# WHITEFRIARS REHABILITATION CENTRE - PROJECT CONTEXT & BRIEF

GETTING COVENTRY'S PEOPLE MOVING FORWARD AGAIN



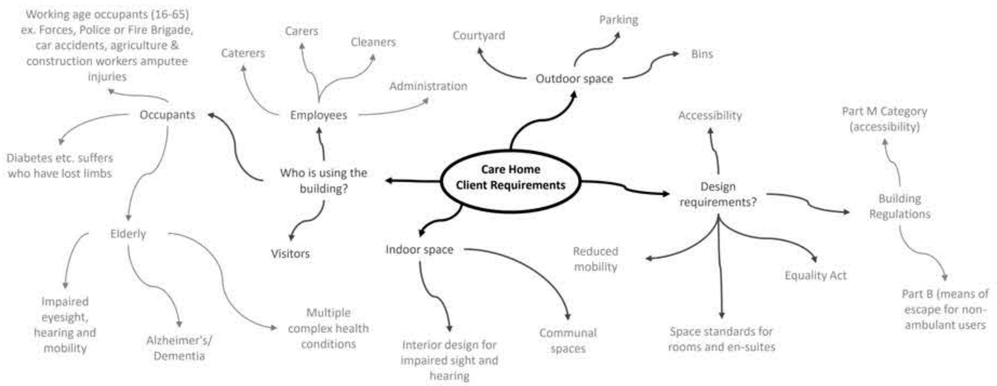
## 1.0 | DPA | S-0 | STRATEGIC DEFINITION | CLIENT REQUIREMENTS | STRATEGIC PROJECT BRIEF, PROJECT RISKS

1.1 | CLIENT REQUIREMENTS | **STRATEGIC PROJECT BRIEF:**
Design a care home that will serve the needs of local residents, establish a business case for the type of care home best suited to the site.

1.2 | CLIENT REQUIREMENTS | **PROJECT RISKS | SWOT ANALYSIS | THOUGHTS:**
The proposed function for the site is to be a care home, the following are the Strengths, Weaknesses, Opportunities and Threats of the chosen site (SWOT Analysis).

| Strengths | Weaknesses | Opportunities | Threats |
|---|---|---|---|
| • Inner city location provides easy access for employees with multiple means of transport.<br>• Flat landscape better for accessibility.<br>• There is some existing green space and mature trees. | • Inner city location next to a ring road does not make for a very peaceful location for those in care.<br>• Only one main access road to the site and narrow entrance for construction deliveries.<br>• Pollution and noise from ring road. | • With the university next to the site, there is an opportunity to include a research or student experience element to the development.<br>• Coventry Health Centre located 16minute walk and 4 minute drive from the proposed site. | • Opposition to the development might occur from the neighbouring building owners if they don't agree with the development.<br>• White Friars gatehouse near by, possible foundations of historic buildings, archaeological survey required. |

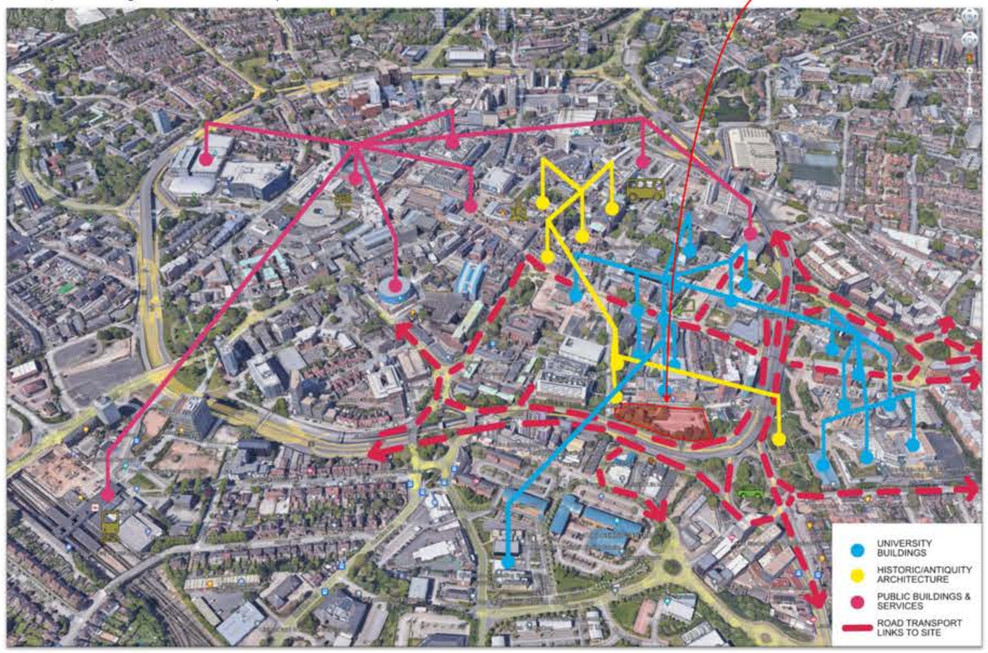
1.3 | CLIENT REQUIREMENTS | **PROJECT RISKS | SPIDER DIAGRAM:**




## 2.0 | DPA | S-0 | STRATEGIC DEFINITION | SITE APPRAISAL | SITE CONTEXT | KEY LINKS

2.1 | KEY LINKS | **SUMMARY:** This Google Earth image below with links lines, shows the location of the University Buildings, Historic/Antiquity Architecture, Public Buildings & Services and road transport links to the site in relation to and in connection to one another.

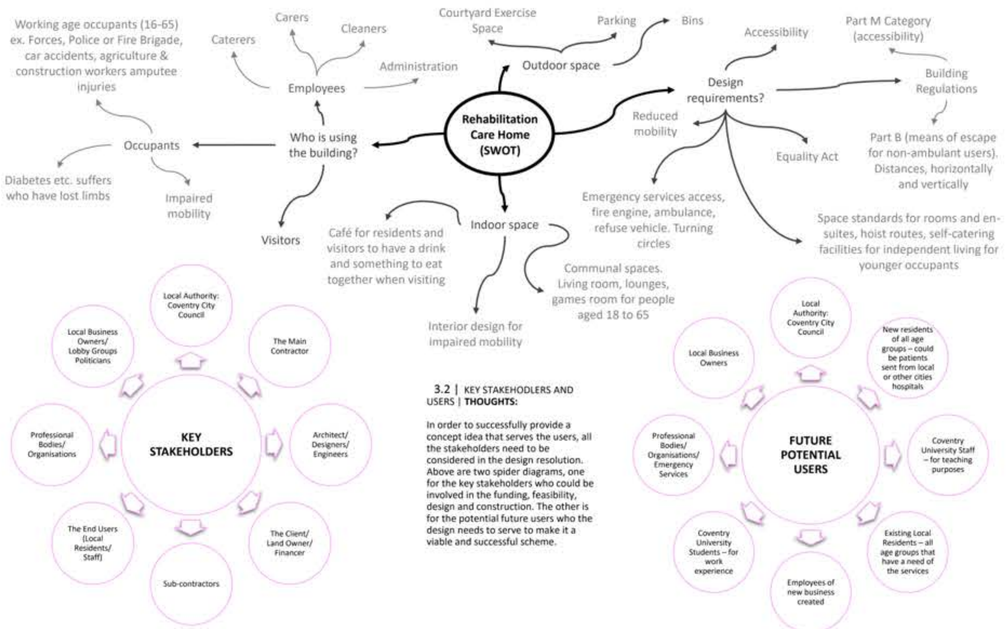
Extent of proposed site for redevelopment in bold red outline.




Coventry, Google Earth Pro ©, 2023

## 3.0 | DPA | S-1 | PREPARATION & BRIEFING | DETAILED BRIEF, KEY STAKEHOLDERS AND USERS

3.1 | STRATEGIC DEFINITION | DETAILED BRIEF | **PROJECT OUTCOMES:**
The proposed function for the site is to be a care home specialising in rehabilitation of people with physical disabilities and amputees, with a research facility for Coventry University. Potentially a specialist rehabilitation centre where university courses in mechanical & electrical engineering (EEC faculty) and health care services (in the Alison Gingell building) can advance their knowledge of orthotics & prosthetics, to enhance rehabilitation and later living for the local Coventry population and further afield.



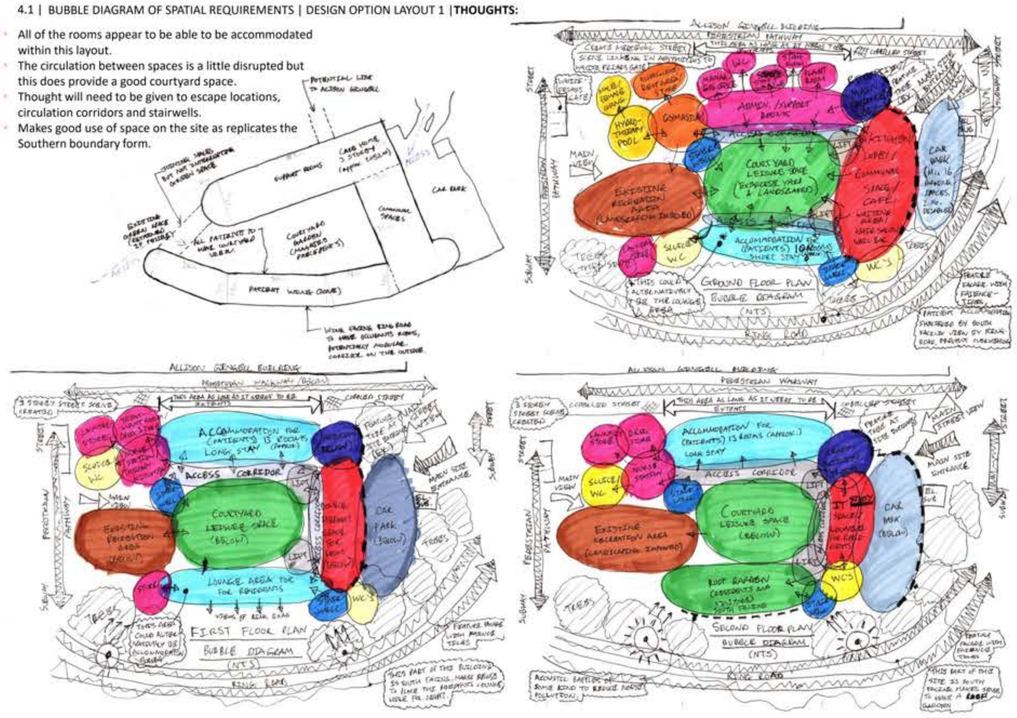

3.2 | KEY STAKEHOLDERS AND USERS | **THOUGHTS:**

In order to successfully provide a concept idea that serves the users, all the stakeholders need to be considered in the design resolution. Above are two spider diagrams, one for the key stakeholders who could be involved in the funding, feasibility, design and construction. The other is for the potential future users who the design needs to serve to make it a viable and successful scheme.

## 4.0 | DPA | S-1 | PREPARATION & BRIEFING | FEASIBILITY STUDY | SPATIAL REQUIREMENTS – DESIGN CONCEPT LAYOUT 1

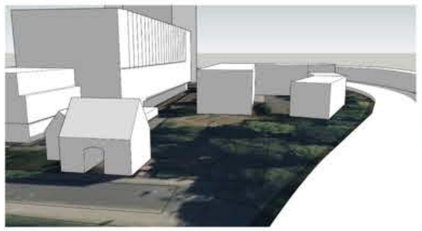
4.1 | BUBBLE DIAGRAM OF SPATIAL REQUIREMENTS | DESIGN OPTION LAYOUT 1 | **THOUGHTS:**

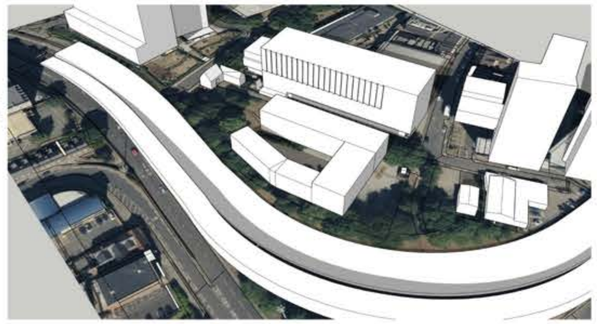
- All of the rooms appear to be able to be accommodated within this layout.
- The circulation between spaces is a little disrupted but this does provide a good courtyard space.
- Thought will need to be given to escape locations, circulation corridors and stairwells.
- Makes good use of space on the site as replicates the Southern boundary form.



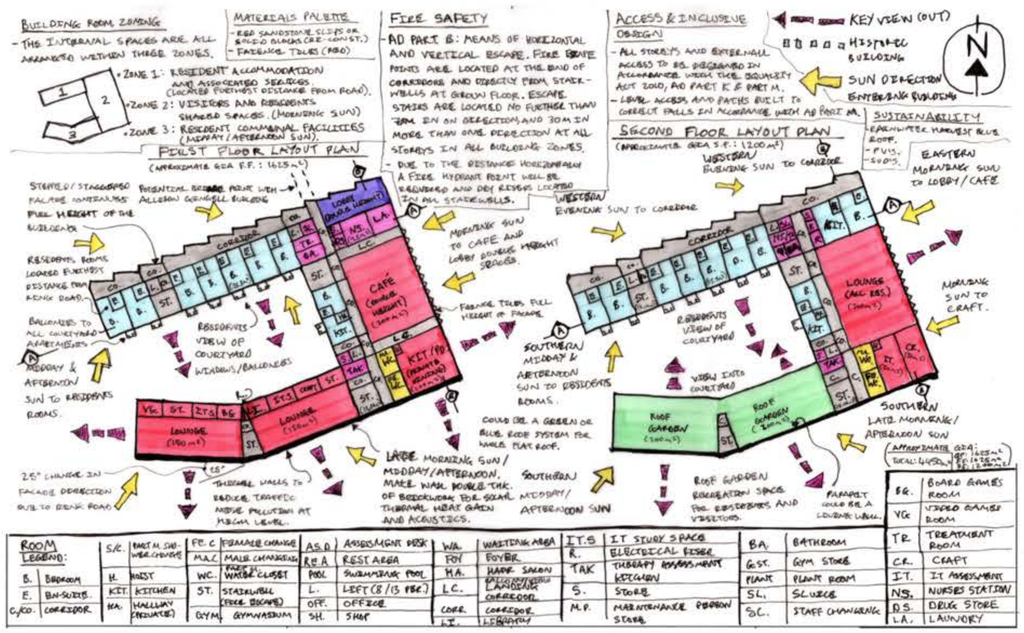

## 5.0 | DPA | S-1 | PREPARATION & BRIEFING | FEASIBILITY STUDY | SPATIAL REQUIREMENTS – MASSING CONCEPT LAYOUT 1

5.1 | SPATIAL REQUIREMENTS | MASSING CONCEPT LAYOUT 1 | **THOUGHTS:**
As can be seen from this massing model produced in Sketchup, the building does overshadow the courtyard area. However, this might be a bad thing in the heat of the summer months. The Southern wing of the building is kept to two storeys to allow natural light to the Northern wing, where the accommodation makes most sense to be positioned. The building helps to create a street scene on the Northern boundary adjacent the Alison Gingell building, making use of the feature cobble thoroughfare feature of the existing site. The majority of the existing recreational area is left untouched, any trees which are taken up by the development could potentially be replanted in this area. A roof garden will also be a valuable feature of this concept. A simple functional form which would be more economical to build than layout 2.

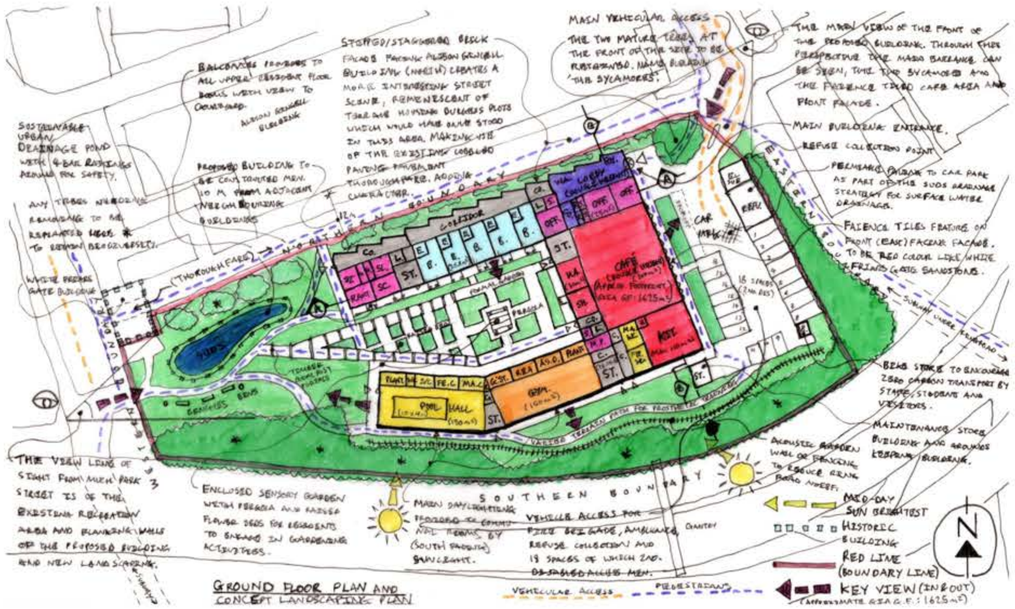




## 6.0 | DPA | S-2 | CONCEPT DESIGN | ARCHITECTURAL CONCEPT | FF & SF SPATIAL LAYOUT PLAN




## 7.0 | DPA | S-2 | CONCEPT DESIGN | ARCHITECTURAL CONCEPT | LANDSCAPE DESIGN & GF SPATIAL LAYOUT PLAN




## 8.0 | DPA | S-2 | CONCEPT DESIGN | ARCHITECTURAL CONCEPT | INDICATIVE 3D REPRESENTATION – ARTIST'S IMPRESSION


A Rehabilitation Centre dedicated to helping people establish their new normal and get on with life through dedicated residential and day rehabilitation services. For people with neurological conditions, stroke, spinal injuries, acquired brain injuries, orthopaedic and other complex trauma injuries.
Specialist Rehabilitation, STEPSRehabilitation ©, n.d.

# WHITEFRIARS REHABILITATION CENTRE - DESIGN CONCEPT

GETTING COVENTRY'S PEOPLE MOVING FORWARD AGAIN



## Elevation Materials Key:

**1 BRICKWORK & BRICK SLIPS:**
Danish (non-standard metric) brickwork type D38 (Format HF) by Petersen Tegl or similar approved product, to match the Allison Gingell Coventry University building. To be provided in both full brick and brick slip where necessary for construction. Subject to approval of Local Authority.

**2 RED SANDSTONE CURTAIN WALLING:**
Red Sandstone curtain walling stone slip panels system by Gormley masonry services or similar approved product to No.1 Poultry by James Stirling. To be of similar colour to the former Whitefriars Monastery, Gate and Coventry Cathedral. To blend in and take material cues from the heritage on the site. Subject to approval of Local Authority.

**3 FAIENCE TILE FEATURE WALL:**
A bespoke Faience tile design suitable to the antiquity heritage near by of the Whitefriars Monastery and Gate, similar to the Coventry Cathedral stain glass windows, contemporary design by local artist. To be produced by Darwen Terracotta & Faience or similar approved. Subject to approval of Local Authority.

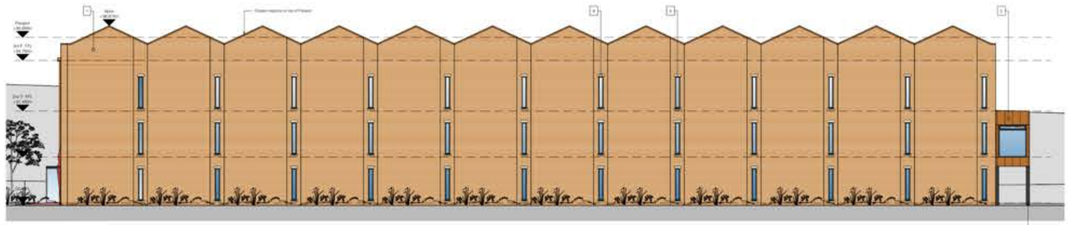
**4 THRU COLOURED RENDER:**
Thru coloured render on cement particle board to parapet inside face walls. Subject to approval of Local Authority.

**5 COPPER CLADDING:**
Copper standing seam metal cladding panel systems for walling and roofing.

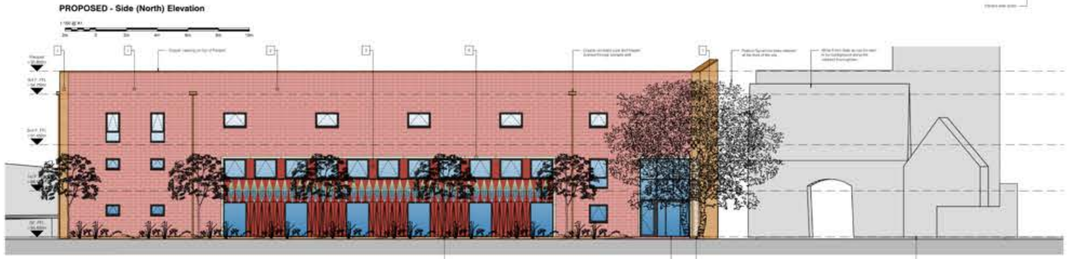
**6 STONE:**
Limestone colour cast-stone slips on pathress (mortar colour - cream) or solid reconstituted cast-stone lintels and cills.
Subject to approval of Local Authority.

## 10. | ARCHITECTURAL CONCEPT | **3D MODEL:**

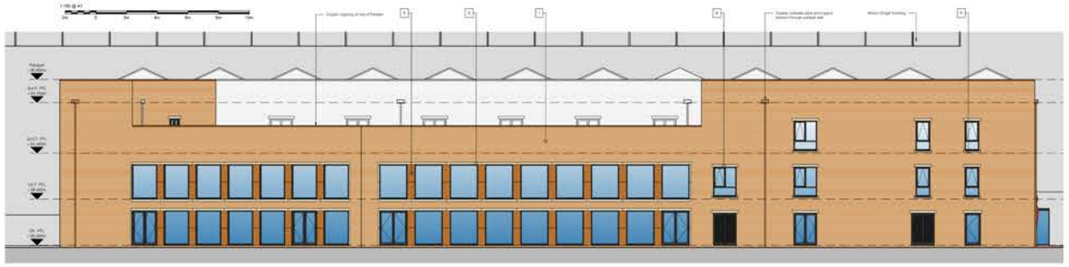
## 9.0 | ARCHITECTURAL CONCEPT | **PROPOSED ELEVATIONS:**



PROPOSED - Side (North) Elevation



PROPOSED - Front (East) Elevation



PROPOSED - Side (South) Elevation

## 11.0 | ARCHITECTURAL CONCEPT | **PROPOSED SITE AND LANDSCAPING DESIGN CONCEPT:**

**Site Plan Key:** Approximate G.I.A. G.F.: 1705m2

**RED LINE - BOUNDARY LINE**
Existing boundary line - Registered Proprietor Title boundary line with HM Land Registry.

**EXISTING BUILDINGS - ORDNANCE SURVEY**

**PROPOSED FOOTPATHS**
Paving slabs to be laid at gradients no greater than 1:20 (1:40 cross falls) in accordance with The Building Regulations 2010 and the latest Approved Document Part M. Conservation style traditional Sandstone flagstones, rustic riven surface in colour Heather or similar approved by Coventry City Council. Refer to materials schedule for sizes.

**PROPOSED PRIVATE CAR PARK**
Permeable block paved private drive with flush kerbs. Refer to materials schedule for type and colour of block to be approved by Coventry City Council. SUDS Drainage design in accordance with the appointed Civil Engineers design and specification.

**PUBLIC OPEN SPACE FOOTPATHS**
Washed, rounded, buff coloured gravel, 20mm gauge, 40mm depth or similar approved product by Coventry City Council.

**PROPOSED REFUSE STORAGE AND COLLECTION**
Allow for sufficient space to accommodate Euro bins required, supplied by the Coventry City Council, to meet all refuse and recycling needs of the new care home rehabilitation center.

**EXISTING TREES IN FEATURE LOCATIONS**
Existing trees in feature locations of specific interest present on the proposed site in accordance with the Arboricultural Impact Assessment and Tree Survey. To remain and be protected during construction works.

**EXISTING TREES**
Existing trees present on the proposed site in accordance with the Arboricultural Impact Assessment and Tree Survey.

**PROPOSED NEW TREES**
Proposed specimen deciduous trees to match existing trees on site to the approval of Coventry City Council.

**PROPOSED HEDGEROW & PLANTING**
Proposed planting of semi-evergreen dense forming hedges (Yew, Privet, Hawthorn) subject to the approval of Coventry City Council.

**PROPOSED SEASONAL FEATURE PLANTING**
Proposed seasonal planting to the approval of Coventry City Council.

**PROPOSED OUT BUILDINGS**
2.4m high 215mm thick stretcher bond facing brick wall with red sandstone colour cast-stone coping finish where indicated. Two courses of contrasting engineering bricks to act as DPC for wall at ground level. Green sedum flat roof to the approval of Coventry City Council.

**PROPOSED 1.0m FOUR BAR RAILINGS**
Proposed 1.0m high four bar metal railings where indicated. Colour agate grey to the approval of Coventry City Council.

**PROPOSED ACOUSTIC WALL**
Proposed acoustic wall. Brick garden wall or double panel timber fencing with sound deadening materials - subject to specialist design to the approval of Coventry City Council.

**DEMOLITIONS AND INTERVENTIONS**
Dashed red line where indicated, existing site feature to be removed.


PROPOSED - Site Landscape Plan

## 14.0 | TECHNICAL REPORT | **LAB TEST:**

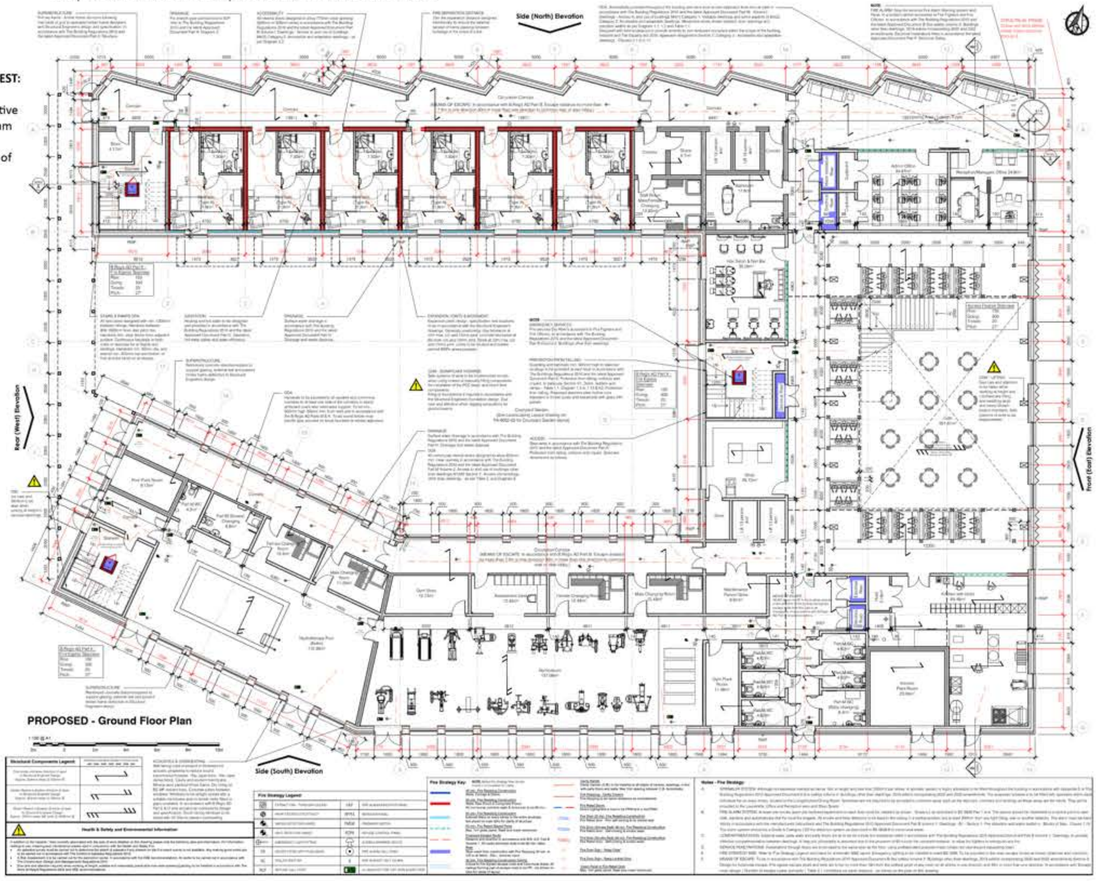
A technical report on the comparative strength of adhesives used in Glulam beams in tension and their sustainability. To minimise the use of VOCs and toxic substances in the construction of this building.

## 12.0 | ARCHITECTURAL CONCEPT | **SCHEDULE OF MATERIALS TABLE:**

Below is a schedule of materials for the proposed Rehabilitation Centre to be considered for the scheme.

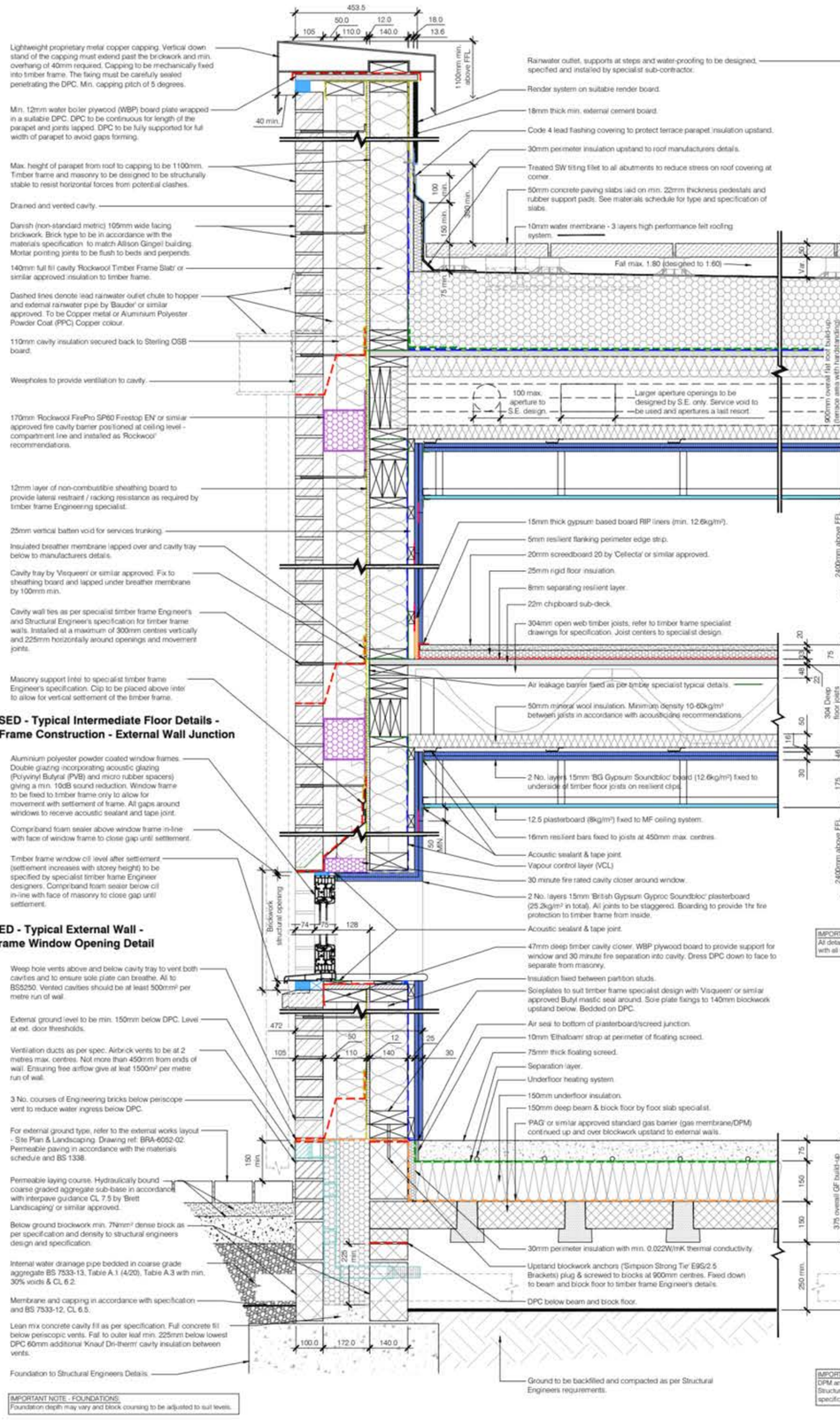
| Location | Description | Product & Website | Image / Colour/ References |
|---|---|---|---|
| Rehabilitation Centre Façade – Rear, Sides and Courtyard | Brickwork & Brick Slips | Danish (non-standard metric) brickwork type D38 (Format HF) by Petersen Tegl or similar approved product, to match the Allison Gingell Coventry University building. To be provided in both full brick and brick slip where necessary for construction. D38, Petersen Tegl ©, n.d. |  D38, Petersen Tegl ©, n.d. |
| | Cavity Insulation | Insulation products suitable for timber frame structure with fire class rating of Euroclass A1, smoke generation s1 and burning droplets d0 as required by the Building Regulations AD Part B. Suggested suppliers (ROCKWOOL / UNILIN etc.) | |
| | Timber Frame Structure | Timber Frame Structure (Primary Timber Frame, timber stud infill, Glulam beams, Posi-joist or TJI joist) to be designed by specialist Timber Frame Engineering Consultancy. | |
| | GF Beam & Block slab and Foundations | Beam and block flooring to ground floor slab to provide stable substructure, foundations to Structural Engineers specification subject to detailed GI Report. | |
| Rehabilitation Centre Façade – Front Elevation | Red Sandstone Curtain Walling / Structural Glazing Systems | Red Sandstone curtain walling stone slip panels system by Gormley masonry services or similar approved product to No.1 Poultry by James Stirling. To be of similar colour to the former Whitefriars Monastery, Gate and Coventry Cathedral. To blend in and take material cues from the heritage on the site. Portfolio, Gormley ©, n.d. |  Photographs by Author, 2023 |
| | Faience Tile Feature Wall | A bespoke Faience tile design suitable to the antiquity heritage near by of the Whitefriars Monastery and Gate, similar to the Coventry Cathedral stain glass windows, contemporary design by local artist. To be produced by Darwen Terracotta & Faience or similar approved. | |
| Rehabilitation Centre – All Elevations | Windows Glazing & Frames | Pilkington – 'Optifloat' clear & tinted (TBC subject to SAP U-Value and G-Value calculations) or similar approved product. Pilkington Optifloat™ Clear (www.pilkington.com/en/global/products/product-categories/thermal-insulation/pilkington-optifloat-clear) Extruded Polyester Powder Coated (PPC) Aluminium window frames to match the Allison Gingell Building of Coventry University, same design and supplier or similar approved. Colour Anthracite grey TBC or similar approved. |  Photographs by Author, 2023 |
| Rehabilitation Centre – Flat Roof Terrace and surround hard surfaces | External Paving | Conservation style traditional flagstones Sandstone paving, rustic riven surface in colour Heather. Size 600 x 450mm or similar approved product for roof terraces. Variable size stones are ground level to all paths, patio surfaces and courtyard hard standing. |   Stone Paving, Stone Paving Supplies ©, n.d. |
| Rehabilitation Centre – All Elevations | Rainwater Goods | Internal rainwater system from Blue Roof storm water attenuation system. Water harvesting system where possible. | |
| Footpaths across green public open space | Well draining gravel surface for footpaths | Washed, rounded, buff coloured gravel, 20mm gauge, 40mm depth or similar approved product. | |
| Footpaths Edging | Metal Edging | Metal Edging or similar approved product. | |
| Rehabilitation Centre – Flat Roof | Flat Roof - Blue and Green Roof Systems | Flat Roof – Blue and Green roof systems by Bretts Landscaping or BAUDER or similar approved system to attenuate storm water as part of SuDs strategy to drainage pond (swale) in green public open space. | |

## 13.0 | ARCHITECTURAL CONCEPT | **PROPOSED TECHNICAL DESIGN PLAN:**




PROPOSED - Ground Floor Plan

## PROPOSED - Typical Flat Roof Details - Timber Frame Construction - External Wall Junction, Parapet and Capping




## PROPOSED - Typical Intermediate Floor Details - Timber Frame Construction - External Wall Junction

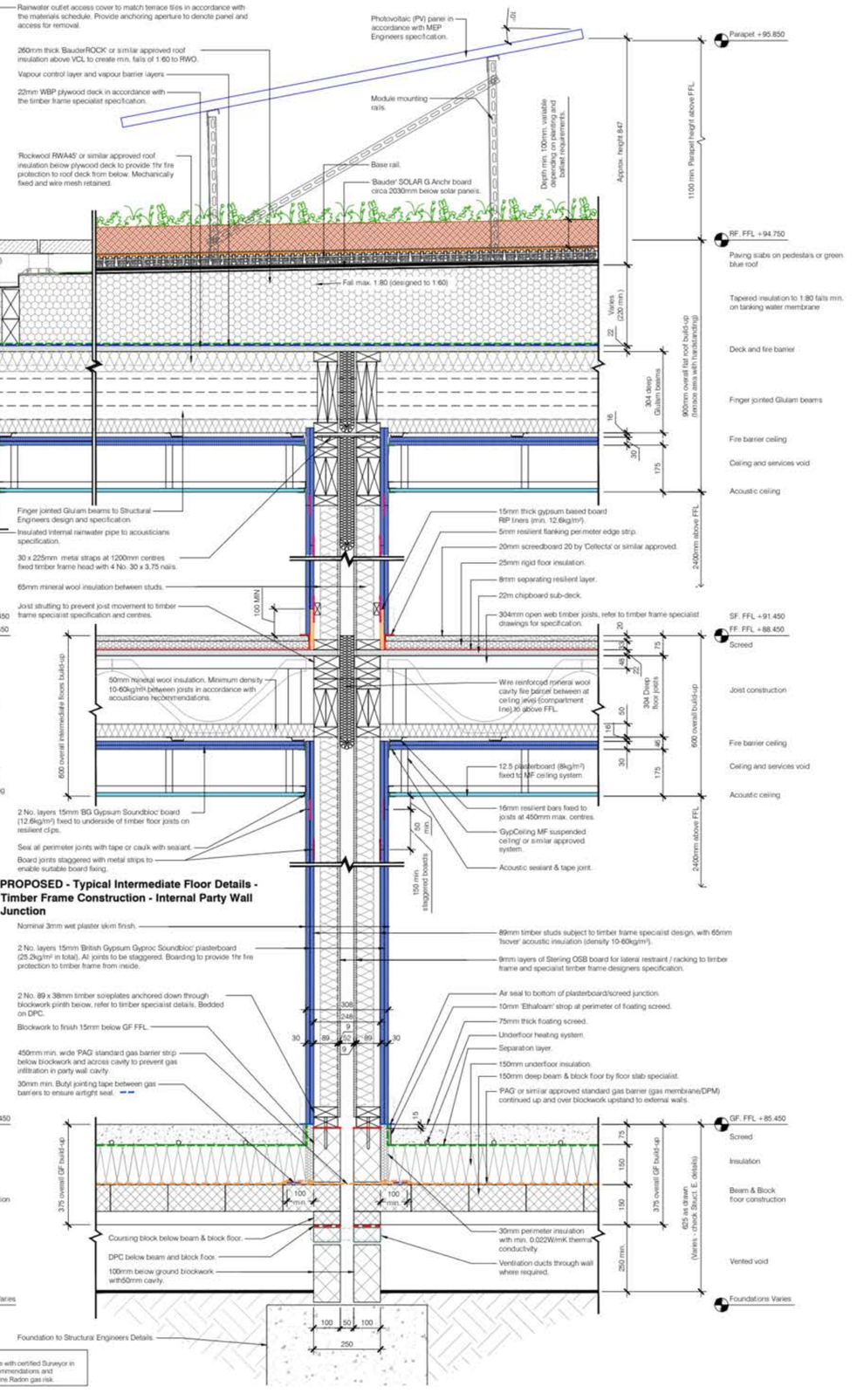



## PROPOSED - Typical External Wall - Timber Frame Window Opening Detail

## PROPOSED - Typical Foundation Details - Timber Frame Construction - External Wall Junction

1:10
200mm 0 200mm 400mm 600mm 800mm 1000mm

## PROPOSED - Typical Flat Roof Details - Timber Frame Construction - Party Wall to Flat Roof Junction and Blue Green Roof Construction




## PROPOSED - Typical Intermediate Floor Details - Timber Frame Construction - Internal Party Wall Junction

## PROPOSED - Typical Foundation Details - Timber Frame Construction - Ground Floor Party Wall Junction

NOTES:

FABRIC U-VALUES:
In accordance with the Building Regulations 2010 and the latest Approved Documents, Part L Volume 1, 2021 edition (incorporating 2023 amendments - for use in England), L1(a) Volume 1: Dwellings, Requirement L1: Conservation of fuel and power Section 4: Limiting heat gains and losses. Page 23. The permissible U-Values are as follows:

Table 4.1 Limiting U-Values for new fabric elements and air permeability in new dwellings

| Element type | Maximum U-Value W/(m² K) Area-weighted average |
|---|---|
| valuesAll roof types | 0.16 W/(m² K) |
| Wall | 0.26 W/(m² K) |
| Floor | 0.18 W/(m² K) |
| Party Wall | 0.20 W/(m² K) |
| Swimming pool basin | 0.25 W/(m² K) |
| Window | 1.6 W/(m² K) |
| Rooflight | 2.2 W/(m² K) |
| Doors (inc. glazed doors) | 1.6 W/(m² K) |
| Air permeability | 8.0m³ /(h·m²) @ 50Pa,1.37m³ /(h·m²) @ 4Pa |

The target U-Value of this buildings external walls, roof and ground floor is 0.11W/(m² K), to endeavor to achieve zero carbon in use. This is in-line with the UK net zero target by 2050 and the 'Net Zero Strategy: Build Back Greener' policy paper.

DPC & DPM LEGEND:
- Standard gas barrier (Gas membrane/DPM)
- DPC (Gas resistant DPC)
- Vapour barrier layer (VBL)
- Vapour control layer (VCL)
- Breather membrane
- Butyl jointing tape between gas barriers
- 3 No. layers high performance roofing felt system
- Air leakage barrier
- Code 4 (or thickness to suit situation) lead flashing

GREEN & BLUE ROOF ABOVE TAPERED INSULATION BUILD-UP LEGEND:
- Flora 3 seed mix by 'Bauder' or similar approved.
- Biodiverse substrate.
- Drainage board DSE40 by 'Bauder' or similar approved.
- Filter fleece by 'Bauder' or similar approved.
- Protection mat by 'Bauder' or similar approved.
- Deck substrate.

## Wall Types Key:

External Wall - Brickwork
Maximum U-value = 0.26 W/(m² K) *
(475mm overall thickness (585mm Ringroad facing wall))

(1)
- (1)105mm Danish facing brickwork ((2) + 10mm void & 100mm medium density block min. 7.3N/mm² # Ringroad facing wall),
- 50mm (min. 25mm) ventilation gap,
- 110mm mineral wool insulation,
- Waterproof & permeable breather wall membrane,
- 12mm British Gypsum Gyproc plasterboard Glasroc X sheathing board - Rated as Euroclass A1 'non-combustable' or Sterling board (OSB3 external grade) subject to Building Control approval,
- 140mm SW treated timber frame min. C24 class (load bearing) fully filled with mineral wool insulation,
- Vapour control layer,
- 25mm metal channels mounting battens (25mm service void between) @ 400mm c/c
- 2No. layers 15mm Gypsum Plasterboard Gyproc SoundBloc,
- 3mm Gypsum plaster finish (scrim taping joints and skim)

* In accordance with The Building Regulations 2010 and the latest Approved Document Part L Volume 1: Dwellings Requirement L1(a): Conservation of fuel and power - Table 4.2 Limiting U-values for new fabric elements in existing dwellings. Approved Document Part O: Overheating. Approved Document Part E: Resistance to Sound.

External Wall - Stone Panels/Copper Cladding/Brick Slips (on pattress CP board on helping hand brackets) or similar system by others. Faience tile design and construction by specialist.
Maximum U-value = 0.26 W/(m² K) **
(475mm overall thickness - subject to material variations)

(2)
- 15-26mm facing brickwork/stone slips or copper composite panel,
- 25mm pattress cement particle panel boards,
- 100mm (min. 25mm) ventilation gap,
- 110mm mineral wool insulation (+85mm additional insulation subject to SBEM/Design SAP calculations),
- Helping hand bracket system by 'SFS - NVELOPE Rainscreen Brackets' or similar system of frame construction,
- Waterproof & permeable breather wall membrane,
- 18mm Sterling board (OSB3 external grade) sheathing board,
- 140mm SW treated timber frame min. C24 class (load-bearing) fully filled with mineral wool insulation,
- Vapour control layer,
- 25mm metal channels mounting battens (25mm service void between) @ 400mm c/c
- 2No. layers 15mm Gypsum Plasterboard Gyproc SoundBloc,
- 3mm Gypsum plaster finish (scrim taping joints and skim)

** In accordance with The Building Regulations 2010 and the latest Approved Document L, Conservation of fuel and power, Volume 2: Buildings other than dwellings. 2021 edition incorporating 2023 amendments, Table 4.1 Limiting U-values for new or replacement elements in new and existing buildings and air permeability in new buildings. Approved Document Part O: Overheating. Approved Document Part E: Resistance to Sound.

Separating (Party) Partition Wall -
Sound insulation (reduction) dB: 46 ***
(198mm overall thickness)

(3)
- 3mm Gypsum plaster finish (scrim taping joints and skim),
- 2No. layers 15mm Gypsum Plasterboard Gyproc SoundBloc,
- 89mm timber studs subject to timber frame specialist design,
- 65mm 'Isover' acoustic insulation (density 10-60kg/m³),
- 9mm layers of Sterling OSB board,
- 52mm (50mm min.) cavity,
- 9mm layers of Sterling OSB board,
- 65mm 'Isover' acoustic insulation (density 10-60kg/m³),
- 89mm timber studs subject to timber frame specialist design,
- 2No. layers 15mm Gypsum Plasterboard Gyproc SoundBloc,
- 3mm Gypsum plaster finish (scrim taping joints and skim)

*** Above specification as prescribed in 'Robust detail' compliant 'E-WT-2 - Timber Frame Cavity Wall with sheathing board'. In accordance with The Building Regulations 2010 and the latest Approved Document Part E: Resistance to Sound.

Partition Wall - Based on 'British Gypsum (BG) - Timber stud partitions A026037 MR2 (EN)' Sound Insulation (reduction) dB: 40 ****
((3)198mm overall thickness load-bearing) - ((4)149mm non-loadbearing) partitions with single layer of BG board both sides)

(4)
- 3mm Gypsum plaster finish (scrim taping joints and skim)
- (3) 2No. layers ((4) 1No.)15mm Gypsum Plasterboard Gyproc SoundBloc,
- (3) 140mm loadbreaing ((4) 89mm non-loadbearing) SW treated timber frame min. C24 class with 50mm Isover Acoustic partition roll (APR 1200) between,
- (3) 2No. layers ((4) 1No.)15mm Gypsum Plasterboard Gyproc SoundBloc,
- 3mm Gypsum plaster finish (scrim taping joints and skim)

**** Above specification as prescribed in 'The White Book' by British Gypsum (Saint-Gobain), Section C04 Partitions. In accordance with The Building Regulations 2010 and the latest Approved Document Part E: Resistance to Sound.

**NOTE:**
Insulation lines omitted on floor plans for clarity.
Fire strategy line colours shown in-place of insulation.