thermal heaters
- Ground Source Heat Pump (GSHP)

Sustainable Design

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



9.1 - Technical Note on Sustainability requirements

09

EXISTING BUILDING

St.Lukes Barn is a community and sports facility. The Barn is situated within the grounds of St. Luke's School in Arbury. It was built by the Council in 1987 on land owned by Cambridgeshire County Council and we have correspondence indicating that following completion the building was handed over to the Trustees of the Church Schools of Cambridge (The Old Schools) who own the access road to the Barn.

The Barn has been managed by St.Luke's School since 2004 through annual Service Level Agreements with the Council. It is primarily used for badminton (by the University and Bottisham badminton clubs) and by the school for activities and meetings. There are a couple of first floor meeting rooms which can only be accessed via a narrow staircase.

The Barn is constructed with large curved timber beams (Glulam beams) which are covered with corrugated aluminium sheets. The sheets have 150mm thick internal 'rock wool quilt' insulation fixed to their underside. The Barn is very poorly insulated and inefficient to heat. A dehumidifier is used in the sports hall to try and minimise the effects of condensation. The building also present single glazing windows and no shading devices.

Therefore, the Barn now requires substantial modernisation, repair and decoration if it is to be retained for community use into the future.

IMPROVED BUILDING - PROPOSED ENVIRONMENTAL STRATEGIES

BUILDING SERVICES

The mechanical services will include the following elements:-

- Plant Areas
- Ventilation systems
- Domestic hot and cold water systems.
- Automatic controls
- Internal sanitary pipe work
- Natural gas
- Water pumps
- Underfloor Heating System
- Sub metering

All plant selection, installation, commissioning, controls and energy monitoring devices and procedures shall meet and exceed the current regulations.

PLANT AREAS

A new plant room will be located on the south facing of the existing building. The plant room will accommodate new condensing heating boilers of approximately 130 kW of total capacity.

New gas fired heating boilers will help in reducing energy consumption and CO2 footprint.

External Plant

The new incoming gas service pipe, new gas meter and the existing gas house will be provided within the site boundary at a location as agreed with the project architect.

VENTILATION

The system will primarily be a mixed mode ventilation system. Ventilation system will employ mostly manual openable windows, thermally broken glazed louvres, automatic windows actuator and MVHR system.

The ground & first floor proposed studios will be equipped with MVHR fan system with a CO2 sensor.

The reception will be equipped with an air curtain.

All the doors and windows will be equipped with max in glazed type trickle ventilator (TITON) for background ventilation.

The corridor ventilation will be aided by extracting some air via undercutting toilet doors by 10mm and high level louvres.

All toilets and kitchenette shall have extract fans. The disable, Male and Female WC's will have a MVHR fan system. All extract fans will be coupled with smart sensor, it will trickle at set rate and will boost to maximum set speed by PIR sensor. All the toilet doors will be undercut by 10 mm. Kitchen door will be equipped with intumescent type air transfer grille.

The store doors will have a low and a high level air transfer door grilles.

All office and store will comply with AD Part F.

Air volumes will be established by consideration of heat gains and also the air change rate necessary for comfort and safety as appropriate for the activity carried out in each area.

LPHW Heating Systems

New heating plant could consist of 2 No. 65 kW wall hung type cascaded condensing boilers.

All the areas will be divided in different zones and each zone will have a dedicated zone valve.

All areas shall be served by underfloor heating.

All motorised manifolds for underfloor heating shall be located in the store or as agreed by the architect.

Circulating pumps will be provided on duty and standby basis by a variable twin headed pumps.

Reception Lobby

The reception will have an air curtain.

9.1 - Technical Note on Sustainability requirements

Cold Water Service

Water is a scarce resource and costs are rising rapidly. A public place that is equipped with water conservation devices may use less than 50% amount of water used in other public places. Installations such as cistern dams, urinal controllers, flow restrictors and self-closing taps, PIR operated valves save water and money.

The Cold Water Mains Services shall be designed in compliance with the local water board requirements. Mains water will be provided from the existing local authority supply. Water consumption will be monitored and recorded using pulsed output water meter to the BMS system.

Following flow rate is recommended, which have been found to achieve a saving of at least 25% on top of consumption rate set by BS EN 806.

Component	Rate	Unit	Comments
WC	4.5	Effective Flush Volumes	Actual maximum
WHB Taps	5	litres/min	Flush Volumes flow rate of each tap at a dynamic pressure.
Kitchen Tap: kitchenette	5	Litres/min	Maximum flow rate
Domestic Washing Machines	40	Litres/use	For a Typical wash Cycle
Domestic Dishwashers	12	Litres/cycle	For a Typical wash Cycle

The existing incoming cold water mains for building shall be equipped with a sample point and with a Hydromag type physical water conditioner. This measure will increase the longevity and will help to maintain the efficiency of this appliances connected to it.

Hot Water Service

Proposed new build hot water demand will be provided mainly by point of use water heaters. As point of use water heaters are more efficient for this intermittent type used building (as it does not have stored energy losses).

The pipework shall be disinfected in accordance with Health & Safety Procedure HSG 70. On completion, a Certificate of Disinfection must be issued, giving all relevant details and dates.

Leak Detection System

Mains cold water and gas will be equipped with a leak detection system

Automatic Controls

A fully integrated Building Management System would be incorporated to provide operation and control of all items of building services plant and equipment. The control shall comply with CCC's TAN, Building Bulletin and IGEM requirements.

The controls would ensure the required internal environmental conditions and time schedules are achieved for the external conditions encountered.

The following software features will be included as standard within the system to deliver an efficient heating system:

- First and second stage frost protection.
- External ECO high limit
- Occupation time ECO high limit room temperature
- Boost control to occupation time
- Optimiser control
- Time and Temperature control on heating zones.
- Boiler sequence control
- Boiler Direct Compensation Control
- Pump Duty Change-over
- Summer / winter control
- Plant Hours Run
- Plant alarms
- On site user screen

ENVIRONMENT & SUSTAINABILITY

Options for Environmental Measures in Design

Our aim is to design the most energy efficient building and services that meet the needs of the occupants, are responsive to the external climate, have minimal carbon footprint and are realistic in terms of buildability and cost constraints.

As part of the design it is the intention to target an EPC rating of B. It is therefore essential that the building incorporates measures to ensure energy efficiency and therefore in the development of the

services strategy, we consider the following criteria:

Be Lean

- Minimise consumption of energy and valuable natural resources.
- Minimise waste
- Reduce energy costs
- Keep it simple

Be Clean

- Use energy efficiently
- Recovery energy
- Minimise emissions
- Selection of fuel sources

Be Green

- Use renewable energy
- Local source
- Local generation
- Ethical/fair trade

Be Realistic

- Affordable
- Actually works
- Total satisfaction
- Provides long life durability

Key strengths of the proposal are the replacement of existing external fabric which are extremely energy inefficient with a new energy efficient envelope and with a new energy efficient services.

Fabric of the building

The building fabric, structure and orientation has a significant effect on the environmental control of a building.

The choices in materials, configuration and arrangement influence the heating capacity, the quantity of solar gains admitted and therefore the type and sizes of mechanical equipment required. Designing the building fabric, structure and orientation to act as a filter and as a damper of outdoor extremes can greatly simplify the mechanical services solutions required.

9.1 - Technical Note on Sustainability requirements



CIBSE Guide AM13:2000 states that “Using the building fabric to harness alternative natural cooling methods can achieve major cost savings in terms of mechanical systems. Temperature reductions of 3-4°C below design outdoor peak conditions can be achieved for normal office use, with greater cooling effect during periods of exceptionally hot weather.”

It is recommended that the insulating U-values for major construction elements be of a high performance, in order to meet or better the requirements of Part L. The U-values provided within the table below have been found to offer a good level of performance and typically are able to achieve the requirements of Part L. The U-values are a significant factor in achieving a compliant CO2 emission figure in terms of Part L of the Building Regulations for the proposed design.

Building Element	Existing U-Value (W/m²K)	Proposed U-Value (W/m²K)
External Walls	0.7	0.18
Floor	0.35	0.15
Roof	0.35	0.15
Windows / Louvre	2.25	1.4
Personnel Doors	2.25	1.8

Avoidance of Solar Overheating

The summertime temperature performance requirement shall be tested in accordance with the CIBSE TM52 criteria:

In order to achieve the above requirements and also to comply with the solar gain limits detailed within Part L of the Building Regulations, the avoidance of solar overheating will be a significant part of this project.

It is envisaged that the south elevation of the building is likely to receive high levels of solar gains in the middle part of the day. This will be overcome by incorporating overhangs, recessed windows and solar controlled glazing.

Ventilation

The role of ventilation within the building will primarily be to satisfy the following functions:-

- To provide adequate fresh air for the occupants while removing/diluting pollutants
- To reduce summertime peak temperatures

It is the design intent to form the spaces where possible to maximise the use of natural ventilation during time of the season when temperatures and activity in the space allow.

Air Tightness

The air tightness of the building impacts on its energy consumption and CO2 emission. The more airtight the building, the less energy is required to heat it during cold periods. Part L2 of the Building Regulations states that air permeability must be less than 10m3/h/m2 at 50Pa. As part of the project it is the intention to target an air permeability of 5m3/h/m2 at 50Pa in order to comply with Part L and achieve energy efficient operation.

Daylighting

Glazing that will be provided throughout the building will offer a number of functions including good daylight penetration, natural ventilation, heat loss, heat gain and views out. Maximising the use of daylight also provides an opportunity to switch off artificial lighting manually or automatically, reducing energy and CO2 emissions.

Good daylight penetration contributes to a pleasant environment within the building. Good daylight levels are considered to provide a feeling of well-being and stimulate individual performance. It is the design intent to form the spaces where possible to maximise the use of natural daylight along with natural ventilation discussed earlier in this report.

Where natural daylighting is insufficient to balance ambient artificial lighting will be used to meet the requirements of the space.

It will be demonstrated through computer modelling that illuminance levels will be minimum 300 lux for 9 a.m. and 3 p.m., on a clear-sky day at the equinox, for the 75% of the regularly occupied floor area.

Thermal Modelling

The building shall be thermally modelled to determine the internal temperature profile. The model will determine choice of construction materials and the solar control measures required.

Low and Zero Carbon Technologies

There are a number of Low and Zero Carbon Technologies that will be considered as part of this development.

The final selection of LZC installations will be agreed in the next stage.

Design Criteria

It is necessary to establish outdoor and indoor conditions at this stage in order to determine approximate plant size and costs. Outdoor design conditions are based on the reference data utilised by IES Virtual Environment thermal modelling software. The reference station selected is Norwich as this is the nearest data available.

Summer Design Temperatures

The reference data indicates that the design temperature for summer conditions should be 28.7°C (db) 19.6°C (wb). This is based on Norwich reference data.

Winter Design Temperatures

The reference data indicates that the design temperature for winter conditions should be -2.0 °C (db) 100% Sat. This is based on reference data for Norwich. However, we will be considering -5.0 °C (db) 100% Sat for this project.

Heating and HWS Energy Consumption

New heating gas fired heating boilers will be used with underfloor heating system. The new heating boilers selection and new control system will be selected to ensure that the energy consumption and CO2 produced per annum is reduced.

The new gas fired condensing heating boilers with underfloor heating system will save energy consumption by eliminating the need the use of electric fan convectors. This will not only save the energy consumption per annum but also save CO2 produced per annum.

Based on benchmark data of existing building of this age, it can be observed that proposed work especially for option 1 will improve the energy consumption.

9.1 - Technical Note on Sustainability requirements

If lighting and its control is improved and after converting electrical heating system to gas heating system it will improve the energy consumption efficiency by at least 50% in total and hence the CO2 emission will come down by a minimum of 60%. The figures below are based on assumption that building envelope will be brought to current standard. This will include measures such as increasing the U-values, airtightness, thermal bridging etc.

For this calculation, we have taken a pessimistic view for the electrical consumption and we have considered only 40% improvement overall. These days 60 - 80% efficiency can be achieved in lighting load alone.

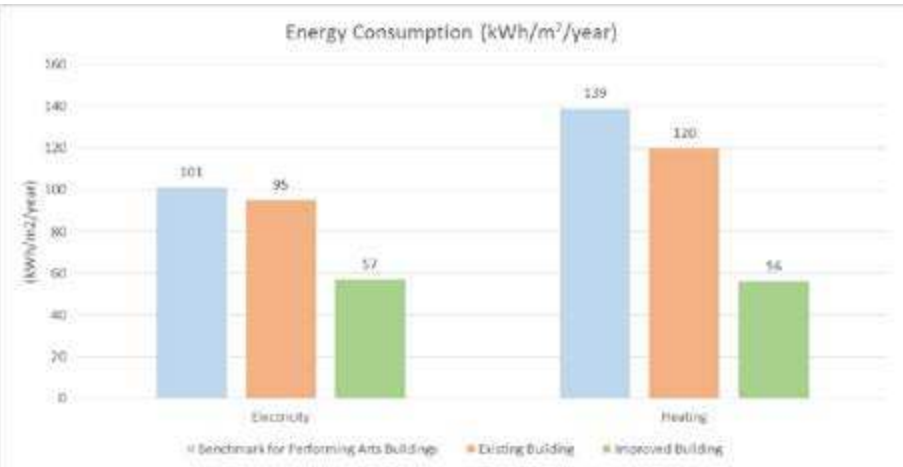
Heating with under floor heating which will be operated at low temperature combined with condensing boilers can bring substantial energy saving. For this calculation we have considered 195 heating days and 12 hrs opening hours per day.

Description	Existing Consumption kWh/m ² /yr	% Improvement	Proposed	Improved Consumption kWh/m ² /yr	Existing CO ₂ kg/m ² /yr	Improved CO ₂ kg/m ² /yr
Electrical (Lighting & Small Power Load)	95	40	New LED, Compact Fluorescent Lighting etc.	57	39.14	23.48
Heating (Electrical)	120	N/A	Condensing Boiler & UFH	N/A	49.44	N/A
Heating (gas)		64		56		10.36
Total	215			110	86.52	33.74

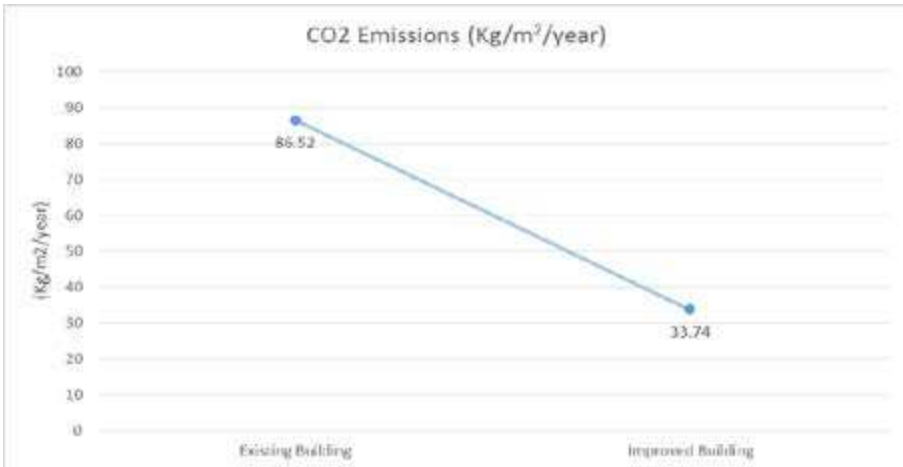
Summary of Energy Efficiency Methods

The proposed development will be designed to incorporate the following energy efficiency measures:

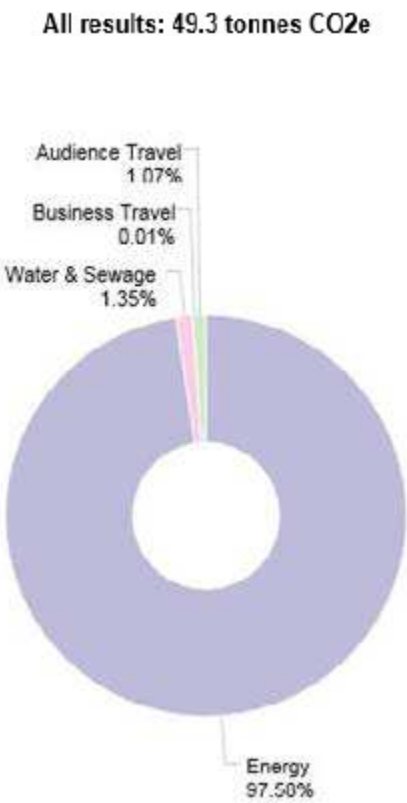
- Computer modelling techniques will be fully utilised to ensure internal environment and aid in the design of the mechanical and electrical services.
- The use of an efficient building envelope that utilises U-valves that offer reduced heat loss resulting in a reduction of CO2 gases.
- The incorporation of a predominantly natural ventilation system and use of mechanical heat recovery fans where it is necessary to maintain the use of space.



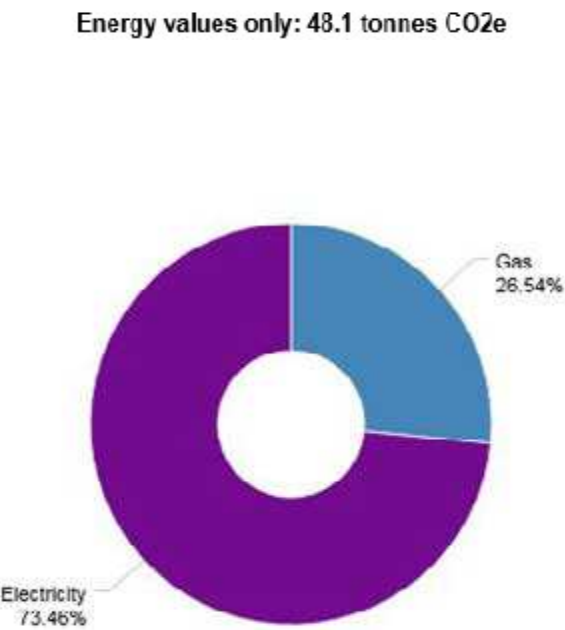
Energy consumption comparison chart



CO₂ emissions comparison chart



CO₂ emissions chart. Source: Julie's Bicycle



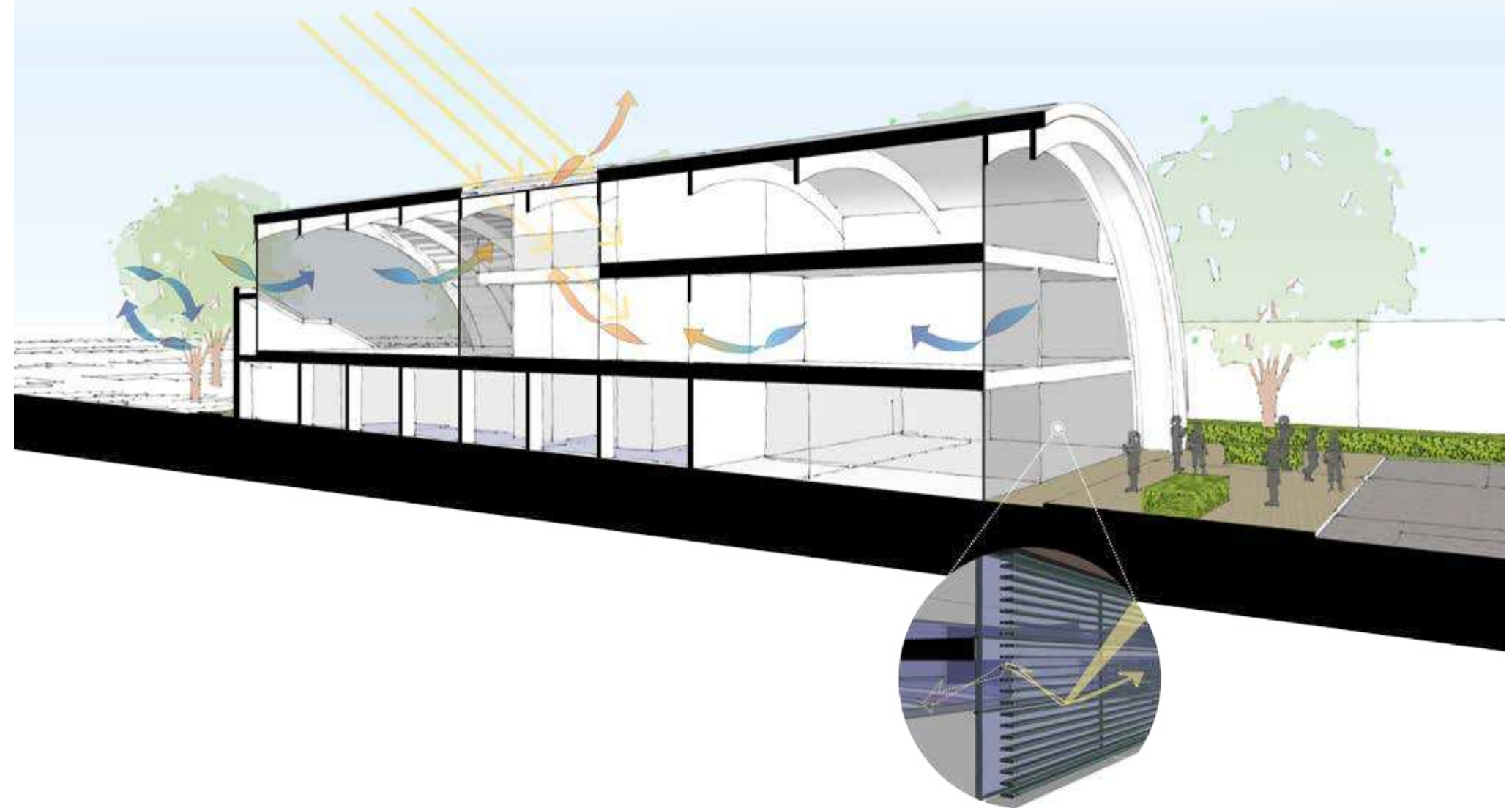
CO₂ emissions chart. Source: Julie's Bicycle

9.1 - Technical Note on Sustainability requirements

- Introducing a new heating condensing boilers to replace electric fan convectors etc. complete with new control system. This will save energy consumption and in turn this will reduce CO2 emission per annum.
- Zoning and introducing new heating controls can save energy from 5-10% of the heating bill. Operating the heating systems for an hour less each day will save a similar account.
- Using energy efficient lighting which will save energy consumption, lighting accounts for around half of the electricity used in a typical art and studio building.
- By using and selecting electrical efficient equipment and enabling power management features.
- Daylight and presence detection to automatically control the lighting systems in appropriate locations and consequently the energy used.
- All external lighting will be controlled by a suitable time clock and photocell to offer energy efficient operation.
- Regular maintenance will ensure that the proposed efficiencies are continued and where possible, by the introduction of appropriate new technology, enhanced during the lifetime of the building.
- Install smart metering.

Improvements to the existing buildings

The energy performance of the existing building will be significantly improved with the renewal and upgrade of the existing services and heating system as well as improvement to certain parts of the internal and external fabric.



Environmental performance scheme of the proposed building (Option 01)

Construction Issues

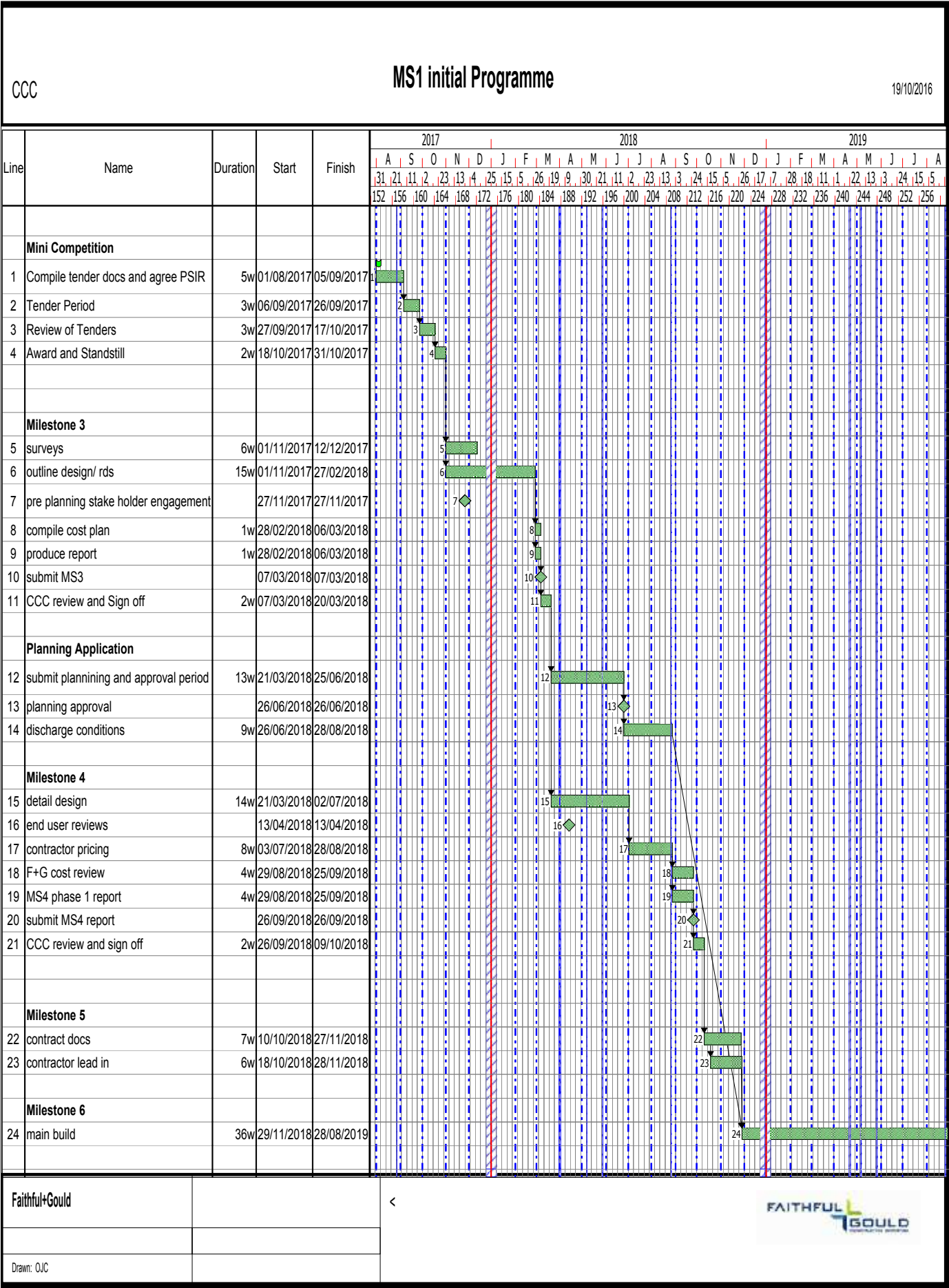
St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report

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10.1 Programme Option 1 (Preferred Option)



10.1 Programme

Programme

An outline programme has been developed and included in this report which targets the following key dates:

Milestone 2 (Mini-Tender)

01 August 2017 – 31 October 2017

Milestone 3

1 November 2017 – 20 March 2018

Milestone 4

21 March 2018 – 9 October 2018

Milestone 5

10 October 2018 – 28 November 2018

Milestone 6 to Handover

29 November 2018 – 28 August 2019

Please note the above is based on the following assumptions:

1. Approval to proceed is given by Cambridge County Council.
2. Programme is based on the new build development, if a different option is taken forward then the programme would need to be reviewed and updated to reflect this.
3. Site logistics (access etc) will need to be agreed with the school. It has been assumed that by utilising decant space and the necessary segregation the construction works can take place during the school term time, again to target the earliest completion date as is practical.

10.2 Risk Register



Where **IMPACT OF RISK x LIKELIHOOD OF RISK OCCURING = DEGREE OF RISK**

Impact			
Rating	Programme (P)	Budget (B)	Safety/Health/Environmental (SHE)
5	Client/Business stakeholder interests severely damaged	Budget overrun which impacts on client's programme of works	Multiple fatality Major environmental incident involving threat to public health or safety Criminal liability
4	Programme overrun resulting in penalties and additional audits	Significant and non-recoverable impacts in budget spend	Worker/Public fatality Environmental incident leading to breach Criminal liability and compensation costs
3	Minor and recoverable programme overrun that impacts critical path	Minor and recoverable budgetary fluctuations	Major injury to worker or third party Operation likely to cause damage, complaint or nuisance
2	Minor delays not impacting on critical path	Minor budgetary fluctuations within allowance given by client	Minor injury to worker or third party Environmental impact requiring management response to recover
1	Negligible impact	Negligible impact	Negligible impact

Project Number: **5139049**

Project Location: **St Lukes Barn, Cambridge, Cambridgeshire**

LIKELIHOOD	
5	Almost Certain (>91%)
4	Probable (51-90%)
3	Possible (31-51%)
2	Unlikely (11-30%)
1	Negligible (<10%)

=

DEGREE OF RISK					
5 - Catastrophic	5	10	15	20	25
4 - Critical	4	8	12	16	20
3 - Serious	3	6	9	12	15
2 - Marginal	2	4	6	8	10
1 - Insignificant	1	2	3	4	5
	1 - Improbable	2 - Could Happen	3 - As Likely As Not	4 - Very likely	5 - Highly Probable

Likelihood (L/H)

PROJECT RISKS

Date Issued: **30/03/2015**

Current Milestone: **MS 1**

Issue Number: **1**

Design Team Partners Ref:

Contract Risk Assessment

Item No.	Risk	Risk Owner (Named Person)	Consequence	Calculation of Risk					Risk Mitigation / Control Measure / Comments	Min. Cost £	Max Cost £	Weighted Cost £	Close-out Date
				Impact			x Likelihood	Degree of Risk (max)					
				P	B	SHE							
	SITE RISKS												
1	Hazardous materials discovered during site activities affecting critical path activities. Risk of exposure, poorly controlled removal.	Client / Design Team	Effect on programme and cost	2	4	4	2	8	Site Survey during design phase to be completed of all work areas and service routes. Monitor works on site establish any issues as early as possible. Early liaison with local authority regarding historical records of contamination in the local area.	TBC	TBC	TBC	MS 3
2	Potential for site flooding issues.	Design Team	Impact on design, and cost of design. Programme.	2	3	2	1	3	Complete FRA during concept phase during MS 3, undertake analysis of site, establish causes and propose new system.	TBC	TBC	TBC	MS 3
3	Unforeseen obstructions in ground.	Client /Structural Engineer	Prog and Cost	4	4	4	3	12	Undertake suitable ground investigations to establish general ground conditions	TBC	TBC	TBC	MS 3
4	Contaminated ground	Client	Prog and Cost	3	3	3	3	9	Undertake suitable ground investigations to establish risk, monitor soil contamination during progress on site.	TBC	TBC	TBC	MS 3
5	Delays due to issues relating to drainage scheme not suitable i.e. Flow rates, connections etc	Client	Prog and Cost	4	3	3	1	4	Establish dialogue with EA to confirm flow rates and design principles	TBC	TBC	TBC	MS 3
6	Substructure requirements unknown	Design Team	Cost	2	3	1	2	6	Investigate further during design phase.	TBC	TBC	TBC	MS 3
7	Capacity of UK Power Networks	Electrical Engineer	Prog and Cost	3	2	1	1	3	Assessment of Electrical load requirements to be issued to UKPN to review requirements and capacity of local distribution.	TBC	TBC	TBC	MS 3
8	MOLAS/Unexploded bombs assessments	Client / Design Team	Prod and Cost	3	3	3	1	3	Undertake suitable ground investigations.	TBC	TBC	TBC	MS 3
9	Site specific restrictions from ecological/archaeological findings etc	Client / Design Team	Prog and Cost	3	3	1	2	6	Further surveys required during design process to establish existing site conditions.	TBC	TBC	TBC	MS 3
	DESIGN/TEAM												
10	MS 1 & 2 Report not signed off by client	Client/Design Team	Prog and Cost	3	3	0	2	6	Project Manager to ensure design team provide all required information and client signs off all related reports	TBC	TBC	TBC	MS 1 & 2
11	Changing legislation	Design Team	Impact on design and cost.	3	2	2	3	9	Design Team to review any proposed changes in legislation before progressing with design.	TBC	TBC	TBC	MS 3
12	Planning process	Design Team	Programme and may impact design	4	2	0	4	16	Concern for receiving approval for alternations to principle entrance with the Highways Agency.. Submit request for Pre-Application Consultation. Timely submission of full planning application	TBC	TBC	TBC	MS 3
13	Planning objections	Design Team	Programme and may impact design	3	2	0	4	12	Early consultation with public (neighbouring landowners) and planning department	TBC	TBC	TBC	MS 3

10.2 Risk Register

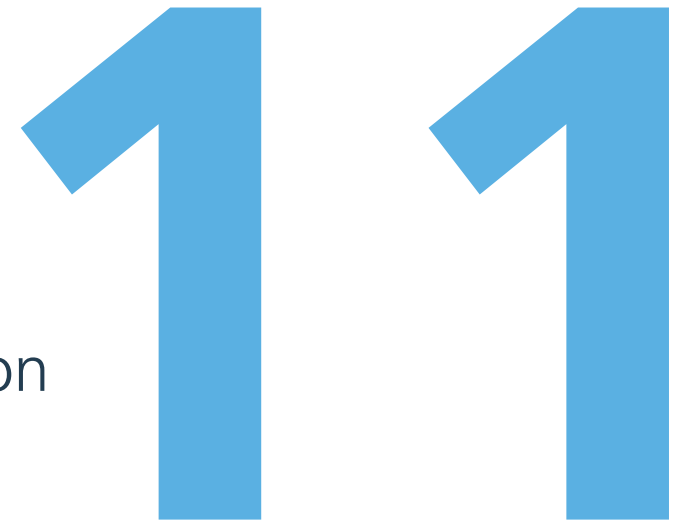
Item No.	Risk	Risk Owner (Named Person)	Consequence	Calculation of Risk					Risk Mitigation / Control Measure / Comments	Min. Cost £	Max Cost £	Weighted Cost £	Close-out Date
				Impact			x Likelihood	Degree of Risk (max)					
				P	B	SHE							
14	Aspirations/expectations of client different from design team understanding	Client / Design Team	Programme and may impact design	2	3	1	2	6	Thorough interrogation of brief during MS 3 to be undertaken	TBC	TBC	TBC	MS 3
	FUNDING/CLIENT												
15	Project not given funding	Client	Programme and may impact design	2	2	0	2	4	Client to provide full details of available budget	TBC	TBC	TBC	MS 3
16	Insufficient funding to meet FF&E budget	Client	Cost	2	2	0	2	4	Client to provide full details of available budget	TBC	TBC	TBC	MS 3
17	Project Delays	Client / Design Team	Prog and Cost	4	3	0	3	12	Detailed programmes to be produced and regularly reviewed	TBC	TBC	TBC	MS 3
	CONSTRUCTION												
18	Contractor going into liquidation	Client	Prog and Cost	4	4	1	2	8	Client to carry-out regular financial check & include performance bond in tender	TBC	TBC	TBC	MS 3
19	Claims for delays caused by information feed not being met by design team	Design Team	Prog and Cost	2	2	1	2	4	Design Team to produce information required schedule with contractor to ensure all required information is made available	TBC	TBC	TBC	MS 3 - 6
20	Failure of contractor to meet established programme	Client	Prog and Cost	4	3	1	3	12	Works onsite to be closely monitored	TBC	TBC	TBC	MS 3 - 6
21	Construction Period Insufficient	Design Team / Contractor	Programme and may impact design	4	2	1	3	12	Detailed programmes to be produced	TBC	TBC	TBC	MS 5 - 6
22	Inadequacy of sub-contract labour	Contractor	Prog and Cost	3	1	1	2	6	Vet, review and regularly monitor sub-contractors	TBC	TBC	TBC	MS 5 - 6
23	Vandalism during construction process	Contractor	Programme	2	2	1	3	6	Contractor to ensure site security	TBC	TBC	TBC	MS 5 - 6
24	Location of extension disrupting school activities	Design Team / Contractor	Prog and Cost	4	3	3	3	12	Contractor to ensure site security	TBC	TBC	TBC	MS 5 - 6
25	Proposed works cannot be carried out in term time	Design Team / Contractor	Prog and Cost	4	4	2	3	12	Appropriate phasing and timing of works is agreed with the school. Additional temporary provision may be required for catering / kitchen facilities whils hall area is remodelled	TBC	TBC	TBC	MS 5 - 6
26	Land Issues	Client	Programme / Cost / design	4	4	2	3	12	Client to confirm and resolve Land issues	TBC	TBC	TBC	MS3
Sum carried forward to project cost plan as Risk Provision										0	0	0	

Cost Summary

St Luke's Barn

The Centre for Research and Engagement for Arts & Technology in Education

Milestone One Report



11.1 Cost Summary - Options 1 & 2

ST LUKE'S BARN MUSIC CENTRE

Milestone 1 Feasibility Budget - Options 1 & 2 v6
16-Oct-16



Gross internal floor areas	
Studio new build areas	
Studio remodelled areas	
Total - All studios	
All other new build areas	
All other remodelled areas	
Total - All other areas	
Total new build areas	
Total remodelled areas	
Inflation after 1Q2019 is excluded.	

Ref	Element
1.00	NEW BUILD
1.01	Studios
1.02	Other new build areas
1.03	Enhanced acoustics to main hall
	Sub-total (£)
2.00	WORKS TO EXISTING BUILDINGS
2.01	Internal remodelling and refurbishment works to studios
2.02	Internal remodelling and refurbishment works to all other areas
2.03	New roof throughout
2.04	New windows and external doors
2.05	Demolition works
	Sub-total (£)
3.00	EXTERNAL WORKS
	Sub-total (£)
4.00	INFLATION & REGULATION CHANGES
4.01	Adjustment made to mid-point of construction (1Q2019)
4.02	Allowance for changes to Building Regulations
4.03	Allowance for the impact £/Euro exchange rate
	Sub-total (£)
5.00	PRELIMINARIES
5.01	Fixed preliminaries
5.02	Time related preliminaries
5.03	Site specific
6.00	PRE-CONSTRUCTION & DESIGN FEES
6.01	Main Contractor's pre-construction fee MS3-4
6.02	Consultants' design fees MS3 - 4
6.03	Surveys
6.04	Consultants' design fees MS5 - 8
	Sub-total (£)
7.00	CONTRACTOR'S RISK ALLOWANCE
7.01	Contractor's design risk
	Sub-total (£)
8.00	MAIN CONTRACTOR'S OVERHEADS & PROFIT
8.01	Main Contractor's overheads & profit
	TOTAL ANTICIPATED CONTRACT SUM (£)
9.00	PROFESSIONAL FEES
9.01	Professional fees MS1-2/mini tender
9.02	Project Manager, QS and NEC Supervisor (MS3-8)
9.03	Health & Safety Advisor (MS 3-7)
9.04	Legal fees and other direct fees
10.00	LOCAL AUTHORITY FEES
10.01	Planning fees
10.02	Building Control fees
11.00	EMPLOYER'S OTHER DIRECT COSTS
11.01	ICT installations
11.02	Loose furniture
12.00	OUTSTANDING RISK
	Sub-total (£)
13.00	INTERNAL FEES
13.01	Employer's internal costs / programme management fees
	Sub-total (£)
14.00	EMPLOYER'S RISK
14.01	Employer's change risk/contingency
	TOTAL ANTICIPATED PROJECT COST (£)
	TOTAL ANTICIPATED PROJECT COST ROUNDED (£)

OPTION 1		
Total		
m²		
74		
177		
251		
282		
706		
988		
356		
883		
1,239		

MS1 Cost Plan		
	£	£/m²
	192,400	2,600
	382,778	1,357
	150,000	750
	725,178	2,037
	312,405	1,765
	582,450	825
	256,354	220
	37,170	53
	-	-
	1,913,557	1,544
	220,000	178
	2,133,557	1,722
4.81%	102,624	83
3.00%	67,085	55
5.50%	126,680	103
	2,429,946	1,963
36 wks	32,848	27
	108,242	87
	29,473	24
	9,122	7
	112,370	91
	35,969	29
3.09%	75,085	61
	2,833,055	2,289
1.50%	42,496	34
	2,875,551	2,323
2.75%	79,078	64
	2,954,629	2,387
	19,861	16
4.75%	140,345	113
0.233%	6,884	6
	5,000	4
	15,000	12
	-	-
	20,000	16
	50,000	40
5.00%	147,731	119
	3,359,450	2,713
1.00%	33,595	27
	3,393,045	2,740
5.00%	147,731	119
	3,540,776	2,859
Option 1	3,541,000	2,858

OPTION 2		
Total		
m²		
262		
-		
262		
907		
-		
907		
1,169		
-		
1,169		

MS1 Cost Plan		
	£	£/m²
	681,200	2,600
	1,590,878	1,754
	150,000	750
	2,422,078	2,072
	65,000	n/a
	2,487,078	2,128
	280,000	240
	2,767,078	2,368
4.81%	133,096	114
3.00%	87,005	74
5.50%	164,295	141
	3,151,474	2,697
36 wks	28,475	24
	232,725	199
	49,492	42
	38,416	33
	172,386	147
	29,998	26
2.49%	78,472	67
	3,781,438	3,235
1.00%	37,814	32
	3,819,252	3,267
2.50%	95,481	82
	3,914,733	3,349
	19,861	17
4.24%	165,985	142
0.199%	7,790	7
	5,000	4
	15,000	13
	-	-
	20,000	17
	50,000	43
5.00%	195,737	167
	4,394,106	3,759
1.00%	43,941	38
	4,438,047	3,797
3.00%	117,442	100
	4,555,489	3,897
Option 2	4,556,000	3,897

F+G comments
Option 1: Remodelling works and new build extension to the existing building. Option 2: Demolition of existing building and construction of new build music centre.
Studio areas comprise large studios, small studios and recording studios.
All other areas include the main hall, music library, workshop, offices and ancillary areas.
Benchmark rate of £2,750/m² (inc. preliminaries) to new build studio areas. Allow £2,600/m² as net building rate (excluding preliminaries shown below). Benchmark rates applied to all other areas. Alconbury benchmark used for roof, external walls and windows/external doors for Option 2. Allow £150k. Total area of main hall is 200m².
Allow £1,765/m² to all remodelled studio areas (based on modular design £30K for 17m²). Allow £825/m² to all other remodelled areas. Based on Alconbury Weald benchmark, £300/m² to roof area (8m high and 34m long semi-cylinder). Based on Alconbury Weald benchmark, £30/m² applied to total GIFA. Based on £100/m². Total area to be demolished 650m² as per RC email 27.03.15.
Based on Landscape Option 1 (no allowance for a new access road). Allowance added for 350sqm of grasscrete, 2nr set of double gates and 1nr single gate.
Inflation to 1Q2019 construction mid-point. Allow 3% increase due to updated Building Regulations.
Option 1 contractor prelims based on average Lot 1 band 2 framework rates. Option 2 contractor prelims based on average Lot 2 band 1 framework rates.
Option 1 contractor surveys and fees based on average Lot 1 band 2 framework rates. Option 2 contractor surveys and fees based on average Lot 2 band 1 framework rates.
Option 1 contractor design risk and OH&P based on nearest-to-average Lot 1 band 2 framework rate. Option 2 contractor design risk and OH&P based on nearest-to-average Lot 2 band 1 framework rate.
Feasibility fees plus 1 mini tender fee As per fee call off schedule. As per fee call off schedule. Allow £5k.
Allow £15k. Included in contractor's design fees.
Allow £20k for computers and printers to offices only. As per FF+E calc. Furniture to kitchens and changing rooms and supply of musical instruments excluded.
Allow at 5% of anticipated contract sum.
Allow at 5% for Option 1 (remodelling) and 3% for Option 2 (new build).

11.2 Cost Summary - Assumptions & Exclusions

ST LUKE'S BARN MUSIC CENTRE

Assumptions and exclusions

- 1 VAT is excluded.
- 2 Option 1: Remodelling works and new build extension to the existing building.
 Draft programme: *Inflation to 1Q2019 construction mid-point.*

Start	24/09/2018	3Q 2018	Estimate period TPI:	261	2Q2015
Completion	31/05/2019	2Q 2019	Mid construction TPI:	270	1Q2019
	36 weeks			3.45%	
- 3 Option 2: Demolition of existing building and construction of new build music centre.
 Draft programme: *Inflation to 1Q2019 construction mid-point.*

Start	24/09/2018	3Q 2018	Estimate period TPI:	261	2Q15
Completion	31/05/2019	2Q 2019	Mid construction TPI:	270	1Q2019
	36 weeks			3.45%	
- 4 Inflation after 1Q2019 is excluded.
- 5 The additional cost to the overall project value to utilise Landscape Option 2 instead (new access road from Rackham Close, less grasscrete) i £ 80,000
- 6 The additional cost to the overall project value to utilise Landscape Option 3 instead (new access road from Chesterton Mill, less grasscrete) is £ 20,000
- 7 Option 1 contractor's preliminaries, mark-ups and fees based on the average of current lot 1 band 2 CCC framework rates. I should be noted, however, that a new contractor framework will be in place before this project is tendered so the rates should be treated with some caution.

 Option 2 contractor's preliminaries, mark-ups and fees based on the average of current Lot 2 band 1 CCC framework rates. See comment above
- 8 regarding contrator framework.
- 9 No allowance for audio equipment, musical instruments and IT equipment outside of the offices has been included.
- 10 No allowance for loose FF&E to the changing rooms, kitchen/kitchenette and stores has been included.
- 11 No allowance for MS2 fees other than for the mini tender has been included.

12 Total area of studios for Option 1:

	New build	Refurb
Small studio	0	108
Large studio	74	49
Recording	0	20
Total (m²)	74	177

13 Total area of studios for Option 2:

	New build
Small studio	126
Large studio	120
Recording	16
Total (m²)	262

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