

Wellbeing Hub @ Maelfa

Proposed planting strategy

The majority of the existing trees along the eastern boundary of the site are to remain and the eastern edge of the wood along the western boundary is to remain protected.

Whilst the foreground to the main Wellbeing Centre is hard paved and largely occupied by the main car park, new landscape and soft SuDS features are incorporated to the eastern and northern elevations. Raised SuDS planters here will soften the elevations of the building and reduce the impact of the changes in level. The bioretention planters against the northern elevations will accommodate shade tolerant plants with a reasonable degree of density in order to discourage close public contact along this facade.

The remaining bioretention features will accommodate appropriate planting that will tolerate the varying dry and wet conditions, with a range of ornamental grasses and hardy perennials including pollinating species to provide a colourful and biodiverse species mix.

The SuDS detention basin to the north of the Wellbeing Centre will accommodate an appropriate wild flower mix to the banks and margins along with additional Wetland and wild flower plant species within the base of the SuDS feature, providing an interesting new bio-diverse resource with a higher value than the existing grassland habitat for a range of species.

Along the new path route, traversing the existing bank, additional trees are proposed. Some of these will be planted as fruiting species as part of a community orchard for the local residents.

Further amenity planting is included around the carparking areas which will assist in visually separating the parking area from the road, creating a setting for the development.

Proposed hard paving

Hard paving materials will be chosen to provide a high quality, durable and easily maintainable finish. Textured block paving will be used alongside tarmac and existing paving materials.

The main car park will be surfaced in part with permeable paving blocks to car park bays to support the SuDS system, where levels and falls permit. The remaining bays will be paved in the same colour and style of block so that visually it all ties through. Parking bays will be delineated with a soldier course of blocks running along the end of the bays, with white lines defining the car parking spaces. New pavements around the new Wellbeing Centre leading to the new main entrance will utilise quality block paving to match that used at the adjacent Hub building, with the use of a matching permeable block where applicable.

The external outdoor terrace to the west of the main reception will utilise quality porous hard paving to match those to the front entrance. A reinforced grass path will be provided to the rear of the building, to facilitate maintenance access, but discourage pedestrian use. To the east of the building around the new SuDS features, seating areas are created as an amenity area for the local community and staff alike, paved in block paving to match elsewhere and designed as permeable surfaces to support the SuDS scheme design. New pedestrian routes linking to the existing path network will be finished to match the existing pavements through the park.

The overall landscape proposals combine and link together to operate as part of a site-wide sustainable drainage strategy, controlling, attenuating and filtering surface water run-off. Landscaped rain gardens, swales, basins, permeable paving and underground storage systems combine to capture, slow and attenuate water run-off prior to final connection to the existing surface water drainage network.



5.2 Civil & Structural Report

Introduction

Cambria Consulting Ltd have been commissioned to be produce a Stage 4 Civil and Structural Engineering report for the proposed new Maelfa Wellbeing Centre in Llanedeyrn, Cardiff.

The development site is made up of two separate sites, north and south of Round Wood Road in Llanedeyrn. A temporary car park is also being installed east of the scheme to cater for construction parking and to offset lost parking for the Powerhouse Hub during the build.

The northern site is 0.47ha and a mixture of greenfield and brownfield land comprising a car park, public footpaths and mixed-use games area (MUGA) as well as areas of soft landscaping. The site is bounded by Public Open Space (POS) to the north, Woodland to the west, the Powerhouse Hub and Round Wood Road to the south and a residential estate beyond the eastern boundary.

The southern site is 0.21ha brownfield site which includes the existing Llanedeyrn Heath Centre and associated car parking. The site is bounded by the Maelfa Regeneration scheme to the south west, a new residential estate to the south east and Round Wood Road to the north.

The northern site is centred around OS coordinates E: 320206, N: 180091 and the southern site is centred around OS coordinates E: 320187, N: 180017 and shown in Figure 1.1 below;

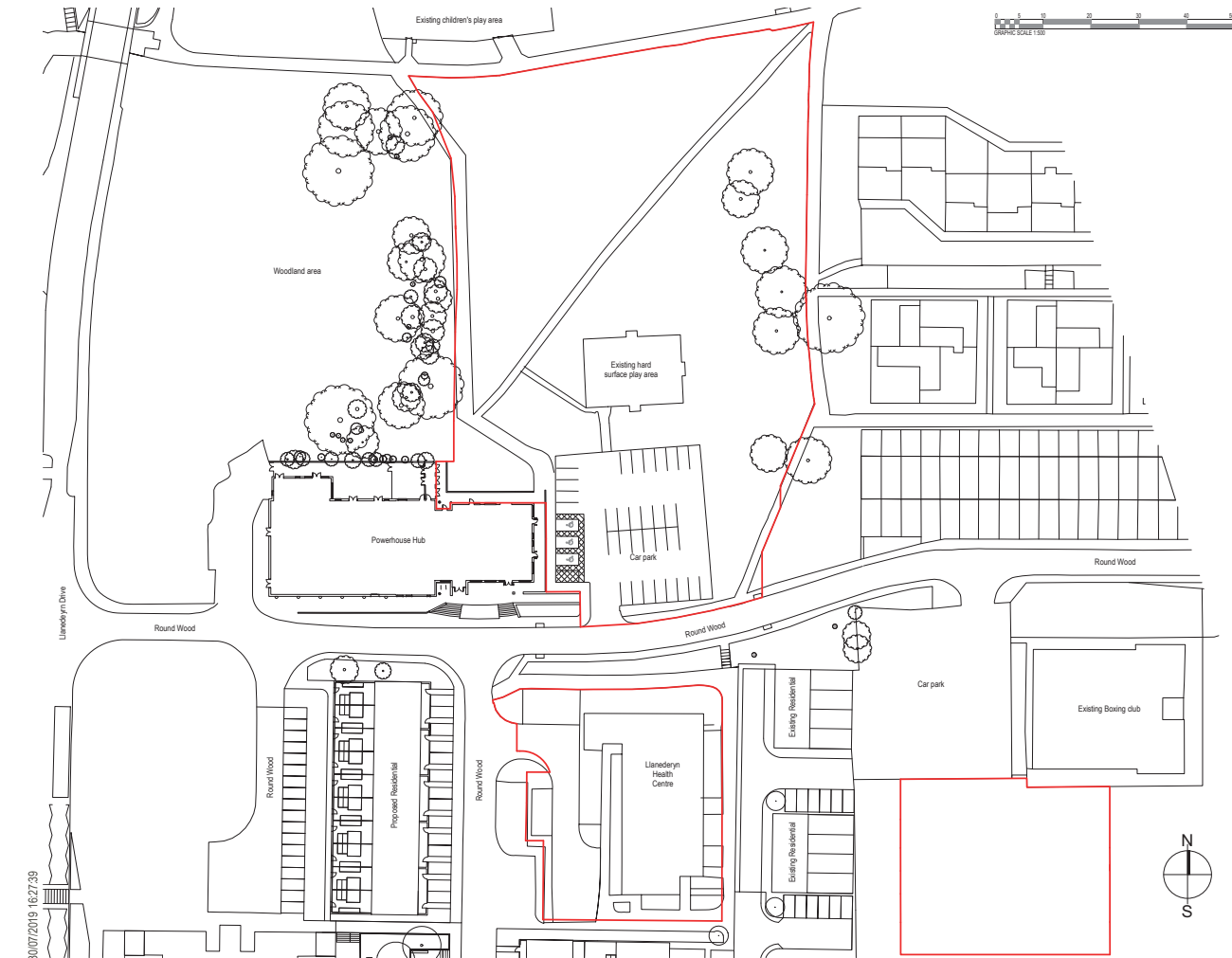


Figure 1.1 – Site Location Plan

Development Proposals

An extract of the proposed site layout, drawing number MWC-RLA-ZZ-XX-DR-A-PL003, by Robert Limbrick is shown in Figure 1.2 below;

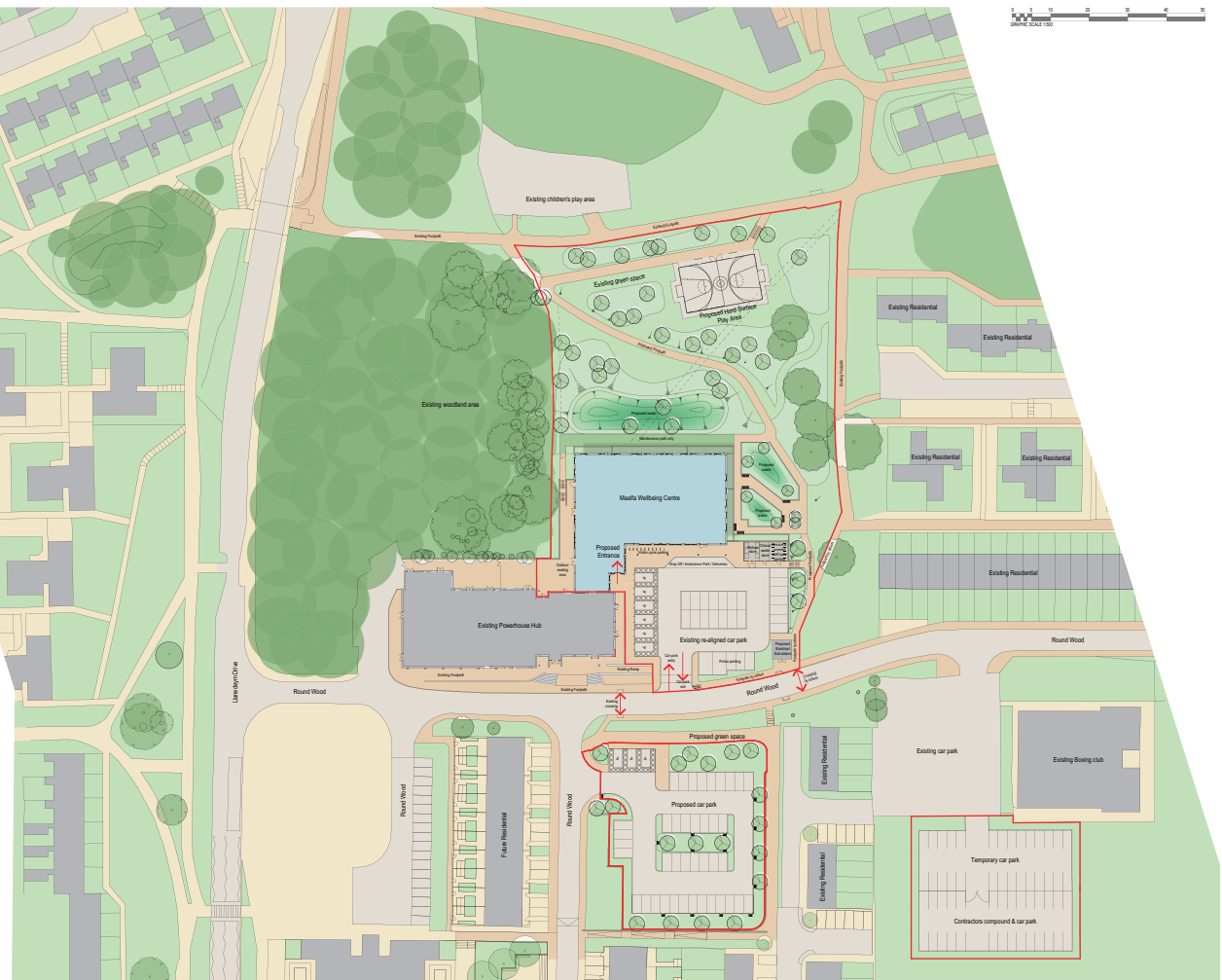


Figure 1.2 – Proposed Site Layout

Development proposals includes the following;

- Wellbeing Centre
- Realignment of the existing powerhouse car park
- Demolition of existing Health Centre
- Construction of a new 39 space car park
- Construction of a new hard surface play area
- New footpaths and external areas
- SuDs infrastructure and landscaping
- Construction of a temporary car park

TOPOGRAPHY

A topographical survey of the northern site has been undertaken by Utilimap in October 2018. The car park sites were subsequently surveyed by Utilimap in February 2020. The new surveys also captured the recent works undertaken by Cardiff Council along Roundwood and near to the Powerhouse Hub car park.

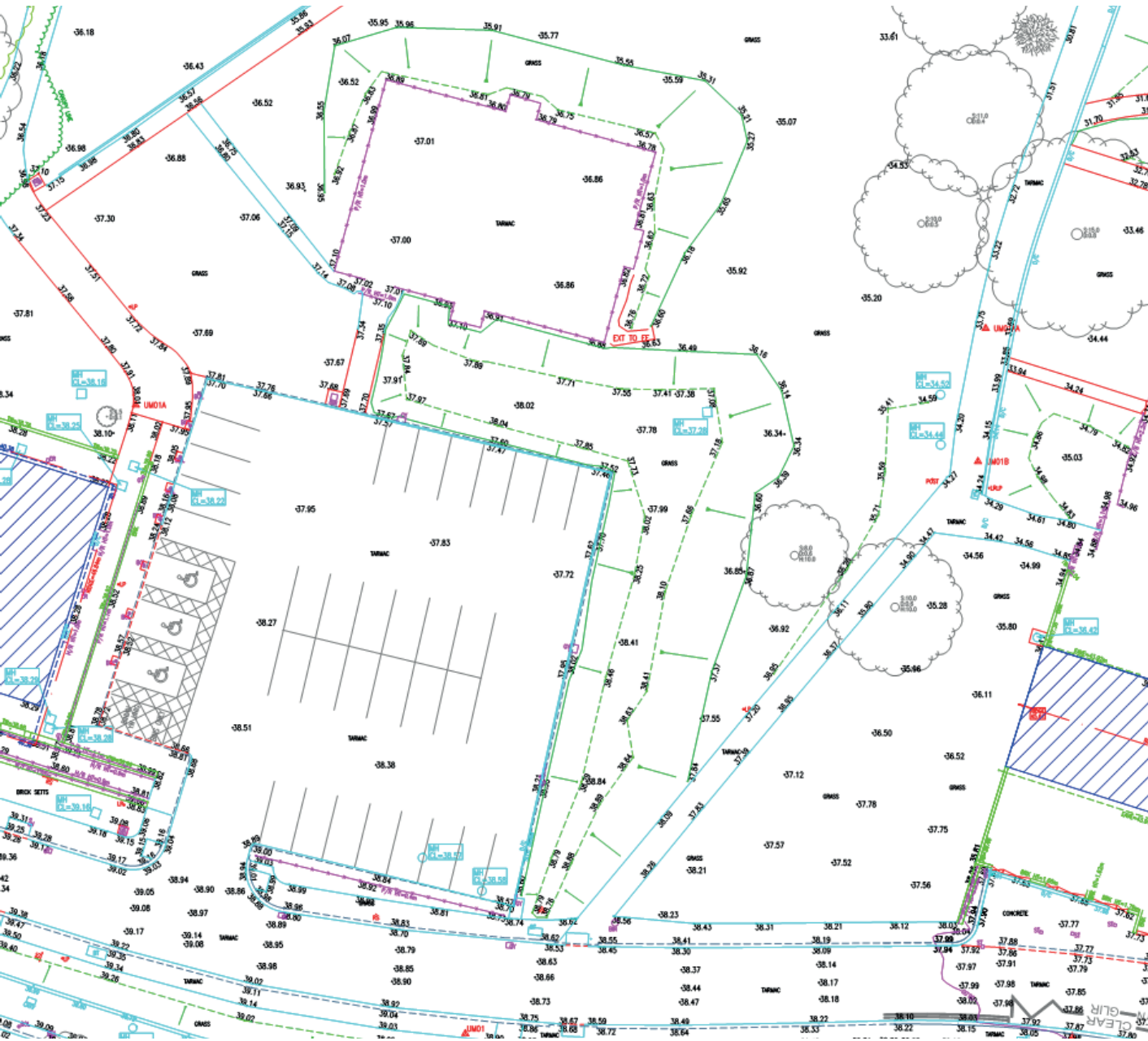


Figure 2.1 – Extract of Topographical Survey (Utilimap)

The survey shows the existing Powerhouse car park falls in a north easterly direction from approximately 39mAOD to 37.4mAOD at a general gradient of 1:23. The site then falls steeply in a northerly direction with the exception of the existing MUGA which is at 37m AOD. The level at the northern boundary is approximately 34m AOD, the Public Open Space continues to fall steeply beyond the northern boundary at a gradient of 1:5.

Photo 2.1 below shows the significant level falls to the rear of the site, beyond the existing MUGA.



Photo 2.1 – Views looking up to the Wellbeing Centre site in a South Westerly direction

The existing health centre site is generally set down lower than Round Wood Road, with the car parking falling in a southerly direction from the access at 39.36m AOD to 38.4mAOD at the southern end of the car park. The finished floor level of the health centre is 38.72m AOD.

The temporary car park site is relatively flat between 35.6 and 35.7m AOD although there is a significant drop at the fence line of the existing car park. The existing car park adjacent the boxing gym is around 1m higher at 36.75m AOD.

GROUND CONDITIONS

A Phase II intrusive site investigation was undertaken by ESP in January 2019.

The intrusive site investigation works included 7 no. trial pits and 4 no. windowless samples across the site.

Made ground was encountered to a maximum depth of 1.8m. In some of the sampling points Reworked Glacial Diamicton was encountered to a maximum depth of 1.3m. Glacial Diamicton was encountered underneath the Made Ground and Reworked Natural to a maximum depth of 2.5m below ground level.

The site investigation recommends the use of spread foundations founded within the Cardiff Group bedrock which was encountered approximately 2m below ground level. The report indicated a bearing capacity of 100 kN/m² for this strata.

ESP have indicated for the potential founding strata to have intermediate to high plasticity and moderate shrinkage / swelling potential. The proximity of foundations to existing or proposed trees, particularly along the Western boundary will need to be considered and foundation depths increased where necessary, in accordance with Chapter 4.2 of the NHBC technical standards.

ESP are currently undertaken further site investigation works on the existing health centre site, proposed kick about area & temporary car park site. Part of these works will involve ongoing gas monitoring. Further sampling will be required, once the existing health centre is demolished, to satisfy the ground contamination planning conditions.

FLOOD RISK

The Development Advice Maps (DAM) show the site is in Flood Zone A and therefore at little risk of flooding from fluvial or Tidal sources. An extract of the DAM maps is shown in Figure 3.1 below;



Figure 3.1 - TAN 15 DAM Map

The site area is less 1Ha and therefore a Flood Consequence Assessment (FCA) was not produced to support the planning application. NRW maps do show a small pocket of surface water flood risk within the north eastern corner of the Powerhouse Car park.

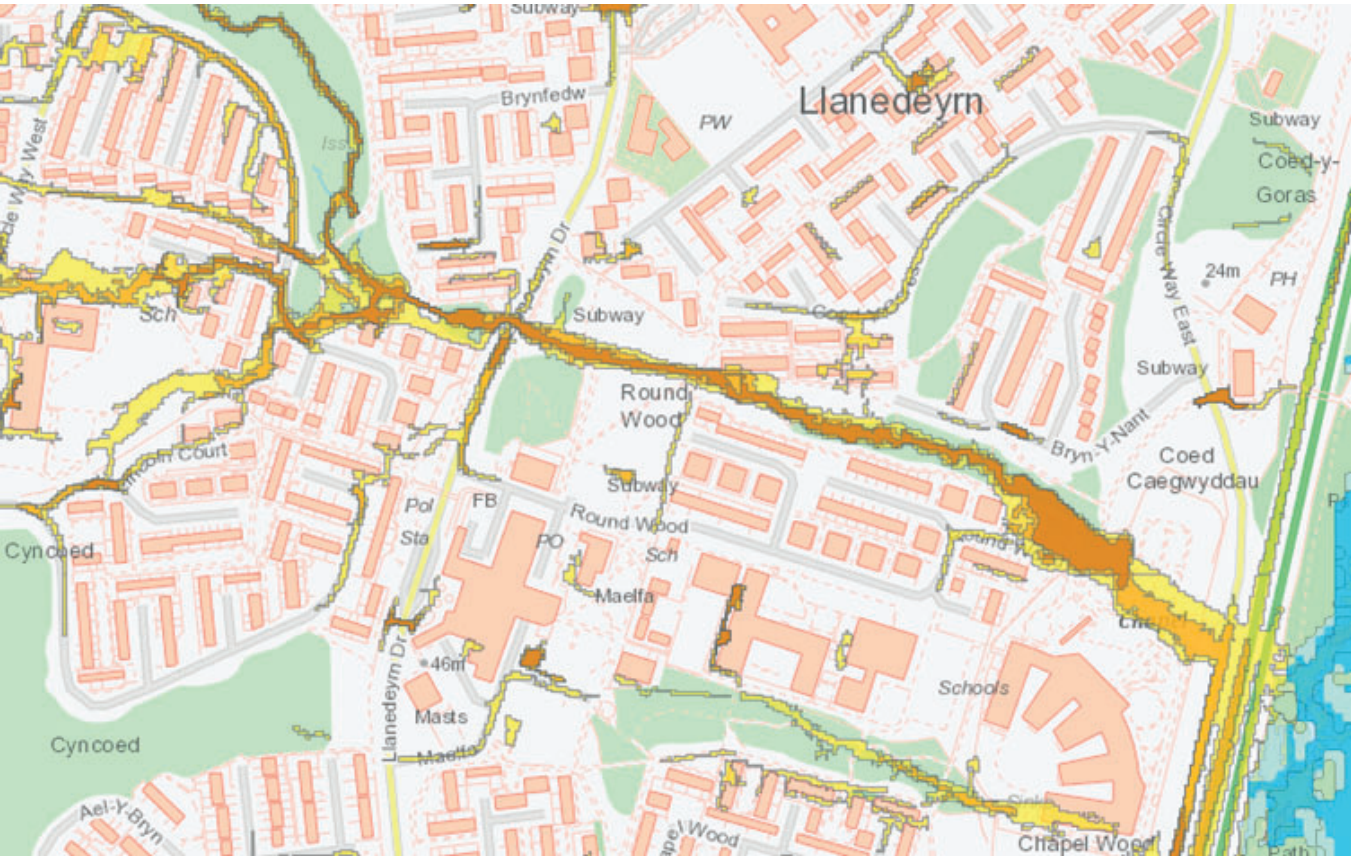


Figure 3.2 - NRW Flood Risk Map

Whilst the proposed building will be located in a fairly elevated position and at little risk of flooding from any nearby watercourses, surface water flood risks and potential failure of the surrounding drainage infrastructure will need to be considered in the design of the scheme. Exceedance events and overland flow routes are discussed further in Section 7 of this report.

BUILDING STRUCTURE

Foundation Solutions

The SI for the powerhouse hub identifies a competent bearing stratum at around 0.7m below ground level.

The ESP report for the Wellbeing Centre site indicates a founding depth of approximately 2m below ground level and a bearing capacity of 100 kN/m².

Owing to the change in levels across the site, the ground levels will have the biggest impact on the choice of foundation solution. As the new building will be tied into the existing building with a common floor level, the building level is constrained to the existing FFL.

The anticipated depth of under-build at the north-eastern most corner of the building will extend to circa 2.8m.

Foundation Options

The following options for the foundation solution were explored in order to establish the most appropriate solution.

- Engineered fill with shallow foundations
- General fill with trench fill foundations to existing bearing stratum
- Shallow foundations at existing bearing stratum with void below ground floor slab

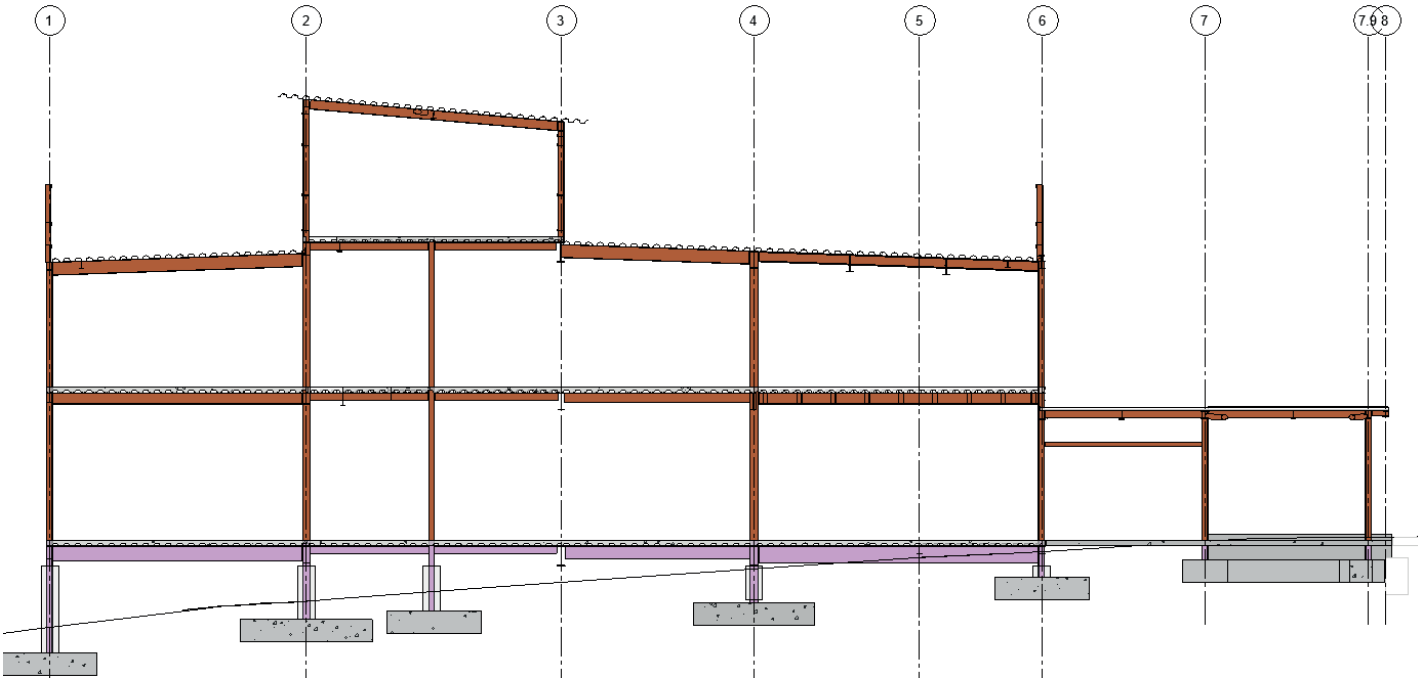


Figure 4.1 - Indicative Building Section

In order to mitigate against extensive retaining walls and large quantities of imported fill, the foundation solution is proposed to be the third option of shallow foundations on suitable bearing stratum. This will necessitate a suspended ground floor slab with up to 2.8m void/under build at the northern elevation.

The ground floor slab has been designed as a composite slab with sacrificial shutter supported on a steel sub-frame.

Ground Gases

A gas addendum report undertaken and provided in February 2020 by ESP has indicated that the site is classified as being a Gas Characteristic Situation 2. This will require a suitable gas mitigation system typically comprising a gas membrane designed, installed and verified by a specialist in accordance with BS 8485.

STRUCTURAL SOLUTION

The proposed building takes the form of a two-storey main block with a single storey link to the existing powerhouse hub building.

The adopted solution for the superstructure is steel frame with lateral stability provided in two orthogonal directions by the inclusion of cross flat braced bays where feasible. Diaphragm action of the floor plates will distribute any lateral forces from wind action and Equivalent Horizontal Forces induced by building tolerances to the braced bays, where the forces will be transmitted down to the foundations.

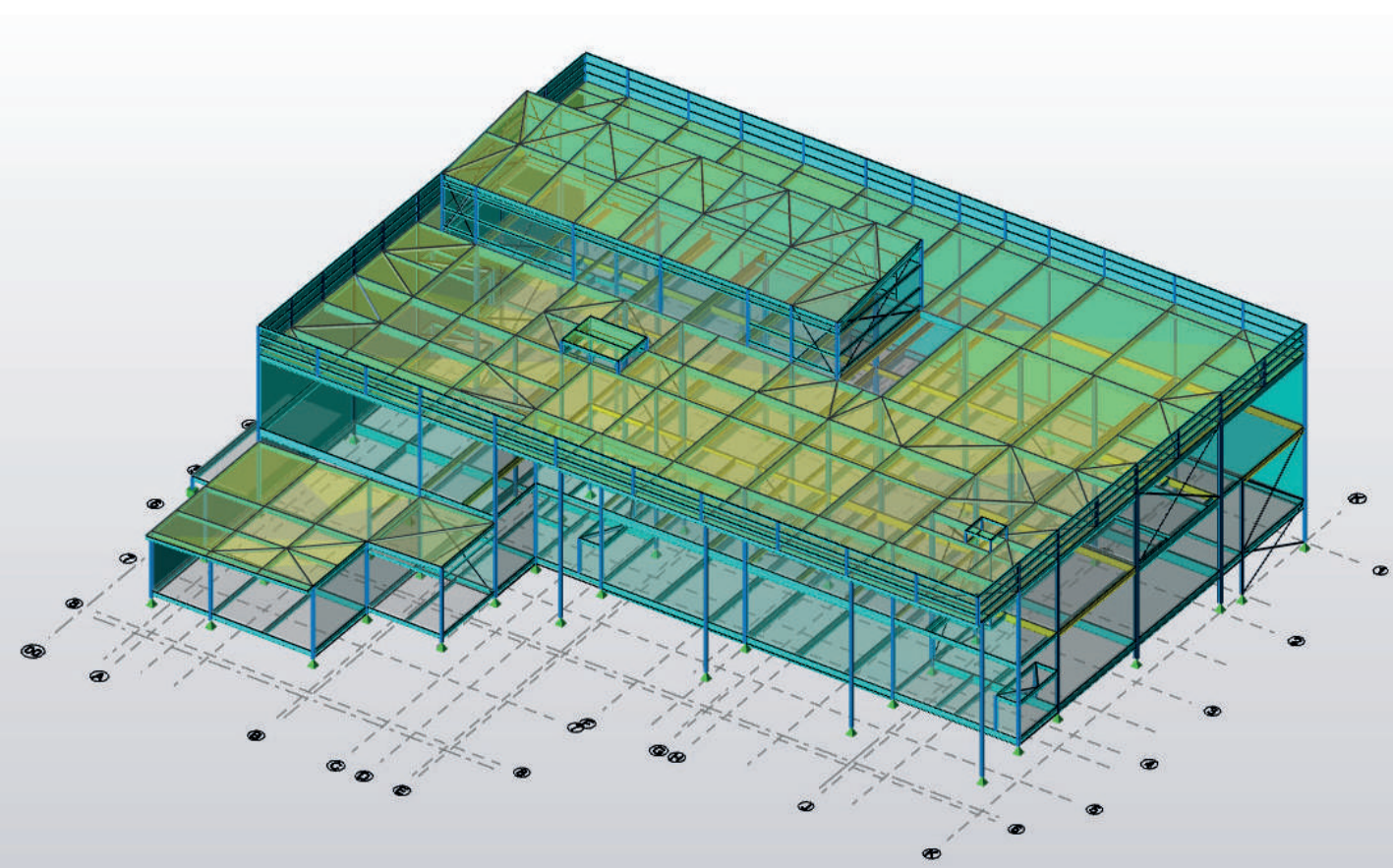


Figure 4.2 - Stage 4 3D Analysis Model

Ground Floor Slab

The ground floor slab has been designed as a profiled metal tray with acting compositely with cast in-situ concrete slab. The slab is reinforced with a single layer of mesh. The composite slab is supported on a steel subframe. All steelwork below ground level will be subject to atmospheric conditions and will therefore require suitable protective coating to ensure longevity.

Upper Floors

The first floor and roof level plant room has been designed as a reinforced concrete slab on profiled steel decking acting compositely with steel floor beams. Composite action is ensured by the provision of site applied shot fired studs through the metal decking into the top flange of the steel beams. For this reason, the top flange of the floor beams will be required to be left unpainted.

Atypical Details

The single storey link structure will require careful detailing to ensure existing foundations are not undermined or surcharged during construction or by the new foundations in the permanent case. Pad and strip foundations will need to extend down to the underside of the existing foundation.

The columns below ground floor level will require splicing in order to include a thermal break in the column. A typical splice connection has been included to indicate design intent. The section of column below ground floor can then be galvanised to suit the exposure conditions.

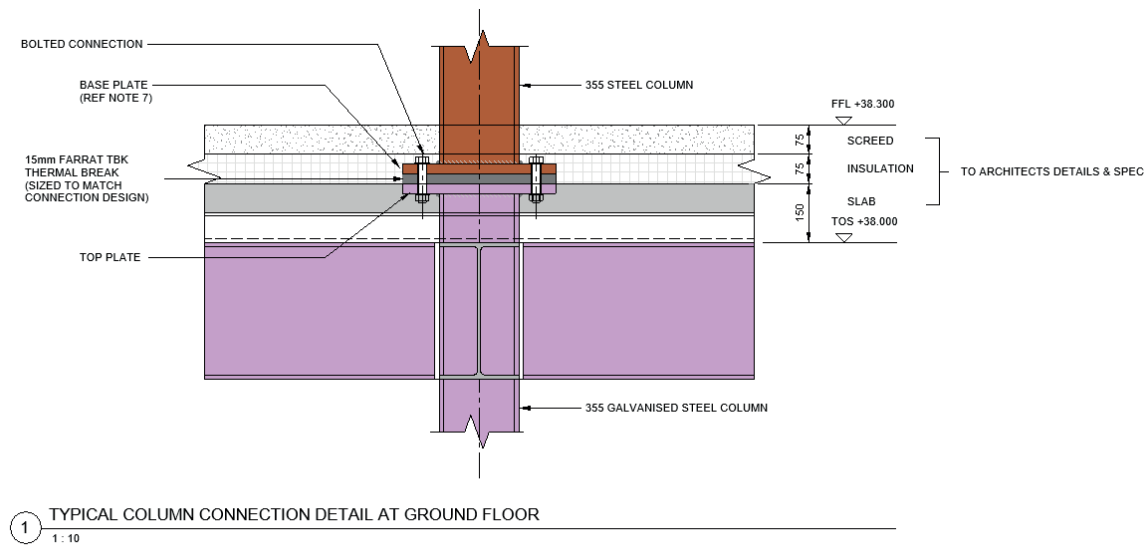
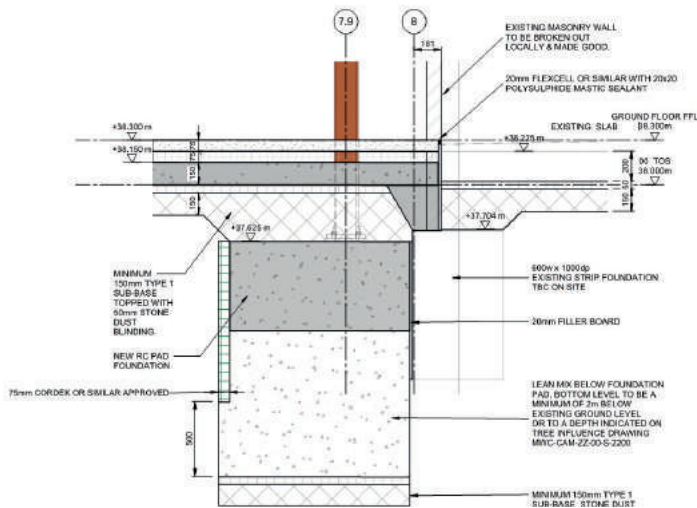


Figure 4.3 - Column Splice Detail (Thermal Break)



4.4 - Ground Floor Tying-in Detail

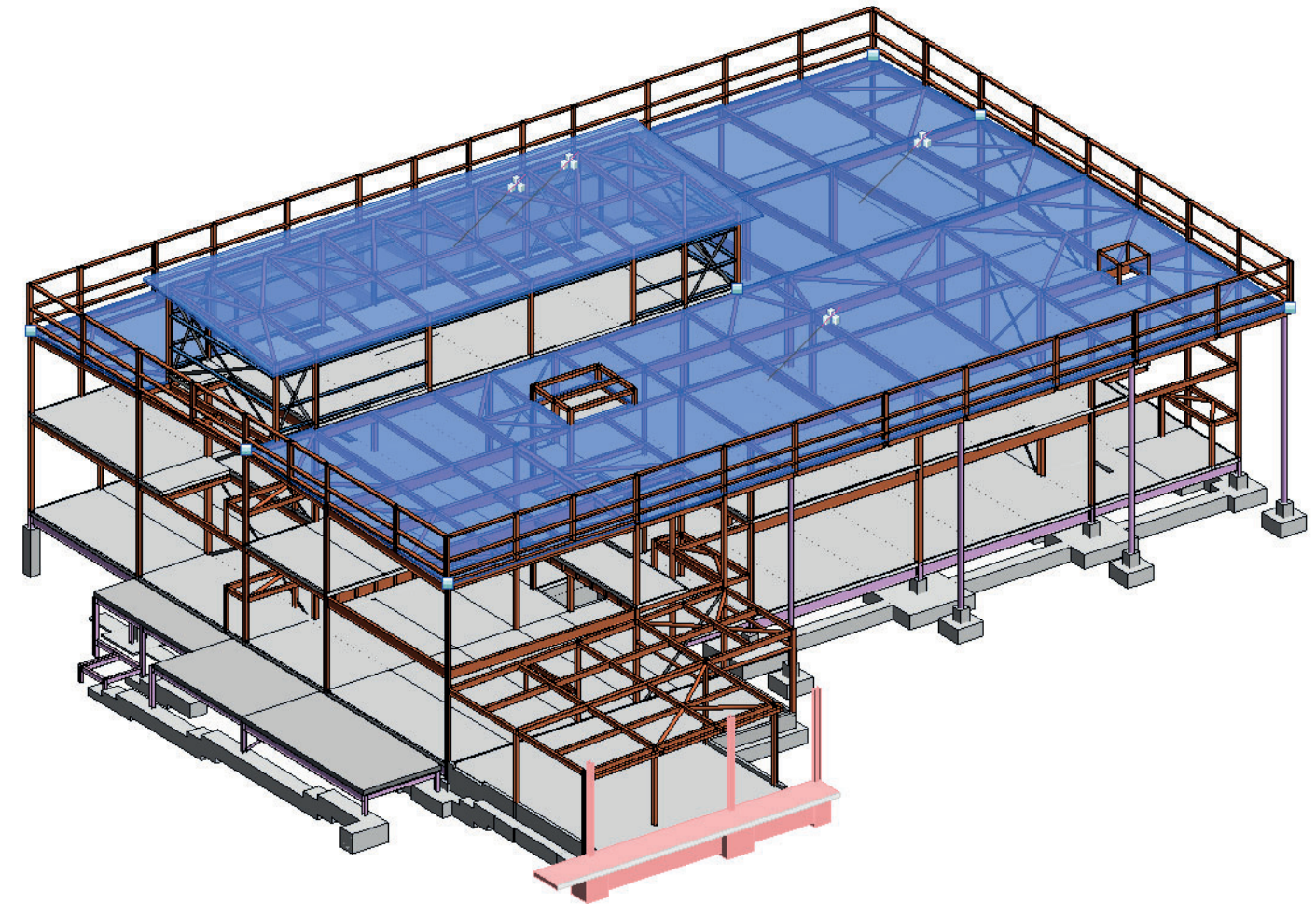


Figure 4.5 - 3D Structural BIM Model

Disproportionate Collapse

The building will be designed to meet the requirements of building regulations section A3 for sensitivity to disproportionate collapse. The building falls into category 2a which will require beam/column connections to be designed for a minimum tie force. Effective horizontal tying of steel frame elements is provided when connections are designed to resist a tensile force as a function of the factored beam end shear reaction, but as a minimum of 75kN.

Design Standards

The full suite of applicable Eurocodes has been used for the design of the structural elements of the new building, including:

- Eurocode 0 – Basis of Structural Design
- Eurocode 1 – Actions on Structures
- Eurocode 2 - Design of Concrete Structures
- Eurocode 3 - Design of Steel structures
- Eurocode 4 – Design of Composite Steel and Concrete Structures
- Eurocode 6 – Design of Masonry Structures
- Eurocode 7 – Geotechnical Design

The Eurocodes will be read in conjunction with all relevant sub-codes and UK National Annexes.

Material Properties

All concrete elements have been designed in accordance with Eurocode 2 and associated sub-codes and UK National Annex. With all concrete specified in accordance with BS EN 206-1.

Steel Elements have been designed in accordance with Eurocode 3, associated sub-codes and British National Annex. Steel is specified in accordance with the latest edition of the National Structural Steelwork Specification.

Design Life

The design life for the building is in accordance with EC0, table 2.1 Design working life category 4 – 50 years. Individual elements will have a life to first maintenance that varies based upon its exposure level.

Steelwork coating and protection is specified based on their specific environment in accordance with BS EN ISO 12944 and ISO 9223 to achieve the required time to first maintenance.

All steelwork below ground floor level has been specified as being galvanised, with columns further protected by being encased in concrete.

Interior environments			
Environment category	Corrosion risk		Typical steelwork location
C1	Very low	Because steelwork in a warm dry interior will not corrode, the structural stability of a building will not be threatened during its design life (generally taken as over 50 years). In such conditions no coating is required.	Inside dry buildings with neutral atmospheres: Offices, shops, schools, hotels, residences, airport terminals, hospitals, etc.
C2	Low	When steelwork is exposed to moisture corrosion will occur at a rate depending on the severity of the environment. In low risk environments systems B2, B3, B4, B9, B10 or B11 are proposed.	Inside buildings where condensation may occur: Exhibition halls, vehicle depots, sports halls, etc.
C3	Medium	In medium risk environments higher grade systems B5, B6, B7, B12, B13, B14 or B15 are proposed.	Inside production buildings with high humidity and some pollution: Food processing plans, dairies, laundries, breweries, etc.

Exterior environments			
Environment category ^(a)	Corrosion risk	Typical steelwork location ^(b)	
C3	Medium	Most rural and urban areas with low sulphur dioxide, acid, alkali and salt pollution.	
C4	High	Urban and industrial atmospheres with moderate sulphur dioxide pollution and/or coastal areas with low salinity.	
C5	C5I	Very high	Industrial areas with high humidity and aggressive atmospheres.
	C5M		Coastal and offshore areas with high salinity.

Figure 4.6 - Steel Protection

Fire Resistance

Structural elements supporting floors or access ways will be protected from fire by the application of an intumescent coating or boarded in commensurate with the required period of fire protection as determined by specialist. Refer to architectural drawings for details of fire protection requirements.

Loading

The self-weight of the structure and structural elements have been calculated to suit the details, structural form and architectural finishes. The structural frame and foundations have been based on the allowances scheduled in the following table:

Element	Design Load (kN/m²)
Ceiling and Services	0.30
Insulated Roof Decking	0.25
Structural Roof Tray	0.15
150 Composite Floor Slab	3.45
50 Concrete Screed	1.00
75 Concrete Screed	1.50

Table 1 - Permanent Load Allowances

Occupancy loads will be based on the room occupancy category for the respective areas in accordance with Table NA3 of the UK national annex to BS EN 1991-1. ~The following table summarises the requirements for Maelfa Wellbeing Centre:

Location	Design Load (kN/m²)
Offices	3.0
Partitions	1.0
Corridors/Circulation	4.0
Plant Rooms	7.5
Roof – No access (Maintenance Only)	0.6
Roof with General Access	1.5

Table 2 - Variable Loads

n.b. Additional Imposed Loads have been applied to areas of the roof to facilitate the maintenance and access strategy. Floor plates will generally be designed for a minimum imposed load of 4.0kN/m2, with plant areas considered separately.

Equivalent Horizontal Force / Geometric Imperfections

Loads as a result of Equivalent Horizontal Forces (EHF), or Geometric Imperfections, in the structure will be calculated in accordance with the relevant sections of BS EN 1992-1-1, BS EN 1993-1-1 and BS EN 1995-1-1 for concrete, steel and timber structures respectively.

Ultimate Limit State

In accordance with BS EN 1990:2002+A1:2005 (British Standards Institute, 2010) Equation 6.10, the following typical load combination factors will be applied for the Ultimate Limit State (ULS):

- Unfavourable permanent action will be multiplied by 1.35
- Favourable permanent actions multiplied by 1.0, 0.9 for overturning
- Leading variable action multiplied by 1.5
- Accompanying variable actions multiplied by 1.5 x Ψ_i (where $i=0$ to 2)

Serviceability Limit State

In accordance with BS EN 1990:2002+A1:2005 Equations 6.14a, 6.15a & 6.16a, of BS EN 1990 for the Characteristic, Frequent and Quasi-permanent load combinations the following typical load combination factors will be applied for the Serviceability Limit State (SLS):

- Unfavourable and favourable permanent action will be multiplied by 1.0
- Leading variable action multiplied by 1.0 for the Characteristic, $1.0 \times \Psi_1$ for Frequent, and $1.0 \times \Psi_2$ for Quasi-permanent load combinations respectively
- For the accompanying variable actions multiplied by Ψ_i (where $i=0$ for Characteristic, $i=1$ for Frequent and $i=2$ for Quasi-permanent load combinations respectively).
- Ψ_i varies depending on the occupancy of the space/building in accordance with Table A1.1 - Recommended values of ψ factors for buildings.

Horizontal Deflection (Sway & Wind Drift)

Deflections due to horizontal characteristic wind loading will be typically limited to height/300 per storey and total height of the building, except where cladding and glazing systems required tighter tolerances, where typically a limit of height/500 will be used.

Floor Deflection and Vibration

Floor deflections under imposed loads have been limited in accordance with the guidance provided in the respective code of practice.

Concrete:

- Imposed Load Deflection Span/500 < 20mm
- Total Load Deflection Span/250

Steel beams:

- Imposed load deflection Span/360
- Total Load deflection Span/250
- Cantilevers Span/180
- Relative Storey Drift Height/300

Floor systems have been designed in accordance with the relevant Eurocode and in accordance with SCI design guide P354, limiting the floor natural frequency to 5Hz and a response factor of 8.

Building Movement

As a general rule, for any steel structure greater than 80-100m consideration should be given to sub-dividing the structure to mitigate this thermal movement. The size of the proposed building is significantly less than this recommendation and therefore structural movement joints are not required.

Roof

The roof is nominally flat with a pitch of around 2o to facilitate drainage and mitigate against standing water. This will provide sufficient falls to satisfy recommendations of roofing contractor of minimum gradient of 1:80.

The proposed roof build-up consists of a standing seam roof panel system on a structural liner tray on main steel frame rafters. A structural tray has been chosen to reduce the structural zone, and consequently building height, and provide a safe working platform in the temporary condition.

Photovoltaic panels are to be installed on the roof of the main building. The PV panels will be fixed to the seams of the roof sheeting with proprietary fixings. An allowance of 0.15kN/m2 has been included in the dead loads to account for the self-weight of the PV units, and maintenance access allowance of 1.5kN/m2 has been used for the variable loads.

The roof top plant room includes a composite slab with a primary hot rolled steel structure forming the enclosure. A variable load of 7.5kN/m2 has been allowed for in the design. To facilitate the maintenance strategy of craning in replacement mechanical and electrical equipment, a landing area has been allowed for on the roof. This area has included variable loads to suit the anticipated equipment as indicated in the table below.

SURFACE WATER DRAINAGE

In October 2018, Welsh Government published the ‘Statutory standards for sustainable drainage systems – designing, constructing, operating and maintaining Surface Water Drainage Systems’. This standard is now mandatory for new developments with either a construction area greater than 100m² or more than 1 dwelling.

There are six mandatory standards to be achieved within the National SuDS standards, S1-S6. The following sections demonstrate compliance with standards S1 & S2, standards S3-S6 are covered in further detail within the Drainage Strategy Report (MWC-CAM-ZZ-XX-RP-C-00-0001).

Standard S1 – Surface Water Run-off Destination

This standard reviews the disposal routes for surface water run-off. The destinations are split into 5 levels with level 1 being the most preferential and level 5 being the least preferred and only used in exceptional circumstances.

Priority Level 1: Surface water runoff is collected for use;

The feasibility of utilising a Rainwatering harvesting system for the Wellbeing Centre has been reviewed and currently cannot be included within the budgeted works. There is also no known stresses on the mains water supply in the locality. The Centre will be replacing the existing health centre and therefore the water demand for the new facility will be partially offset by the existing facility. The Maelfa Welling Centre scheme is therefore deemed exempt from Priority Level 1.

Priority Level 2: Surface water runoff is infiltrated to ground;

Earth Science Partnership (ESP) have undertaken an intrusive site investigation on the site which included BRE Special Digest 365 compliant infiltration tests. The soakaway testing displayed no infiltration potential. This concurs with the work undertaken historically by ESP whom undertook the site investigation for the adjacent Powerhouse Extension works.

Priority Level 3: Surface water runoff is discharged to a surface water body;

The nearest Watercourse to the development is the Ordinary Watercourse north east of the Wellbeing Centre. The watercourse is approximately 100m from the northern boundary of the site, and completely surrounded by mature trees.

According to Cardiff Council mapping, the woodland surrounding the watercourse, is identified as the Llanedeyrn Woodlands Complex which is identified as a Site of Importance for Nature Conservation (SINC). The construction of an adoptable outfall through this woodland would result in loss of trees and cause detriment to the ecology in this area. A direct connection to the watercourse is not a feasible solution with regards to cost and environmental constraints.

Priority Level 4: Surface water runoff is discharged to a surface water sewer, highway drain, or other drainage system;

Welsh Water records show a surface water sewer at the frontage of the proposed wellbeing centre site. The 300mm diameter sewer runs west to east within the southern end of the existing car park and then heads north beyond the eastern boundary of the site. This runs parallel with foul sewer and ultimately discharges to the ordinary watercourse north east of the site.

It is therefore proposed to discharge into the surface water sewer at greenfield runoff rates, subject to agreement with the SuDs approval body and Welsh Water.

Standard S2 – Surface Water runoff hydraulic control

Greenfield Run-off Rates
The Greenfield Runoff rate for the proposed Wellbeing site has been calculated using the IH124 method. The urbanisation factor allows for the existing MUGA on the site. The IH124 method gives a QBar Urban value of 3.654 l/s/ha. This equates to a discharge restriction of 0.6l/s for the Wellbeing centre.

Attenuation Volumes
Attenuation volumes for the Wellbeing Centre, Southern Car park & Hard Play Area catchments have been calculated using the Quick Storage Estimate tool within Microdrainage. A summary of the attenuation requirements are shown in Tables 3, 4 & 5 below;

Wellbeing Centre Attenuation Storage Volume Range (m³)			
Impermeable Area = 0.187ha			
1 in 30yr Return Period		1 in 100yr Return Period +30% Climate Change Allowance	
Minimum	Maximum	Minimum	Maximum
76	125	150	228

Table 3 – Attenuation Storage Volumes (Wellbeing Centre)

Wellbeing Centre Attenuation Storage Volume Range (m³)			
Impermeable Area = 0.129ha			
1 in 30yr Return Period		1 in 100yr Return Period +30% Climate Change Allowance	
Minimum	Maximum	Minimum	Maximum
12	26	31	58

Table 4 – Attenuation Storage Volumes (Southern Car Park)

Wellbeing Centre Attenuation Storage Volume Range (m³)			
Impermeable Area = 0.046ha			
1 in 30yr Return Period		1 in 100yr Return Period +30% Climate Change Allowance	
Minimum	Maximum	Minimum	Maximum
4.5	9.6	11	21

Table 5 – Attenuation Storage Volumes (Hard Play Area)

Standard S3, S4, S5 – Water Quality, Amenity & Biodiversity

The meet these standards a SUDs treatment train will be used including a number of above ground SUDs features. The main site will include source control measures such as permeable paving and SUDs planters. These will then cascade into the SUDs rain garden to the east of the site and online Swale to the north.

The permanent car park will be served a series of linked rain gardens.

The temporary car park will be constructed with a permeable bodpave system.

Standard S6 – Design of drainage for Construction, Operation and Maintenance and Structural Integrity

The SuDs solution has been designed in accordance with the SuDS manual and is generally served by shallow SuDs features.

All areas of the proposed SuDS infrastructure are in accessible areas for ease of maintenance. A footpath runs parallel to the rain garden and swale area. This footpath is interconnected with the existing public footpaths adjacent the site.

The Health Board will be responsibility of the SUD features, the SAB will not adopt them if they only serve 1 property.

The surface water drainage network has been designed to not to surcharge in the 1 in 1 year storm event and not to flood within the 1 in 30 year event. The system generally contains the 1 in 100 yr +40% event and only pockets of flooding will be accepted in this storm event provided that the flooding is directed away from the building and of acceptable depths & velocities.

SAB Approval

A formal written pre app SUDs response is currently awaited before submitting the full SUDs application. The SUDS scheme has been well received by the SAB during the pre app meetings.

S185 Agreement

The surface water sewer serving the Powerhouse Hub extension runs through the proposed site of the Wellbeing Centre. As the Powerhouse and Wellbeing are being connected the surface water sewer will be divested via a S185 agreement and the pass through flow catered for within the new drainage system.

All surface water drainage works are designed in accordance with Buildings Regs Part H, Sewers for Adoption 7th edition and the ‘Statutory standards for sustainable drainage systems – designing. Constructing, operating and maintaining surface water drainage systems’.

SURFACE WATER DRAINAGE

Welsh Water have confirmed there is sufficient capacity within the sewerage network to accommodate the development.

Welsh Water record plans show a gravity foul sewer on the southern side of Round Wood road. The sewer runs in an easterly direction and crosses underneath Round Wood parallel to the former subway. The 225mm diameter foul sewer continues to run north, following the alignment of the existing footpath which is close to the eastern boundary of the proposed Wellbeing Centre.



Figure 6.1 – Extract from Welsh Water Records

Wellbeing Hub @ Maelfa

The Powerhouse Extension foul drain currently drains via a lateral connection into Round Wood Road. The installed drainage line is at shallow depth and laid at minimum gradients. It is unlikely therefore that a gravity connection from the new Wellbeing Centre can connect to this existing drainage line.

The proposed foul drainage solution for the Wellbeing Centre includes a new gravity drain, that runs in a north easterly direction and connects into the Welsh Water foul sewer east of the site.

The drainage strategy drawing, MWC-CAM-ZZ-00-GA-C-52-1101, shows the proposed routing of the foul drainage system.

The connection into the Public Sewer will require a S104 lateral and S106 agreement with Welsh Water. A demarcation chamber will be required near the site boundary to mark the extent of maintenance responsibilities.

The proposed peak foul flow for the Maelfa Wellbeing Centre has been calculated based on the discharge unit method and using a kDU frequency factor of 0.7. This gives a peak foul discharge rate of 4.8l/s.

Due to the position of the tie-in between the Wellbeing Centre and Powerhouse Hub there will be a requirement for an internal chamber servicing an existing SVP from the Powerhouse Hub.

All foul drainage works are designed in accordance with Buildings Regs Part H and Sewers for Adoption 7th edition.

EXTERNALS

It is proposed to replace the existing Powerhouse Car Park with an asphalt pavement construction capable of receiving occasional HGV movements. The remaining footway and footpaths on the site will either be traditional asphalt or permeable paving.

The new car park on the existing health centre site will be constructed using a traditional asphalt construction which will not cater for HGV movements.

The hard surface play area will be a porous asphalt construction.

The temporary car park to the is proposed to be constructed with a Bodpave system to avoid any significant surface drainage infrastructure requirements. The pavement will be designed with a short design life and therefore a limited design capacity in terms of HGV movements or Million Standard Axles (MSA) as referred to within the DMRB pavement design guide.

ESP have recommended using a design CBR value of 5% to design the pavement foundations.

EARTHWORKS, CUT & FILL ANALYSIS

A cut and fill earthwork analysis has been undertaken using Civils 3D software for each of the site. Particular focus has been on the main site, with the flexibility on proposed levels being fairly limited on the permanent and temporary car park sites because of the surrounding constraints. The position of the hard play area has been sited in an elevated material to reduce the amount of arisings on site. The analysis estimates 2,190m³ of arisings including foundation & drainage arisings.

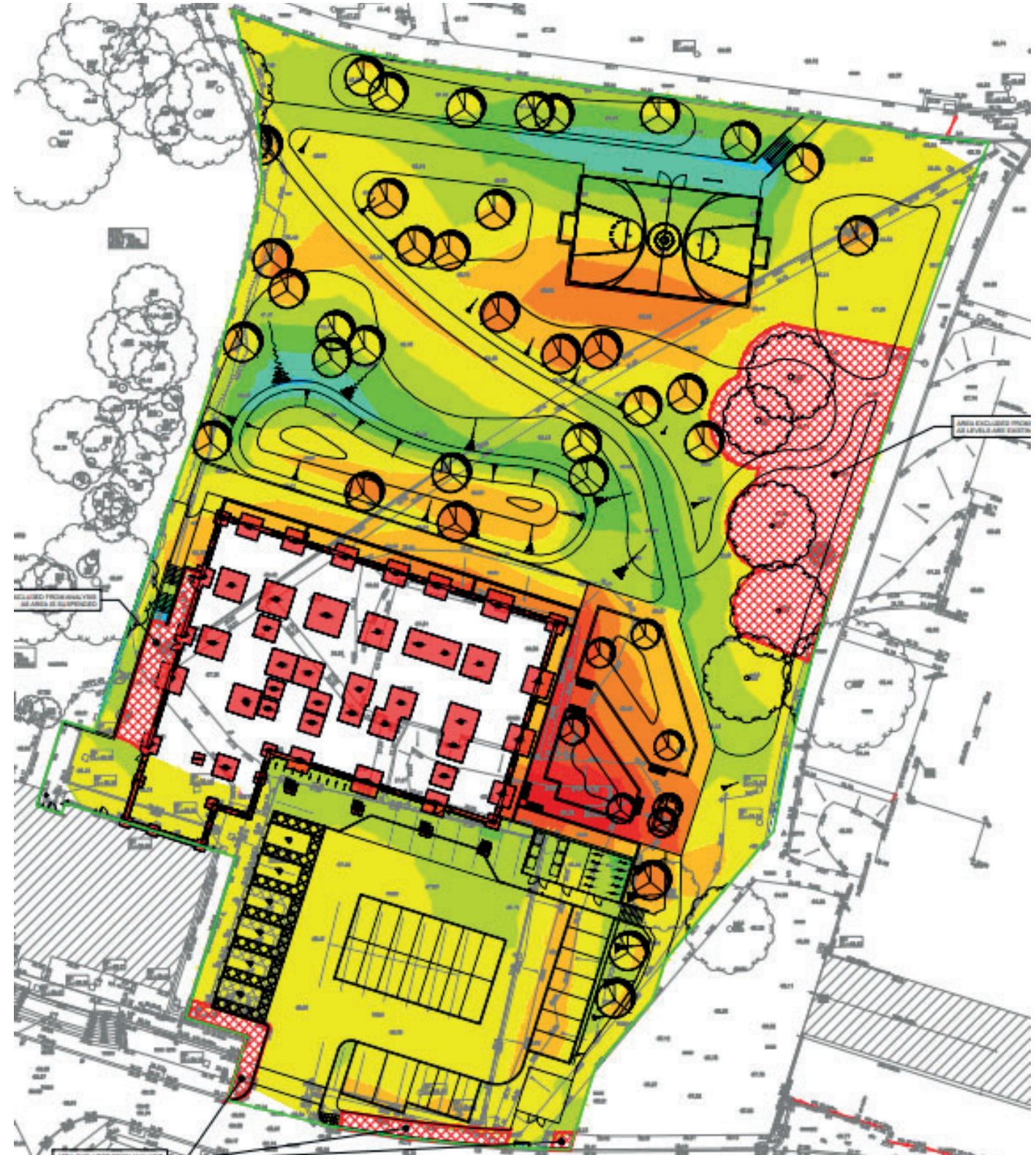


Figure 9.1 – Cut and Fill Earthworks Analysis (Main Site)

HIGHWAYS & TRANSPORT

The proposals include the widening of the existing junction to the Powerhouse Hub car park. Whilst some of the work will be carried out within Public Highway land, given the small nature of the works involved, Cardiff Council highways have accepted that a formal S278 agreement is not required for the works. Only a Section 50 road opening notice will be required.

A transport statement and travel plan have been produced to support the approved planning application.

The permanent parking provision for the development complies with the current Parking Standard for Cardiff Council which dictates maximum parking numbers.

Provisions have been made for the access of mobile units to the north eastern corner of car park on the main site. A 16.5m long Articulated HGV can enter the site from the west, circulate clockwise around the car park, drop off the trailer and exist west. This would be a managed manoeuvre with some spaces kept free of vehicles.

The main site car park design allows Cardiff Council standard refuse vehicles to come on to the site and circulate the car park and reduce carry distances for refuse collection.

	5.3	Building Services Report
--	-----	--------------------------

5.3 Building Services Report - Introduction

Introduction

Strategic overview

The Stage 4(a) mechanical and electrical engineering (MEP) designs have been developed with a view to minimising carbon emissions through the utilisation of passive design techniques and renewable technologies.

Detailed Low Zero Carbon (LZC) and Decarbonisation studies have been undertaken to which reference should be made. The outcomes of the studies have been included within the final MEP design solution presented. Please refer to section 9.6 of this document for further information on Decarbonisation.

The Stage 4(a) MEP designs are reflective of Cardiff and Vale University Health Board's (C&V UHBs) commitment to establishing an efficient building that supports the wellbeing of both its staff and patients. The new building is set to achieve a BREEAM 2018 rating of 'Excellent' and an EPC accreditation of 'A'.

It is general the MEP designs encompass the following:

Mechanical engineering

- Natural gas distribution
- Energy metering
- Low temperature hot water heating
- Natural Ventilation
- Mechanical supply and extract ventilation
- Comfort cooling
- BEMS control

Public health services

- Cold water distribution
- Energy metering
- Domestic hot water distribution
- Foul water drainage (above ground only)

Fire protection services

- Fire hydrants
- Fire detection and alarms installation

Electrical engineering

- Low voltage distribution
- Energy metering
- General power installation
- Earthing and bonding
- Works associated with mechanical plant
- General lighting
- Emergency lighting
- External lighting
- Facilities for the disabled
- Doctor and patient call systems
- Lightning protection
- Surge protection
- CCTV
- Access control
- Intruder alarms
- Structured cabling

Design guidelines

The Stage 4(a) MEP designs have primarily based around guidance contained within WHBN 36.

In addition, the Stage 4(a) MEP Derogations Register outlines the agreed design ethos, following discussions with the C&V UHB, and incorporates all relevant WHBN, HBN, WHTM and HTM guidance.

Technical basis of design

In addition to the above the Stage 4 (a) MEP design make due regard to the current editions of the following regulations, requirements and design criteria:

General standards

- The Building Regulations (in particular Part L (2014): Conservation of Fuel and Power)
- BS 7671:2018 (IEE Wiring Regulations 18th Edition)
- The Gas Safety Regulations
- The Water Regulations
- Health and Safety at Work Act
- The Construction Design and Management Regulations
- BS 8900 Guidance for Managing Sustainable Development
- Welsh Government Requirements

CIBSE guides

- SLL Code for Lighting
- SLL Lighting Guide 2
- SSL Lighting Guide 3
- SLL Lighting Guide 6
- SLL Lighting Guide 7
- Guide B: Heating, Ventilating, Air Conditioning and Refrigeration
- Guide B3: Ductwork
- Guide B5: Noise and Vibration Control for HVCA
- Guide B4 Refrigeration and Heat Rejection
- Guide C: Reference Data
- Guide D: Transportation Systems in Buildings
- Guide F: Energy Efficiency in Buildings
- Guide G: Public Health Engineering
- Guide J: Weather, Solar and Luminance Data
- Guide K: Electricity in Buildings
- Guide L: Sustainability
- Guide M: Maintenance Engineering and Management
- TM13: Minimising the Risk of Legionnaires' Disease
- TM39: Building Energy Metering
- Commissioning Codes

HVCA guides

- TR/20: Installation and Testing of Pipework Systems
- TR/19: Guide to Good Practice - Internal Cleanliness of Ductwork
- TR/30: Good Practice Guide - Heat Pumps
- TR/6: Guide to Good Practice for Site Pressure Testing of Pipework

Wellbeing Hub @ Maelfa

External temperatures

- Winter: -4°C db 100% RH (Fabric heating)
-8°C db 100% RH (Air Handling systems)
- Summer: 28°C db 50% RH

Internal temperatures

Internal temperatures aligned with the requirements of HTM 03-01 Part A (unless derogated) and ADB Room Data Sheets where presented.

Summertime temperatures

Summertime temperatures aligned with the requirements set out within HTM 03-01 and BREEAM 2018.

Relative humidity

The control of relative humidity has not been provided within the MEP design.

Occupancy

Occupancy rates are based on those defined on the Architectural layouts.

Ventilation rates

Mechanically ventilated spaces are designed to suit the minimum fresh air requirements of occupants and to satisfy WHBN and HTM criteria.

Naturally ventilated spaces are designed to comply with Building Regulations Part F (2010) and to satisfy CIBSE TM52 - Adaptive Overheating.

Internal heat gains

- Occupancy: 90 Watts sensible per person / 60 Watts latent per person
- General Lighting: 8 Watts/m² sensible
- Specialist Lighting: To be confirmed by end users
- Equipment: 10 Watts/m² sensible
- Specialist Equipment: To be confirmed by end users

Cold water storage

A small split break-tank of approximately 1000 litres has been included within the design, in full compliance with water bye-laws. The tank is provided to enable a boosted cold water supply to serve the development.

It should be noted that C&V UHB confirmed a preference not to have any significant on-site cold-water storage.

Illumination levels

Illumination levels across the development are in accordance with CIBSE / SLL Codes of Practice.

Fire systems

The classification of the fire detection and alarm system is L1 as defined within BS 5389.

Internal noise criteria

Internal noise criteria complies with design standards along with the recommendations of the development's Acoustician and HTM-08-01.

In summary, the following performance standards for internal ambient noise levels have been followed:

- Large meeting rooms – 35dB
- Consulting and treatment rooms, small meeting rooms, break out spaces and interview rooms – 40dB
- Public spaces including waiting areas – 50dB
- Circulation and hygiene rooms – 55dB

The plant room noise level will not exceed NR60.

External noise criteria

External noise conditions were confirmed by the development's Acoustician as being favourable to a natural ventilation strategy via openable windows. A strategy adopted into the Stage 4(a) MEP designs wherever possible.

Fabric leakage (air tightness)

The development has been designed against a targeted air change rate of 5m³/h/m².

General operation

It is understood that the Wellbeing Centre will generally operate Monday to Friday from 8am to 7pm. This said, some community (clinical) staff may need to access the facility during periods that sit outside of normal operating hours this is facilitated by a separate 'out of hours' entrance point.

The shared Powerhouse Hyb elements of the development are also expected to open on Saturdays from 8am to 5pm.

As the building will function as a Wellbeing Centre, where patients are accompanied or are under supervision, anti-ligature provisions have not been made.

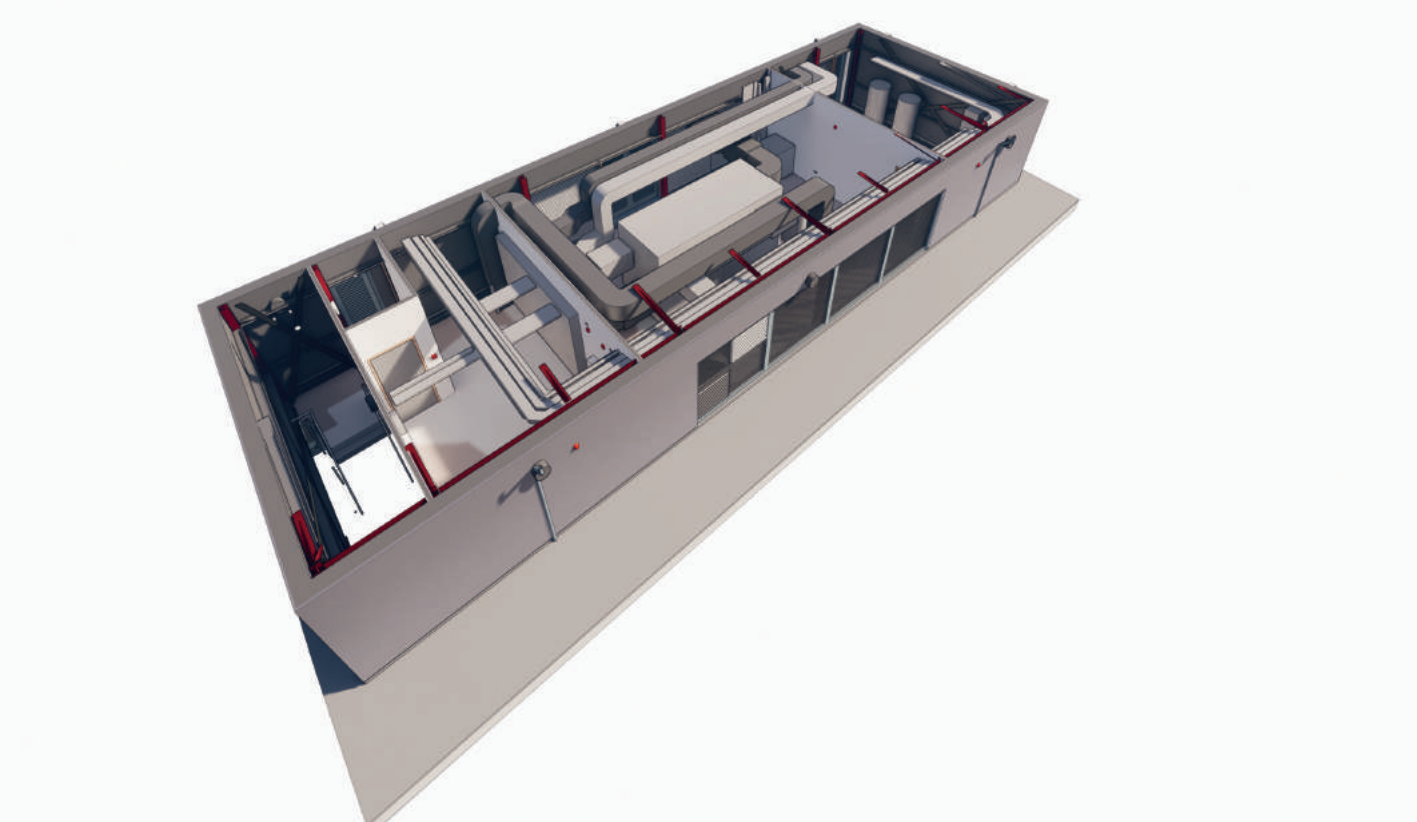
Plant locations

The Wellbeing Centre benefits from a rooftop plant room. Distinct areas have been allocated across this space for LV switchgear, mechanical ventilation equipment and heating / domestic hot water (DHW) plant. Vertical and horizontal distribution takes the form of designated risers and ceiling voids.

Local distribution centres have been provided within the main distribution risers at both the ground and first floor levels. In addition, LV distribution boards have been placed in storage areas.

A dedicated ICT Hub room has been provided on the first floor of the Wellbeing Centre.

External mounted equipment is limited to the provision of roof mounted condensers and photovoltaics panels.



Wellbeing Hub @ Maelfa

Incoming Services

Under our Stage 4(a) MEP designs the following incoming connections will be provided.

LV connections

To enable the works Western Power Distribution will provide the development with a new 500kVA HV / LV substation that will be connected to their existing HV network.

The new HV / LV substation will be located within the boundary of development site, in a position that sits within 10 meters of the main footpath.

The new HV / LV substation will provide a dedicated LV connection to the Wellbeing Centre that will terminate within a WPD cut-out and metering arrangement. The WPD cut-out and metering arrangement will be located within the development's ground floor incoming supply cupboard. The characteristics of the new LV connection shall be as follows:

- Maximum demand of 150kVA (220A)
- 400V / 230V, TPN, 50Hz

The new HV / LV substation will also be used to provide the following, separately metered, LV connections to serve the main car parks:

- On-site car park
 - Maximum demand of 40kVA (60A)
 - 400V / 230V, TPN, 50Hz
- Off-site car park
 - Maximum demand of 5kVA (63A)
 - 230V, SPN, 50Hz

The LV connections to the car parks will be terminated, within dedicated feeder pillars, by the provision of WPD cut-out and metering arrangements.

The WPD LV connection that currently supplies the adjoining Power House (Hyb) will be replaced with a new service that originates from the new WPD HV / LV substation. The characteristic and connection arrangements of the new LV connection will match that of the existing installation. This redirecting of the supply is to ensure that only one source of supply can ever be present between the shared areas of the development.

In addition, external lighting along the relocated public footpath and a CCTV camera provided to cover the relocated MUGA will be served by un-metered WPD LV connections, in accordance with standard Cardiff City Council agreements.

Water connections

A new water connection will be provided to the Wellbeing Centre from the existing Welsh Water (WW) infrastructure on Round Wood. The new metered supply will enter the building in one of the main riser, having already branched a sub-metered supply to the café kitchen. From where it will rise to the rooftop plant room.

Gas connections

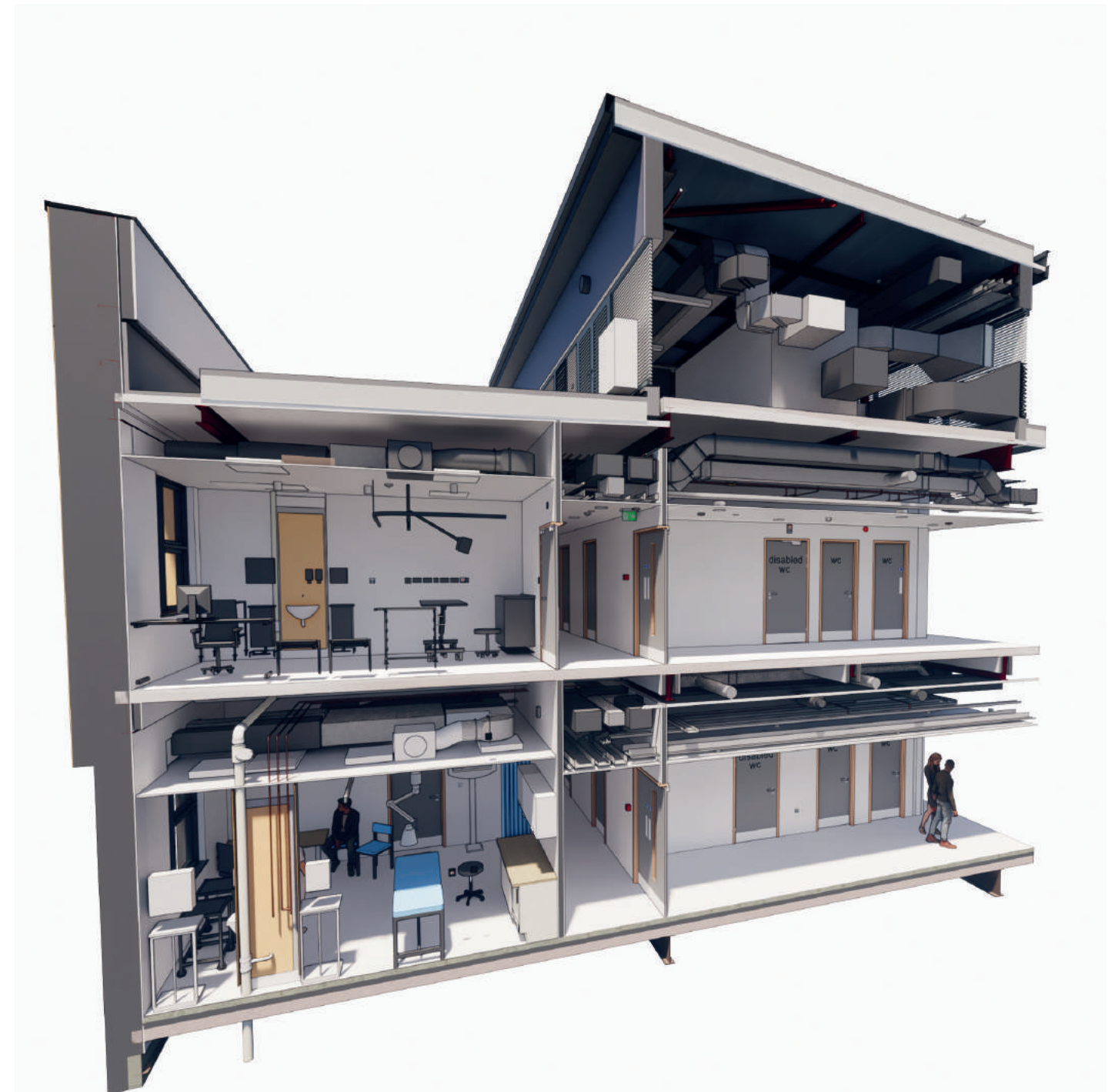
A new gas connection will be provided to the Wellbeing Centre from existing Wales and West Utilities (WWU) infrastructure on Round Wood. A new meter kiosk will be located within the external bin and bike store compound. From there a new metered supply will cross, below ground, to the south elevation where it will rise and enter the building above ground. The supply will then cross the development, via a ventilated ceiling void, to one of the main risers. From where it will rise to the roof top plant room.

C&V UHB will be responsible for the supply and provision of the gas meter. Inclusive of costs. In addition, a new WWU gas supply will be routed from Round Wood to recent the Powerhouse Hyb, as the buildings existing supply sits within the footprint of the new Wellbeing Centre.

Data / telecommunication connections

New incoming cabling ducts and draw pits will be provided to serve the development. The new ducts and draw pits will be connected back to the existing British Telecom 'Open Reach' network from one of the building's main risers. The installation will therefore be provided in full accordance with British Telecom 'Open Reach' standards.

C&V UHB will be responsible for the supply and provision of all incoming data / telecom services. Inclusive of costs. Apart from the supply of British Telecom lines as required to enable the commissioning of the lift, fire alarms and security systems.



Mechanical engineering services overview

The Stage 4(a) mechanical design has followed the:

- Requirements of WHBN 36
- Where not stated in WHBN 36 then HTM 03-01 has been used
- Where neither document has stated requirements then the ADB sheets have been used to set design parameters

Natural gas distribution

The incoming gas main will enter the building on the southern elevation and distribute internally, to one of the main risers, via the ground floor ceiling void. From here, the gas main will rise to the rooftop plant room.

Adequate ventilation will be provided to these voids and risers in compliance with Gas Safety Regulations.

Gas meters will be located at the boundary, and within the plant room.

Sensors and manual shut-off systems will be provided within the plant room.

There are no gas-fired catering facilities within the new Wellbeing Centre.

Energy metering

Energy metering will be afforded across the development in accordance with Approved Document Part L2 and BREEAM 2018 requirements.

Sub metering will be installed to allow the thorough interrogation of the developments energy usages in accordance with CIBSE TM39.

The information produced, by the energy metering, will be exported to the Building Energy Management System (BEMS) to enable remote and automatic meter reading, data collection and targeted facilities management.

Energy metering will be installed to enable at least 90% of the estimated annual energy consumption of each fuel to be assigned to the various energy-consuming systems:

- Space heating
- Domestic hot water heating
- Cooling
- Ventilation (major fans)
- Pumps
- Controls

All meters and their associated installations will be to a fiscal (OFGEM) standard - suitable for billing, invoice and taxation purposes.

Low temperature hot water heating

The heating system will consist of an accelerated two pipe low pressure hot water heating circuit with a flow of 80°C and a return of 60°C provided via two low NOx, gas fired, modular, high efficiency, condensing boilers. The boilers will be installed within the rooftop plant room.

The boilers will be sized to provide 150% of the peak load with each boiler being capable of meeting 75% of that figure. The anticipated total heating load of the building is 150kW, therefore, each boiler will be capable of a rated output of 113kW.

Fresh air for combustion and minimizing overheating of the plant room will be provided via louvres to outside.

The boilers will be arranged for cascade control with duty share and automatic changeover in the event of failure.

All boilers will be provided complete with the following equipment and fittings:

- Insulated metal casings
- Burner modulating control
- Manual reset high limit temperature and alarm reset
- No flame lock-out and alarm indication
- Boiler temperature gauge
- Boiler pressure gauge
- Safety/relief valve, in accordance with BS 759, with discharge pipe terminating 150mm above floor level
- Hose union and valved drain outlet
- Flue outlets
- Electrical isolators
- Volt-free contacts for enable and high/low cut-out indication to the control system
- Pre-wired instrument panel with on/off switch
- All necessary valves
- Mountings and fittings to BS 759
- Condensate drain pipework
- A gas isolating valve at each boiler

A primary low pressure hot water heating circuit will supply a low loss header which will be provided with the following circuits as a minimum:

- 1Nr Constant temperature
- 1Nr Variable temperature

Each circuit will be provided with two inverter driven single head pumps set up as run and standby with auto-change over and duty share.

Both primary and secondary distribution circuits will be provided with:

- All regulation and monitoring devices
- Insulation, (minimum 38mm and 0.025 W/m2K)
- Couplings
- Expansion devices
- Commissioning components
- Safety equipment
- Ancillaries

The following will be provided to ensure the proper, safe and efficient commissioning, operation and maintenance of the complete system:

- Isolation valves
- Strainers
- flexible mounts
- Couplings and anti-vibration devices
- Flow regulation valves
- Double regulation valves
- Temperature and pressure gauges
- Test points
- Vent and drain points
- Control sensors and transducers
- Control valves
- Chemical dosing sets
- Flushing valves
- Air and dirt separator
- Expansion loops and bellows and pipe guides
- Anchor points, and
- Ancillaries to form a complete installation

Wellbeing Hub @ Maelfa

A variable temperature weather compensated circuits will be distributed in ceiling voids to serve radiant panels and heat emitters throughout the building.

Radiant panels

Generally radiant panels will provide heating throughout the new Wellbeing Centre by variable temperature, weather compensated, circuits.

Radiant panels will be co-ordinated with other services and will be suitable for their intended locations (within laying ceiling grid).

Each panel will be controlled via a 2-port control valve linked to a local room sensor and the central BEMS.

The back of each panel will be insulated with a minimum of 40mm mineral wool with a reinforced aluminium foil finish.

The panels will be individually supported utilising adjustable hangers direct from the structure and will not rely of the ceiling grid system for any support.

Within treatment rooms the installation of radiant panels will be co-ordinated, such that, any future maintenance of the MVHR unit is not restricted.

LST Radiators

LST radiators will be utilised to heat the two fire escape / staff stairwells. The radiators will be selected and sized as to not adversely impact circulation in these areas.

Fan coil units

Refrigerant, split DX, fan coil systems will be located within the ground floor group rooms, seminar room and café seating area to provide heating and cooling. Each system will be provided with local controls to enable local occupant control (within pre-set temperature ranges) and boost levels.

Note: Fresh air will be provided via local mechanical ventilation heat recovery (MVHR) units.

Overdoor heater

An electric overdoor heater will be provided at the main entrance to the Wellbeing Centre.

Ventilation

Natural ventilation

In keeping with a low carbon design philosophy the use of natural ventilation has been utilised wherever possible and practical.

This generally consists of opening windows based on single, cross and stacked natural ventilation principles.

In the main, the natural ventilation strategy will be via the operation of manually openable windows. This said, high-level windows will be provided within the reception area that will be controlled by manually controlled actuators.

CO2 monitoring will not be provided within any of the naturally ventilated spaces.

Mechanical ventilation

All mechanical ventilation systems installed within the Wellbeing Centre will be in-compliance with the following:

- WHBN 36
- Approved Document Part L2
- British Standards
- CIBSE Codes AM10

General supply and extract system – central

Internal (non-treatment spaces) requiring mechanical ventilation will be served by a central AHU located within the roof top plant room, with ductwork running in the main risers and corridor ceiling voids.

The C&V UHB have confirmed that the specification for this AHU can derogate from HTM 03-01 requirements but that adequate space for maintenance must be provided.

Note: Space has been allocated within the AHU for the future provision of a cooling coil.

Ventilation flow rates will be as per WHBN 36 (HTM03-01 Part A) unless deviated within the ADB room data sheets (RDS).

All internal stores will be mechanically ventilated, this is an enhancement of WBHN 36 requirements, to reflect the anticipated room use and nature of items being.

All ductwork will be provided with fire stopping and attenuation in accordance with the developments fire and acoustic strategy reports.

Internal (non-treatment) spaces, such as, offices and meeting rooms will achieve a noise rating of NR35 as noted with the acoustic strategy report.

It is not proposed to provide any mechanical ventilation within the north corridor as openable windows are provided on both floors.

General supply and extract systems - remote

All treatment rooms (including the podiatry clinic) will be able to utilise a mixed-mode ventilation strategy via the use of manually openable windows or local mechanical ventilation heat recovery (MVHR) units.

This said it is anticipated that windows may remain locked and that the treatment rooms will be solely mechanically ventilated. This operational decision is to be confirmed by the C&V UHB during the commissioning period.

This mixed mode strategy will also be provided within the two first floor administration areas to assist with managing internal gains.

The MVHR units will be located within the ceiling voids of the rooms they serve; with louvres to allow connection positioned above each room's associated windows.

Local controls will be afforded to each system to provide variable volume to suit CO2 levels and temperatures.

Note: The MVHR units will provide fresh air requirements for the space. Radiant panels will provide heating.

Ventilation flow rates will be as per WHBN 36 (HTM03-01 Part A) Ventilation as agreed with the C&V UHB.

The MVHR units within treatment rooms will be provided with filters to a grade F7 standard

Internal (treatment) spaces will achieve a noise rating of NR35 as noted within the acoustic strategy report.

Dirty extract system

A central dirty extract system will be provided to serve WC and dirty utility spaces, with makeup air being via the under cutting of doors or provision of door transfer grilles.

The central extract system will be operated via a time clock with night-time setback to a trickle ventilation setting.

Wellbeing Hub @ Maelfa

The centralised dirty extract system will be located in the rooftop plant room, with ductwork running in the main risers and corridor ceiling voids. All ductwork will be provided with fire stopping and attenuation in accordance with the developments fire and acoustic strategy reports.

Ventilation flow rates will be as per WHBN 36 (HTM03-01 Part A) unless deviated within the ADB room data sheets (RDS). These spaces will achieve a noise rating of NR45 as noted within the acoustic strategy report.

Kitchen café extract system

A dedicated extract fan, suitable for catering environments, will be provided within the ceiling void of the café kitchen. The fan will serve the kitchen canopy (provided by the Catering Specialist) and an extract grille within the servery area.

The system will comprise of rigid galvanised steel melinex lined ductwork routed from the ceiling grille and canopy, via the inline extract fan, to a louvre that will discharge discreetly to outside.

The extract fan will be operated via local controls within the café kitchen area.

The extract fan will be provided complete with inline attenuation (also melinex lined) to meet the specified NR level as noted within the acoustic strategy report.

Specialist ventilation

All specialist ventilation, as required for clinical procedures, within the Wellbeing Centre will be provided directly by the C&V UHB as part of any fit-out works.

Comfort cooling

Comfort cooling will be provided to those areas that exceed thermal comfort analysis or have a particular summer time condition.

General accommodation

Refrigerant, split DX, fan coil systems will be located within the ground floor group rooms, seminar room and café seating area to provide heating and cooling. Each system will be provided with local controls to enable local occupant control (within pre-set temperature ranges) and boost levels.

External condensers will be located on the roof of the development.

ICT hub room

The ICT hub room will be served by a dedicated (N+1) refrigerant, split DX, fan coil system to provide heating and cooling. The system will be provided with local controls to enable local occupant control (within pre-set temperature ranges) and boost levels.

In line with the C&V UHB's 'Cabling Infrastructure Design Specification - Version 10'. The ICT hub room will be provided with cooling to ensure a continuous operational range of 20 - 23°C.

External condensers will be located on the roof of the development.

As agreed with the C&V UHB mechanical ventilation will not be provided to the ICT hub room.

Medical gases

All medical gas provisions, as required for clinical procedures, within the Wellbeing Centre will be provided directly by the C&V UHB in the form of portable bottles.

It has also been confirmed by the C&V UHB that N2O will not be stored or utilised at this development site.

Building energy management system

All items of plant and equipment within the Wellbeing Centre will be controlled by an integrated system of distributed intelligent controllers. These will be networked together via a structured wiring system to form a fully integrated software based building energy management system (BEMS). The BEMS will be of the IP addressable type.

The BEMS will provide comprehensive condition monitoring of engineering plant while allowing the optimising of system settings and performance. The BEMS will also provide central automated fault reporting and logging for engineering plant.

An interface panel will be provided on the fascia of the main mechanical control centre (MCC). A fire alarm system interface will also be afforded to this location. On receipt of a fire alarm signal, the BMS will shut down MEP plant as defined with the overall fire alarm cause and effect.

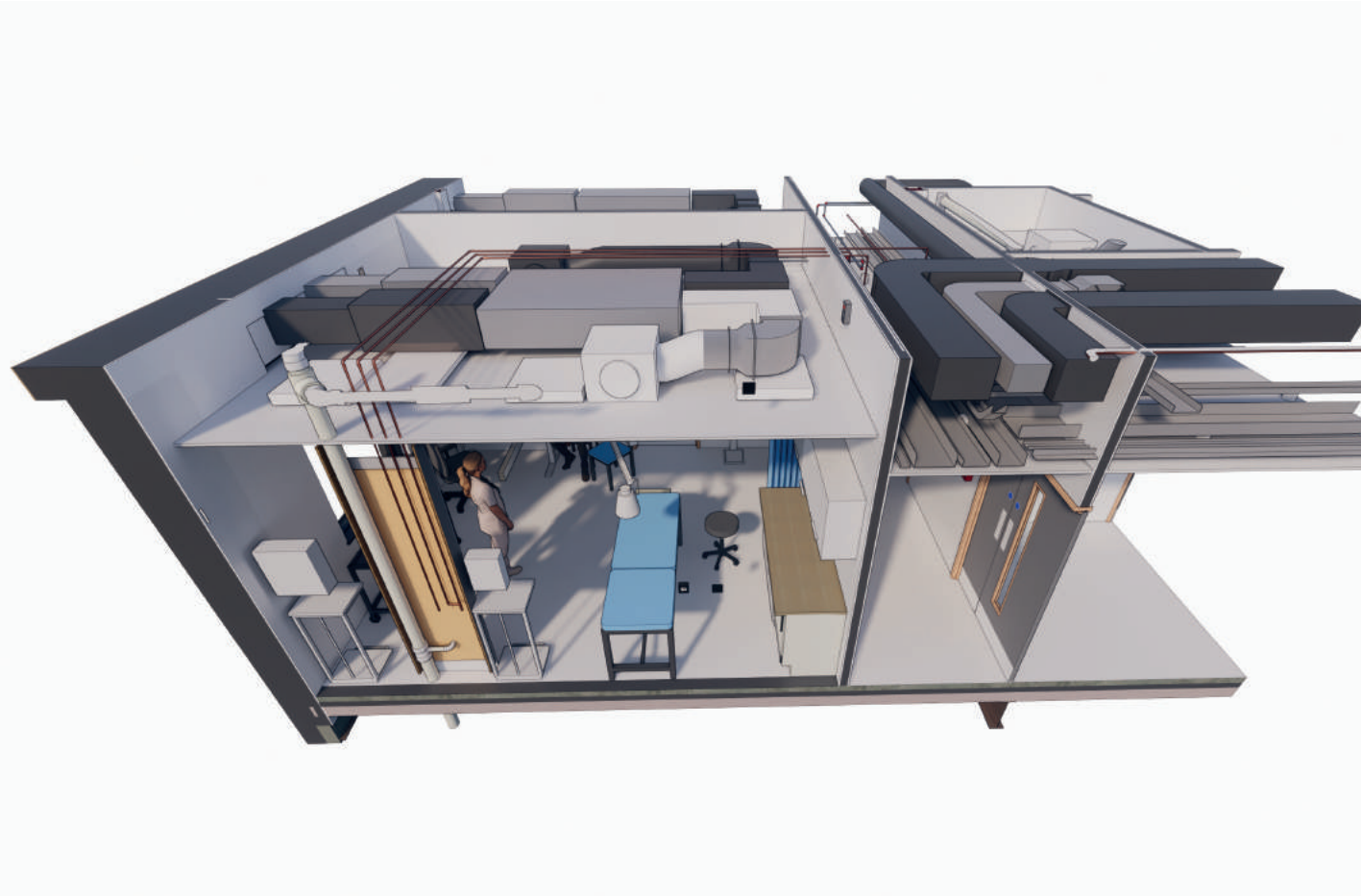
A fireman's override panel will be provided at the main entrance to allow local control of the ventilation systems by the fire brigade.

Legionella and monitoring

The mechanical installation will be provided in accordance with L8, The control of Legionella bacteria in water systems, Approved Code of Practice and Guidance and WHTM 04-01.

Thermal zoning and controls

The strategy for the proposed heating, cooling and ventilation systems are such that each system can operate efficiently and appropriately for each room occupant and room use via localised control.



Electrical engineering services overview

The Stage 4(a) electrical design has followed the:

- Requirements of WHBN 36
- Where not stated in WHBN 36 then HTM 06-01 has been used
- Where neither document has stated requirements then the ADB sheets have been used to set design parameters

Photovoltaics

Two photovoltaic (PV) systems will be provided to help achieve compliance with regulated carbon dioxide emissions, as defined under Approved Document Part L2, whilst ensuring an Energy Performance Certificate (EPC) accreditation of A.

In addition, the systems will align with Welsh Governments Decarbonisation programme.

The installations will consist of monocrystalline panels and copper indium gallium diselenide thin film flexible modules. The overall systems will achieve an annual yield of 53,990kWHs.

The systems will be covered by a 12 months installation warranty and will afford a guaranteed performance of 90% after 10 years and 80% after 25 years. The life expectancy of the systems will be 30 years.

The PV panels and modules shall be of the roof-mounted type. The panels and modules will either be fixed to a dedicated framing solution that will follow the pitch of the developments main roof, or be bonding directly to the roofing panels.

The panels and modules will be placed in accordance with the restrictions of the development’s cleaning and plant replacement strategies.

System inverters / control panels will be provided to suit the overall size and configuration of the two PV systems. The inverters / control panels will be capable of enabling system interrogation with regard to both fault-finding and damage detection.

The AC outputs of the inverter / control panels will be linked to the development’s LV distribution network to utilise the generated power internally.

Fire-fighter switches to disable the systems, and prevent any supply generation from the PV installations across the LV distribution network, will be provided.

In addition, the systems will be interfaced to the fire alarm system via interface gateways to enable the isolation of photovoltaic panels and invertors automatically under emergency conditions. Manual override facilities will also be provided by the provision of integrated ‘key-operated’ switches within the main fire alarm panel.

The systems will be compliant with G99 connection requirements but will not be connected for export. In addition, the systems shall be capable of relaying generated power outputs to the Building Energy Management System (BEMS) along with general fault / alarm signalling. The output information from the PV systems will also be displayed on a monitor within the entrance area of the new development.

Low voltage distribution

A new LV distribution network will be provided across the development in full accordance with the requirements of BS 7671 and, in particular, WHTM-06-01.

LV Switchboard
A new LV switchboard will be provided to serve the new development. The new LV switchboard will be located within the building’s main LV switch room positioned within the roof top plant room.

The new LV switchboard will be connected to the new incoming WPD LV connection, via a cut-out and metering arrangement, with one of the main risers at ground level.

The LV switchboard will be manufactured in accordance with BS EN 60439-1 and will meet with ‘form 4 / type 6’ requirements, as defined in the EIEMA guide.

The LV switchboard will be of the floor mounted, front access type, with top entry glanding plates for all incoming and outgoing cabling.

All LV bus bars within the new LV switchboard will be of the copper fully rated phase and neutral type, capable of accepting the full fault current of the incoming WPD LV connection. The LV switchboard will be afforded with a minimum overall fault rating of 50kA.

The LV switchboard will be provided with a suitably rated 400V electronic surge protection device in accordance with the requirements of BS EN 62305:2011 and BS7671:2008(2015).

The LV switchboard will also be provided with 45kVA, staged, power factor correction capacitors to automatically maintain a minimum of 0.95 power factor lagging. Space will be allocated within the LV switchboard for the future installation of harmonic filters.

The LV switchboard will be afforded protection via a suitably rated ‘non-auto’ MCCB. All outgoing ways from the new LV switchboard will be afforded protection via dedicated, suitably rated, MCCBs. All MCCBs shall be of the adjustable thermal magnetic type unless otherwise required by the loading characteristics.

The new LV switch board will be provided with blanked off ‘spare-ways’ equating to not less than 25% of the total number of utilised out-going ways.

Metering will be afforded to the LV switchboard in accordance with Approved Document Part L2.

Sub-main distribution – LV cables

All distribution cabling will comply with the requirements of BS 7671. All sub-main cabling will be run via the main distribution routes terminating at isolators and distribution boards, etc.

All general sub-main cabling will be supported by steel (heavy-duty) cable trays. All cable trays will extend to within 150mm of the item of equipment being served.

All below ground external sub-main cabling will be enclosed within suitable ducts. All cabling trenches will be refilled using ‘grade 1’ back-fill.

All primary containment will be provided with 25% spare capacity.

All LV sub-main cabling will be of the copper-cored XLPE/SWA/LSF type. All LV sub-main cabling to life safety systems will be of the Prysmian FP600s enhanced type or equal and approved. All LV sub-main cabling will be obtained from a BASEC licensed supplier.

All sub-main cables will be provided with engraved tie on cable markers fully identifying the origin of the supply, the service fed and cable size.

Distribution boards and circuit protection

Standard and spilt (dual metered) RCBO / MCB distribution boards will be provided to serve the Wellbeing Centre. Distribution boards shall be located in positions that ensure full accessibility in terms of maintenance and operation.

All distribution boards will be of the front access type. Top, bottom and side entry glanding plates will be provided for all incoming and outgoing cabling.

All distribution boards will be provided with the appropriate number of outgoing ways to accommodate the required circuits plus an additional 25% spare capacity provided as blanked off ways.

Wellbeing Hub @ Maelfa

Metering will be afforded to distribution boards in accordance with Approved Document Part L2. Distribution boards will be fully labelled using engraved traffolyte (white on black) identification labels securely fixed to the front of the distribution boards. In addition, warning notices i.e. “Danger 400 Volts” or “Danger 230 Volts” will be provided.

Each distribution board will also be provided with a fully typed circuit chart provided to permit easy identification of circuits. Information will include circuit reference, description, circuit protective device rating and type, load current, cable size and type.

All cabling will be afforded with identification by the use of ferrule (non-sticky) markers.

Energy metering

Energy metering will be afforded across the development in accordance with Approved Document Part L2 and BREEAM 2018 requirements.

Sub metering will be installed to allow the thorough interrogation of the developments energy usages in accordance with CIBSE TM39.

The information produced, by the energy metering, will be exported to the Building Energy Management System (BEMS) to enable remote and automatic meter reading, data collection and targeted facilities management.

All meters and their associated installations will be to a fiscal (OFGEM) standard - suitable for billing, invoice and taxation purposes.

General power installation

General power will be provided throughout the Wellbeing Centre. The system shall meet the full requirements of BS 7671 and WHTM-06-01.

In general, general power outlets, isolators and switches will be provided to serve all equipment and / or systems to be installed. This equipment and / or systems will include (but not be limited to) the following:

- General power (internal and external)
- General, external and specialist lighting
- Emergency lighting
- Mechanical plant and associated systems
- Actuated louvres / windows
- Motor operated shutters / dampers
- Fire detection and alarm systems
- Security systems
- Call systems
- Facilities for the disabled
- ICT systems
- Surge protection systems
- Hoist installations (within the changing places room)
- Lift installation

The final positioning of all general power outlets, isolators and switches will be to suit the final furniture and general arrangements.

System of wiring (sub final circuits)

The following methods for the installation of all final circuitry will be utilised:

- Internal – Generally, system circuitry will consist of LSF Insulated singles contained within dedicated steel cable trunkings and galvanized steel conduits
- Internal / External – System circuitry will consist of Cu/XLPE/LSOH/SWA/LSOH cabling supported by galvanised steel (heavy duty) cable trays. Where single armoured cables are installed these will be fixed directly to the building fabric using appropriate sized cabling cleats

- External – System circuitry will consist of Cu/XLPE/LSOH/ SWA/LSOH cabling ducted in ground or buried directly. In either case, the cabling trench will be refilled using ‘grade 1’ back-fill
- Fire System Systems – System circuitry shall consist of Prysmian FP200 or FP600s enhanced cabling or equal and approved. The cabling will be supported by galvanised steel (heavy duty) cable trays. Where single armoured cables are installed these will be fixed directly to the building fabric using appropriate sized cabling cleats

All cabling will be obtained from a BASEC licensed supplier.

All final circuitry will be phased to avoid, as far as possible, the risk of crossed phases.

Dado trunking

Multi-compartment dado trunking will be installed across the development. The dado trunking will be fully co-ordinated with the final furniture and architectural arrangements.

All dado trunking will be of the two compartment plastic type; coloured white as per the MK ‘Prestige’ range.

The dado trunking installation will be fully compliant with CAT 7 data cabling standards; to help enable this all outlets will be located within the bottom compartment with all data cable located within the top.

All dado trunking within clinical rooms will be mounted above desk height. All dado trunking within administration areas will be mounted below desk height.



Wellbeing Hub @ Maelfa

ICT hub room power requirements

General power supplies will be provided within the new ICT hub room to suit the agreed requirements of the C&V UHB. These will be derived from a dedicated locally positioned distribution board.

Power supplies to communications cabinets will be via the provision of MK switched commando sockets and un-switched fused connection units. In summary, each communications cabinet will be served with 2No. 32A commando outlets and 1No. 13A un-switched fuse connection unit.

Each commando socket will be fed via its own dedicated circuit and be provided with a wall-mounted isolator.

Each un-switched fused connection unit will be provided with a flex outlet.

A dedicated clean earth will be provided within the new ICT hub room.

Specific power requirements

All power supplies to white goods and vending machines will be via the provision of a worktop or high level (dependant on location) 13A double pole switches and / or 13A switched fused connection units that will in turn serve low-level 13A, un-switched, socket outlets. The 13A double pole switches and / or 13A switched fused connection units will be fully engraved to indicate the equipment being served.

Cleaner’s sockets will be provided every 10 metres across the footprint of the development. The outlets will be wired as designated radial or ring circuits. The outlets will be clearly labelled.

Maintenance’s sockets will be provided within plant rooms. The outlets will be wired as designated radial circuits. The outlets will be clearly labelled.

Window shutters

High-level 13A switched fused connection units will be provided to serve the window shutter installation.

Window actuators

High-level 13A switched fused connection units will be provided to serve the window actuators.

Hand driers

High-level 13A switched fused connection units will be provided to serve hand-drying units.

Hand-drying units will also be provided these will be of the Dyson Air Blade type.

Mobile screening power supply

A dedicated power supply to serve a mobile BTW screening unit and mobile transfusion unit will be provided. This will be in the form of a dedicated 63A SPN GEWISS vertical interlocked socket outlet.

A GRP feeder pillar will be provided to house the outlet.

Vehicle charging points

Cabling ducts will be provided to enable the future provision of four 7kW electric vehicle-charging points ‘as and when’ required by the C&V UHB and Cardiff City Council.

Works associated with mechanical plant

All major plant and motor control centres (MCCs) will be supplied directly from the main LV switchboard. In addition, direct power supplies will be provided to all mechanical equipment not serviced by the MCC’s i.e. local ventilation / extract fans, AoVs, fire smoke dampers and electric heaters etc.

Works associated with the lift

The lift will be supplied directly from the main LV switchboard.
All switches and accessories will be fully labelled to identify their use and circuit reference.

Final Accessories

All final accessories within front of house areas will be of the white plastic type as per the MK Logic range or equal and approved.

All final accessories within plant and back of house areas shall be of the metal clad type as per the MK Metalclad range or equal and approved.

All final accessories within external areas will be of the plastic MK Masterseal range or equal and approved.

All equipment and accessories will be selected to provide suitable ingress protection (IP) to suit the environment in which they will be installed.

All switches and accessories will be provided in full accordance with the Disability Discrimination Act and Part M of the Building Regulations.

Labelling

All switches and accessories will be fully labelled to identify their use and circuit reference.

Earthing and bonding

New earthing and bonding systems will be provided across the Wellbeing Centre. The systems shall meet the full requirements of BS 7671, BS 7430 and, in particular, WHTM-06-01.

Earthing system

A reference earth will be provided from the WPD earth terminal. The reference earth will connect to a primary earth bar that will be located adjacent to main LV switchboard.

The primary earth bar will be utilised to allow the distribution of main equipotential bonding conductors throughout the building in line with BS 7671 and BS 7430.

In particular, main equipotential bonding will be applied to the following:

- Incoming gas service
- Incoming water service
- All main HWS / CWS pipework
- All ventilation ductwork
- All incoming ICT services (cream coloured cables shall be utilised)
- The ICT clean earth bar (cream coloured cables shall be utilised)
- The passenger lift guide rails
- The structural frame
- All primary containment systems
- The photovoltaic system
- The lightning protection system

All services entering the building will be bonded as close to their entry point as practically possible. All earthing conductors will be fully labelled at both ends of their length.

The earth bar will be provided with a test link to allow the isolation of the main incoming earth conductor/ section, from the outgoing distribution section. The earth bar will be fully labelled.

Clean earthing requirements

A separate clean earth distribution system will be provided to the new ICT hub room.

A clean earth cable will originate from the development’s primary earth bar and will be terminated at its final location within a dedicated 4-way earth bar. The earth bar will be clearly labelled ‘clean earth’. Each communications cabinets will be bonded to the clean earth bar.

All clean earthing conductors will be fully labelled at both ends of their length.

Wellbeing Hub @ Maelfa

Bonding System

A system of bonding will be provided in full accordance with the requirements of BS 7671 and BS 7430. Supplementary bonding will be provided to earth all exposed conductive parts of the electrical installation and all extraneous conductive parts so that in the event of a fault of negligible impedance, disconnection will take place in a manner, and in such time, as to ensure no danger arises.

Standby generation

The Wellbeing Centre will not be provided with any standby generator provisions.

Uninterruptable power supplies

All uninterruptible power supply (UPS) requirements within the Wellbeing Centre will be provided directly by the C&V UHB as part of any ICT fit-out works.

General lighting

New general lighting will be provided across the new Wellbeing Centre. The scheme will generally complement the architectural design philosophies whilst being appropriate to the tasks being undertaken.

Average illumination levels and colour rendering will generally be in accordance CIBSE / SLL: Lighting Guide 2 (LG2) and other relevant industry standards.

Where computer screens are used, the lighting installation will also comply with CIBSE / SLL Lighting Guide 7 (LG7).

In addition to the general luminaires, all consultancy and treatment rooms will be provided with examination lights with local battery back up to give 1-hour autonomy.

LED Requirements

All luminaires will incorporate energy efficient LEDs. The colour temperature of all LEDs will be 4000K with a colour rendering of not less than Ra 80.

System of wiring (sub final circuits)

The following methods for the installation of all final circuitry will be utilised:

- Internal – Generally, system circuitry will consist of LSF Insulated singles contained within dedicated steel cable trunkings and galvanized steel conduits
- Internal / External – System circuitry will consist of Cu/XLPE/LSOH/SWA/LSOH cabling supported by galvanised steel (heavy duty) cable trays. Where single armoured cables are installed these will be fixed directly to the building fabric using appropriate sized cabling cleats

All cabling will be obtained from a BASEC licensed supplier.

All final circuitry will be phased to avoid, as far as possible, the risk of crossed phases.

Lighting Controls and Switching

A DALI based system will be provided to serve the lighting installation as a whole. The control system and its components will provide a programming and operating facility to enable both the manual and / or automatic operation of the lighting installation to suit the operational needs of the C&V UHB.

All luminaires will be fitted with DALI ballasts / controllers and will be connected via a dedicated DALI control circuits.

The lighting control system will be fully programmable; all elements of the DALI systems will be addressable. The DALI lighting control system will be able to initiate the following modes of operation:

- Manual switching
- Manual dimming
- Microwave presence detection
- PIR presence detection / control
- PIR presence detection / control with daylight dimming
- PIR absence detection / control
- PIR absence detection / control with daylight dimming

The final wiring, selection and siting of the controls system will give due consideration to HTM 06-01-15.75 and 15.76 in term of on-going maintenance and operation during power failures. Where installed within clinical environments the controls system will also give due consideration to HTM 06-01-15.77.

The initial programming of the system agreed with the C&V UHB during commissioning as per HTM 06-01-15.74.

Final Accessories

All final accessories within front of house areas will be of the white plastic type as per the MK Logic range or equal and approved.

All final accessories within plant and back of house areas shall be of the metal clad type as per the MK Metalclad range or equal and approved.

All final accessories within external areas will be of the plastic MK Masterseal range or equal and approved.

All equipment and accessories will be selected to provide suitable ingress protection (IP) to suit the environment in which they will be installed.

All switches and accessories will be provided in full accordance with the Disability Discrimination Act and Part M of the Building Regulations.

Labelling

All switches and accessories will be fully labelled to identify their use and circuit reference.

External lighting

New external lighting will be provided across the new Wellbeing Centre. The scheme will generally complement the architectural design philosophies whilst being appropriate to the tasks being undertaken.

Average illumination levels and colour rendering will generally be in accordance CIBSE / SLL: External Lighting Guides and other relevant industry standards.

The design and installation will also be compliant with Table 2 (and its accompanying notes) of the Institute of Lighting Professionals (ILP) guidance notes for the reduction of obtrusive light.

LED Requirements and luminous efficacy

All external luminaires will incorporate energy efficient LEDs. The colour temperature of all LEDs will be 4000K with a colour rendering of not less than Ra 80.

All external luminaires will have an initial luminous efficacy of not less than 70 luminaire lumens per circuit watt.

System of wiring (sub final circuits)

The following methods for the installation of all final circuitry will be utilised:

- Internal – Generally, system circuitry will consist of LSF Insulated singles contained within dedicated steel cable trunkings and galvanized steel conduits
- Internal / External – System circuitry will consist of Cu/XLPE/LSOH/SWA/LSOH cabling supported by galvanised steel (heavy duty) cable trays. Where single armoured cables are installed these will be fixed directly to the building fabric using appropriate sized cabling cleats
- External – System circuitry will consist of Cu/XLPE/LSOH/ SWA/LSOH cabling ducted in ground or buried directly. In either case, the cabling trench will be refilled using 'grade 1' back-fill

All cabling will be obtained from a BASEC licensed supplier. All final circuitry will be phased to avoid, as far as possible, the risk of crossed phases.

Sources of supply

The external lighting systems across the development will be served from separate WPD connections. In summary, the sources of supply and their corresponding areas served will be as follows:

- Building perimeter and walkways - external lighting around the building perimeter and walkways will be served from the Wellbeing Centre’s man LV distribution network and associated external services LV distribution boards
- Car park (adjacent to the Wellbeing Centre) - external lighting across the car park adjacent to the Wellbeing Centre will be served by a dedicated WPD LV connection contained within a feeder pillar. The WPD LV connection will, via a cut-out and metering arrangement, serve a dedicated external services LV distribution board
- Car park (remote to the Wellbeing Centre) - external lighting across the car park remotely located to the Wellbeing Centre will be served by a dedicated WPD LV connection contained within a feeder pillar. The WPD LV connection will, via a cut-out and metering arrangement, serve a dedicated external services LV distribution board
- Public foot path (Cardiff City Council) - external lighting along the relocated public foot path will be served by a un-metered WPD LV connection in accordance with standard Cardiff City Council agreements

Feeder Pillars

GRP feeder pillars will be provided o serve the external lighting provisions. In summary, each feeder pillar will house the following:

- A WPD LV connection cut-out and metering arrangement
- A LV distribution board
- Lighting controls (time-clocks and override switches) and contractors

In addition, each feeder pillar will be provided with:

- A full height lockable door to enable ease of maintenance
- A frost protection heater

Switching and controls strategy

External lighting controls, across the various external lighting systems, will be provided as follows:

- Building perimeter and walkways - the external lighting will be controlled via time clock activated contractor and photocell arrangements to prevent operation during daylight hours. The time clock will be of the 7-day multi-channel / programmable type to allow multiple ‘on’ / ‘off’ settings. The time clock will facilitate automated British summertime and daylight saving adjustment. The control system will also be provided with dedicated override switch
- Car park (adjacent to the Wellbeing Centre) - the external lighting will be controlled via time clock activated contractor and photocell arrangements to prevent operation during daylight hours. The time clock will be of the 7-day multi-channel / programmable type to allow multiple ‘on’ / ‘off’ settings. The time clock will facilitate automated British summertime and daylight saving adjustment. The control system will also be provided with dedicated override switch
- Car park (remote to the Wellbeing Centre) - the external lighting will be controlled via time clock activated contractor and photocell arrangements to prevent operation during daylight hours. The time clock will be of the 7-day multi-channel / programmable type to allow multiple ‘on’ / ‘off’ settings. The time clock will facilitate automated British summertime and daylight saving adjustment. The control system will also be provided with dedicated override switch.

- Public foot path (Cardiff City Council) - the external lighting will be controlled via individually mounted photocell arrangements

Where time clock activated control is afforded the system will be configured to switch off the external lighting between 23:00 and 07:00.

Final Accessories

All final accessories within front of house areas will be of the white plastic type as per the MK Logic range or equal and approved.

All final accessories within plant and back of house areas shall be of the metal clad type as per the MK Metalclad range or equal and approved.

All final accessories within external areas will be of the plastic MK Masterseal range or equal and approved.

All equipment and accessories will be selected to provide suitable ingress protection (IP) to suit the environment in which they will be installed.

All switches and accessories will be provided in full accordance with the Disability Discrimination Act and Part M of the Building Regulations.

Labelling

All switches and accessories will be fully labelled to identify their use and circuit reference.

Emergency lighting

New emergency lighting will be provided across the new Wellbeing Centre. Emergency illumination levels will be as per table E.1 of BS 5266. Inclusive of the requirement to provide 50lux within treatment rooms.

The overall scheme will permit the safe movement and evacuation of the development at times of power outage. The system will generally be of the 3-hour non-maintained (NM3) type. This said, public areas of the building, if applicable, will be afforded with a 3-hour maintained (M3) type solution.

The scheme will be provided by the use of stand-alone LED bulkhead luminaires with integral 3-hour battery packs. In addition, general service luminaires with integral 3-hour battery packs will be provided to ensure full compliance with BS 5266. All battery packs will be provided in accordance with ICEL recommendations.

Emergency exit luminaires will also be provided in accordance with the fire strategy drawings and in line with BS 5266. The luminaires will be supplied with pictograms (running man) to suit both British and European Standards.

In addition to the general luminaires, all consultancy and treatment rooms will be provided with examination lights. These will be afforded with local battery back up to afford 1-hour autonomy.

The scheme will generally complement the architectural design philosophies.

All emergency luminaires will feature integral dual-colour status LEDs to indicate local healthy ‘charging’ and fault indication.

All emergency luminaires will be wired to the local lighting circuit to which emergency lighting is to be provided in the event of sub-circuit failure. All emergency lighting will be wired to permanent lives and not switched or contractor controlled lives.

Wellbeing Hub @ Maelfa

Lighting controls and switching

All emergency lighting provided across the development will be linked to an automated self-test and monitoring system via suitable interfaces / controllers and a cabling network. As a minimum the emergency lighting automated self-test and monitoring system will be provided with the following functionality:

- Automatic monitoring, testing and fault logging
- Lamp and battery status indication from each connected emergency luminaire
- Status reports of complete installation over a period of 3 years (minimum)
- Facilities to set dates of weekly function tests and annual system tests

The results of the self-test system will be reported to a main system control panel whilst being exported to the development's BEMS.

In order to prevent tests being carried out at inconvenient times all functional and annual system tests will be user programmable.

The overall self-test system will be provided with 25% spare capacity.

Labelling

All switches and accessories will be fully labelled to identify their use and circuit reference.

Television and radio signalling distribution

A new radio and television signalling system, capable of delivering the following signals to designated connection plates, will be provided across the Wellbeing Centre:

- FM radio
- DAB radio
- Freeview

In summary, the distribution system will generally consist of:

- A digital (freeview) aerial
- A FM antenna
- A DAB antenna
- Multi-channel system amplifiers / distribution switches
- Connection plates

The above list is for guidance only. All equipment required to complete the radio and television distribution system will be provided.

'On-site' field tests will be undertaken to determine the overall strength of the incoming signals. From the results obtained, the final locations of the associated roof-mounted equipment (aerial and antennas) will be agreed with the Architect.

The final connection plates will afford full connectivity. The plates will be of the white plastic type as per the MK Logic range or equal and approved.

All equipment and accessories will be selected to provide suitable ingress protection (IP) to suit the environment in which they shall be installed.

All final connection plates will be provided in full accordance with the Disability Discrimination Act and Part M of the Building Regulations.

Cabling

The system will be wired using suitably rated cabling.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Security detection and alarm systems

A new security detection and alarm system will be provided across the new Wellbeing Centre. The C&V UHB's preferred installer OpenView will carry out the works.

Integrated system

The security detection and alarm system will be integrated with the CCTV system to provide automated CCTV viewing and recording in response to specific security detection events. The security detection and alarm system will also be fully integrated with the access control system to provide both door ajar and door forced alarms.

Systems requirements

The system will be provided in full accordance with Grade 2 'Confirmed Activation' requirements as defined by SSAIB, PD6662, DD243 (EN50131) and NSI Codes of Practice. The system will also be fully compliant with the requirements of South Wales Police in order for it to obtain a Unique Reference Number (URN).

The system will be provided and installed to minimise the risk of equipment damage arising from acts of vandalism or any deliberate attempts to render the equipment inoperable.

The system will be of the addressable type and will generally consist of the following:

- Main control panel
- Keypad controllers
- 8-Channel security nodes
- Magnetic door contacts
- Anti-mask dual technology sequential detectors
- An external bell box with visual indication

All system equipment, devices and cabling will be provided with 24hr tamper protection.

System standby

The system will be provided with 24-hour integral battery backup as a whole.

System zoning

The final configuration of detection zones will be agreed with the C&V UHB prior to final commissioning. System zoning will enable the partial arming of the development if it is not being used in its entirety.

The operation of the intruder alarm system will be via the provision of dedicated keypads. The keypads will enable both the activation and de-activation of the security system on a zonal basis.

Autodial facility

The main control panel will be fitted with a dual communication auto-dial facility to enable the connection of the system to a remote monitoring station or preferred C&V UHB contact. Connections will be made via a monitored telephone line and separate GSM connection.

Future capacity

The system will be provided with 25% spare capacity to enable its future expansion. The main control panel will be provided with all additional power supply units, interface cards and other equipment required to allow the installation of the additional 25% capacity. The main control panel will require no other works other than re-programming.

Cabling

All devices will be star wired using suitably rated 6-pair security cabling; 1-pair being utilised for 24hr tamper protection.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Wellbeing Hub @ Maelfa

Access control

A new access control system will be provided across the new Wellbeing Centre. The C&V UHB’s preferred installer OpenView will carry out the works.

Integrated system

The access control system will be integrated with the CCTV system to provide automated CCTV viewing and recording in response to specific access control events. The access control system will also be fully integrated with the security detection and alarm system to provide both door ajar and door forced alarms.

Systems requirements

The systems will operate in a standard access control configuration, in that, doors afforded with access control will only be unlocked from the controlled side of passage following the activation of a dedicated proximity readers using smart card technology.

The uncontrolled side of the doors will in turn be controlled via manually operated ‘right to exit’ buttons. Fire alarm override facilities will also be provided as necessary.

The system will be provided and installed to minimise the risk of equipment damage arising from acts of vandalism or any deliberate attempts to render the equipment inoperable.

All system equipment is to be provided by TDSi or equal and approved.

Equipment and controls

All door access control equipment will be of the “on-line” type serviced via the provision of hard-wired technologies. The “on-line” system will enable the following:

- Time controlled functional control
- Door ajar and forced alarms
- Card blocking
- Operational audit trails

The above will be controlled by IP addressable system controllers. Each system controller will be capable of controlling up to four doors. The system controllers will be of the IP addressable type to allow ‘off-site’ communication and control using the C&V UHB’s existing management equipment, software and card programmers.

Each system controller will be connected to the ‘off-site’ control systems via the C&V UHB’s LAN / WAN. As such, each system controller will be wired back to the new ICT hub room communications cabinets within the new ICT hub room.

The system controllers will be connected back to the above by the provision of dedicated CAT7 cabling and RJ45 outlets. Each system control will also be provided with a power supply afforded by a 13A switched fused connection unit and a fire alarm interface.

Wired “on-line” control

Each door being afforded with a wired access control provision will generally be provided with the following equipment that will be interconnected through hard-wired data receivers:

- Proximity card reader(s)
- 24V (500Kg) DC mag-locks / mechanisms
- Interfaces to automated doors
- Right to exit button(s)
- Emergency green break glass(es) complete with protective flaps and screech alarms

The 24V DC mag-locks / mechanisms will be supplied and installed by the Specialist Installer. Where double doors are to be afforded control 24V DC mag-locks / mechanisms will be provided on both door leafs.

Where interfaced with automated doors full connectively and operational control will be provided.

A ‘right to exit’ plate will be located on the unsecured side of each door afforded with control (unless two-way control is being afforded where two will be installed). The ‘right to exit’ plates will be of the green mushroom type, mounted on flush stainless steel plates. The units will be touch operated.

Each door afforded with access control will be provided with an emergency green break glass to either un-lock or override the doors ‘open’. Each emergency green break glass unit will be flush mounted and located adjacent to the door being afforded control. The emergency break glass units will be provided with protective covers and screech alarms to discourage miss-use. The emergency break glass units will be connected through an additional status output on the door controllers to signal “unauthorised usage” back to the management software.

Each door afforded with wired control will be afforded with a dedicated fire alarm interface to override the mag-lock(s) / mechanism(s) in the event of a fire alarm. All final perimeter doors will be provided with additional locks / mechanisms to ensure the doors fail secure when the building is unoccupied.

The associated system controllers will be mounted within the LV switch room. The controllers will be housed within a suitable labelled mild steel surface mounted enclosure.

Each door afforded with wired control will be provided with back-up battery facilities to provide operation for 24-hours continuously in the event of mains failure. Following this the system will ‘fail-safe’. The batteries will be contained within the system controllers.

Access cards

The system will be operated via intelligent SMART cards. The cards will be capable of being programmed to give varying access rights to different levels of user.

A number of cards will be provided for commissioning purposes.

Initial programming

The system will be fully programmable to enable integrated management. In addition, the system will be capable of utilising time scheduling to automatically ‘un-lock / lock’ identified doors.

The final programming of the system will be agreed with the C&V UHB prior to final commissioning.

Video and voice call

In addition to the access control provisions video intercom systems will be provided. In summary, the systems will facilitate the following:

- A vandal resistant, external, video intercom unit that will be adjacently positioned to the main entrance. The video intercom will be connected to the following points of call by the provision of separate call buttons:
- Wellbeing reception area
- Clerk room reception area
- Powerhouse Hyb reception area
- Each point of call will be provided with an intercom handset. The intercom hand set will be capable of voice and visual verification. The intercom handsets will be able to override the access control system associated with the main entrance door

Expansion

The overall system will be based on a modular design to allow its future expansion.

Cabling

The system will be wired using suitably rated cabling.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

CCTV

A new CCTV system will be provided across the new Wellbeing Centre. The C&V UHB’s preferred installer OpenView will carry out the works.

Integrated system

The CCTV system will be integrated with the security detection and alarm and access control systems to provide automated CCTV viewing and recording in response to specific security detection events.

Systems requirements

CCTV cameras will be provided to cover, and provide evidential quality images, to the following areas: Internally:

- The main entrance lobby
- The main waiting areas (ground and first floor)
- Selected circulation routes

Externally:

- The buildings perimeter

The system will be provided and installed to minimise the risk of equipment damage arising from acts of vandalism or any deliberate attempts to render the equipment inoperable.

All system equipment is to be provided by Avigilon or equal and approved.

Equipment and controls

The recording / operation / interrogation and viewing of the CCTV cameras will be done ‘off-site’ at the C&V UHB’s security centre located at Llandough. To facilitate this a new Avigilon HD NVR4 Premium network video recorder will be provided. The new unit will be fully interfaced with the Llandough site’s existing control, recording and monitoring equipment.

The new network video recorder will be capable of storing 24-hour coverage from each camera installed for a period of 30-days at a minimum rate of 6-frames per second at SVGA resolution. This rate will automatically increase to a real time recording speed of 25-frames per second following:

- The activation of movement detection software

IP addressable CCTV cameras will then be connected through the C&V UHB’s LAN/WAN to the new network video recorder. As such, all data connections to the new CCTV cameras will be wired back to the new ICT communications cabinets within the new ICT hub room.

Monitoring equipment

No monitoring provisions are to be provided ‘on-site’. This said, the system will enable the future provision of monitoring at the main reception desks. To facilitate this power and data provisions will be provided.

Cameras

All cameras will be suitable for commercial / industrial 24-7- 365 use. The cameras will also be based upon standard components and proven technologies using open and published protocols.

All Internal cameras will be of the fixed Avigilon HA HD indoor ‘dome’ type capable of self-learning video analytics. Internal cameras will be powered from IEEE 802.3af Power-over-Ethernet (PoE) connections.

All external cameras will be of the fixed Avigilon HA ‘bullet’ type with in-built infrared (IR) technology capable of self-learning video analytics. Dependant on location external cameras will either be powered from IEEE 802.3af Power-over-Ethernet (PoE) connections or 13A un-switched fused connection units.

Camera housings

All internal cameras will be contained within discreet, vandal resistant, ceiling mounted domes with smoked glass covers.

All external fixed viewing cameras will be contained within discreet tamper resistant, IP66, external housing.

Camera columns and brackets

All external cameras will either be fixed directly to the building fabric or be mounted on suitable columns. All associated brackets and columns will be manufactured from hot dip galvanised steel to ISO 1461. All brackets and columns will be spray painted in a RAL standard colour as defined by the Architect.

All camera columns will be provided in compliance with the following requirements:

- All camera columns will be designed to take into account the maximum supported load and the height at which equipment is required to operate
- All camera columns and associated brackets will be installed in accordance with the manufacturer instructions and BS 8004
- All camera columns will be installed such that access and maintenance is not restricted
- All camera columns will be rigid enough to minimise deflection to 0.1% of the camera during high winds
- All camera columns will include an integral, lockable, base cabinet to house power supplies, mains isolation and ancillary equipment
- All camera columns will be fitted with anti-climb protection measures

All brackets will be provided in compliance with the following requirements:

- All camera brackets will be selected to take into account the maximum supported load and the height at which equipment is required to operate
- All camera brackets will be selected to suit the surface upon which they will be installed
- All camera brackets will be installed in accordance with the manufacturer’s instructions and BS 8004
- All camera brackets will be installed such that access and maintenance is not restricted
- All camera brackets will be rigid enough to minimise deflection to 0.1% of the camera during high winds

CCTV Signage

CCTV signage will be provided in line with the CCTV Code of Practice within the Data Protection Act.

Expansion

The overall system will be based on a modular design to allow its future expansion.

MUGA CCTV (Cardiff City Council)

In additional to the base build CCTV systems a standalone, column mounted, CCTV camera will be provided to cover the relocated MUGA. This will be served by an un-metered WPD LV connection and GSM connection in accordance with standard Cardiff City Council agreements.

The final specification of the camera will be agreed with Cardiff City Council prior in installation.

The new camera will be monitored at Cardiff City Council’s preferred monitoring station.

Cabling

All CCTV cameras and equipment will be wired using CAT7 or 50 / 125 OM4 multimode fibre optic cabling (via media convertors to convert the fibre optic cabling to RJ45 connections at either end). The 50 / 125 OM4 multimode fibre optic cabling will be used to serve all equipment and cameras positioned over 90 meters from the new ICT hub rooms.

The CAT7 and 50 / 125 OM4 multimode fibre optic cabling will be terminated within the 19” communications cabinets via the incorporation of RJ45 patch panels. The cables will be terminated at their final locations via the incorporation of RJ45 terminations to suit final applications.

All internal cabling shall be contained within dedicated steel cabling baskets and galvanized steel conduits.

Corresponding external grade cabling will be used as necessary to serve all external CCTV camera provisions. The cabling will be installed in cabling ducts and draw pits. The cabling trench shall be refilled using ‘grade 1’ back-fill.

All specialist control and patching cables will be provided as necessary to complete the installation.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Nurse call system

A new nurse call system will be provided across the new Wellbeing Centre.

Systems requirements

A new nurse call system capable of delivering the following call requirements and alarms will be provided across the development:

- Emergency staff-to-staff call
- Patient / staff-to-staff call
- Controlled drugs cupboard alarm(s)

The new nurse call system will be of the Wandsworth Ltd iPIN (addressable) type. The new system will be controlled by a new iPIN control panel that will be located within the main LV switch room.

The new iPIN control panel will be sized to cater for the equipment and system of operations required with an allowance of 25% spare for future expansion.

The (addressable) iPIN nurse call system will be provided to:

- Enable clinical staff to summon further clinical assistance to a medical incident
- Enable a patient to summon clinical staff assistance
- Enable staff to be alerted of forced entry into any controlled drugs cupboards

This will be done by the provision of:

- Nurse call panels
- Nurse call panels (repeat)
- Call points
- Tone generators
- Follow me lights
- Reset buttons

Emergency staff-to-staff calls

When staff initiate a call the system will operate as follows:

- Room description will be displayed on the main and repeat nurse call panels with an audible alarm to alert members of staff. The audible alarm will be pre-set to a tone different to any other call system. The systems will allow staff to reduce the volume of alarms in sensitive areas as required
- All ‘follow me’ lamps (coloured amber) will illuminate to provide visual guidance to the actual point of call. All ‘follow me’ indicator lamps will stay illuminated in a steady state until the reset button is cancelled by a member of staff
- All emergency staff-to-staff reset points will be located within the room from where the call was activated
- Emergency staff-to-staff calls will override any other calls. These will be store and reinstated automatically once the emergency staff-to-staff calls have been cancelled.
- The existence of a call in one area will not prevent any other call from being made and signalling at main and repeat nurse call panels. Resetting of a call will not affect other calls yet to be attended

Patient / staff-to-staff calls

When patients / staff initiate a call the system will operate as follows:

- A reassurance lamp either combined or within close proximity to the call activator will illuminate within sight of the patient to confirm the call has been registered
- Room description will be displayed on the main and repeat nurse call panels with an audible alarm to alert members of staff. The audible alarm will be pre-set to a tone different to any other call system. The systems will allow staff to reduce the volume of alarms in sensitive areas as required
- All ‘follow me’ lamps (coloured amber) will illuminate to provide visual guidance to the actual point of call. All ‘follow me’ indicator lamps will stay illuminated in a steady state until the reset button is cancelled by a member of staff
- All patient / staff-to-staff reset points will be located within the room from where the call was activated
- The existence of a call in one area will not prevent any other call from being made and signalling at main and repeat nurse call panels. Resetting of a call will not affect other calls yet to be attended

Controlled drugs cupboard alarm

Controlled drugs cupboard alarms will form an integral part of the nurse call system. Controlled drugs cupboard alarm interfaces will be unitised to connect the controlled drugs cupboards to the system.

On the opening of a controlled drugs cupboard alarm indicator lamps (coloured red) shall be activated, however, these will be supplemented with an audible alarm to identify to staff that the controlled drugs cupboard has been forced opened.

Alerts will also be displayed on the main and repeat nurse call panels with an audible alarm to alert members of staff of forced entry.

The audible alarms will be pre-set to a tone different to any other call system.

System zoning

The system will be fully programmable into various zones to enable different calls, and their associated actions, to be directed to different parts of the development.

The final programming of the system will be agreed with the C&V UHB prior to final commissioning.

Cabling

The system will be wired using suitably rated cabling.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Patient call system

All patient call system requirements within the Wellbeing Centre will be provided directly by the C&V UHB as part of any fit-out works. To facilitate this power and data provisions will be provided.

Facilities for the disabled

Facilities for the disabled will be provided across the new Wellbeing Centre.

Reception counters - Audio frequency induction loop systems (AFILSs)

Fixed AFILSs will be provided on the main reception desks. Each system will generally consist of a fixed hearing aid induction loop and desk / table / countertop mounted microphone with integral volume control. Each induction loop will be contained within a suitable housing fixed to the underside of the desk / table / countertop.

The system will be wired using suitably rated cabling. All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits. All equipment will have an IP rating to suit the environment in which it is installed. All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Group rooms and seminar – AFILSs

Fixed AFILSs will be provided within the 2Nr. group rooms and the seminar room. The AFILSs will generally comprise of induction loops routed around the perimeter of the rooms; the induction cables will be run within the ceiling, wall or floor finishes.

Each group and seminar room will be provided with ceiling mounted microphones to give total coverage and radio microphones to enable a sole speaker to move freely around the designated spaces.

The AFILSs will be capable of being fully interfaced with all local audio-visual equipment and amplifiers. The AFILSs will also be provided with a SCART and HDMI connection to allow additional equipment inputs.

Wellbeing Hub @ Maelfa

As the 2No. seminar rooms will be capable of being opened up into a single space by use of a folding partition; the AFILS systems serving these rooms will be capable of working as both individual and combined systems.

The system will be wired using suitably rated cabling.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

All equipment will have an IP rating to suit the environment in which it is installed.

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Portable - AFILSs

2no. portable (self-contained) AFILSs will be provided for general use across the development. The portable units will generally consist of:

- A wireless induction loop incorporating a rechargeable battery, integral microphone and microphone inputs
- Two plug-in boundary microphones
- A carrying case
- A charging unit

All equipment will have an IP rating to suit the environment in which it is installed.

Assistance alarm / call system

The assistance alarm / call systems will form part of the nurse call system.

Emergency refuge / call system

A new emergency refuge / call system will be provided across the new Wellbeing Centre.

The emergency refuge / call system will generally consist of call points linked back to a central control panel. The system will be installed to enable two-way speech communication between the points of call and the central panel.

The system will be provided so that multiple channels of communication can be held i.e. the central panel will be capable of communication with any point of call at any given time.

The central control panel will consist of a stainless steel enclosure with integral microphone, speaker and control buttons. All wording contained on the panel will be fully engraved in English and Welsh.

Each point of call will consist of a stainless steel enclosure with integral microphone, speaker and call button.

A fully engraved stainless steel plate will be located adjacent to each point of call. The plates will describe the operational procedures of the system in 'layman' terms. The final wording on the plates will be presented in both English and Welsh.

The overall system will be provided with 24hr integral battery backup.

The system will be fully interfaced with the development's fire alarm system so that it only becomes operational in an emergency to prevent general misuse.

All cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

All equipment will have an IP rating to suit the environment in which it is installed.

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Lightning protection

A lightning protection system in accordance with BS EN 62305 will be afforded across the new Wellbeing Centre. The installation will meet with the defined 'Level of Protection' as ascertained through the completion of a risk assessment. This said, it is currently anticipated that a 'Class 2' systems will be provided.

The lightning protection system will generally comprise of the following:

- An air termination network generally consisting of the metallic roofing system and flat PVC covered copper tapes. All plant and all extraneous metalwork will be connected to the network
- Down conductors generally consisting of the steel and flat PVC covered copper tapes
- Earthing provided by the provision of standard pits and rods to reflect actual ground conditions

Note: If the building fabric's conductive materials are deemed unsuitable then flat PVC covered tapes will be utilised to ensure full continuity across network as a whole.

Where PVC covered tapes are utilised the final routes of the tapes will be agreed with the Architect. It should be noted that no external tapes will be visible or be able to be interfered with. All PVC covered tapes will be fixed so that they are free to expand and contract without damage or distortion.

The lightning protection network will include:

- Bonding to the lift guide rails (at both the top and bottom of the lift shaft)
- Bonding to all extraneous metalwork located on the roof of the building. This shall include but not be limited to all mechanical plant, grilles, louvres, guttering, balustrades, photovoltaic framing and solar shading
- Bonding to the building's main earth terminal

Fully PVC insulated coper connection cables will be routed underground to link any down conductors to individual inspection pits/reference electrodes. The inspection pits/reference electrodes containing will contain suitable earth rods and test clamps. The connection cables will be provided with isolation points within the test chambers to enable their disconnection for testing purposes.

All reasonable precautions will be undertaken to ensure that corrosion of any part of the system does not occur. Where the lightning conductors are in contact with dissimilar metals, or where they are held by a fixing device or bonded metalwork, or where corrosion can occur due to atmosphere or building structure, ensure the system is suitably protected.

Soil resistivity tests will be undertaken to determine and provide the most appropriate form of electrode. Chemical treatments will be provided as necessary to ensure the system fully complies with BS EN 62305.

An accredited member of the Association of Technical Lightning and Access Specialists (ATLAS) will install and certify the final system.

Surge protection

Surge protection devices will be provided to the new Wellbeing Centre to afford cover to all incoming and outgoing power / lighting / communications cabling.

In addition, the following equipment will be provided with type matched integral surge protection devices:

- Main LV switchboard
- CCTV cameras not within the protective sphere of the lightning protection system
- Lighting columns not within the protective sphere of the lightning protection system

Structured cabling

A structured cabling system for the distribution of voice, data, video and other services will be provided across the new Wellbeing Centre.

The new system will be covered by a TE Connectivity warranty, as such, the installation will be undertaken by a Specialist Installer who holds TE Connectivity ‘Premier Authorised Integrator’ accreditation.

It should be noted that the entire structured cabling system, other than the communication cabinets and cabling, will be sourced from a single manufacturer - TE Connectivity.

The new system will generally follow C&V UHBs requirement, as defined within the following documentation:

- Cardiff and Vale University Health Board - Cabling Design Infrastructure Specification (Version 11)
- Cardiff and Vale University Health Board – Containment Design Best Practice (Version 2)

Overview and base criteria

In general, the works will include the following:

- Provision of a structured cabling system for the distribution of:
 - Voice
 - Data
 - Video, and
 - Other services
- Provision of structured cabling, frames, racks and communication cabinets
- Cable, outlet and patch panel labelling
- Provision of a TE Connectivity warranty
- Full acceptance testing of the network
- Provision of full handover documentation

The system will be provided in accordance with the following standards and codes of practice along with all standards and codes referenced within:

- EN50173-1:2011
- EN50173-2:2007 + A1:2010
- EN50174-1:2009 + A1:2011
- EN50174-2:2009 + A1:2011
- EN50174-3:2013
- BS 7671
- BS 6701:2010
- BICSI Telecommunications Distribution Methods Manual 13th Edition
- FIA Code of Practice for the Installation of Fibre Cables

All active equipment, patch leads and software is to be provided and installed by the C&V UHB.

ICT hub room – communication cabinets

The first floor ICT hub room will be provided with 3No. communications cabinets to house the structured cabling points of distribution and all associated active equipment. The communication cabinets will be manufactured by Cannon or Excel.

The communications cabinets provided will be of the 47U (1000mm (d) x 800mm (w)) floor mounted type. The cabinets will be raised by a height of 100mm by means of an integrated plinth or adjustable feet.

The cabinets will be of painted steel construction type with hinged mesh doors on the front and back elevations. The back doors of the cabinets will be of the split type. The remaining sides of the cabinets will be provided with removable sides. All doors and removable panels will be lockable; a minimum of 4No. sets of keys will be provided to the C&V UHB at practical completion.

The cabinet will be provided with 19” mounting frames / racks. Cabling access will be permitted from top, side and bottom entry points. A minimum of 5No. cable management units to be installed in each communications cabinet.

The communication cabinets will be provided complete with an internal low noise fan with dust filters.

Each communication cabinet will also be provided with a 19” power distribution unit (PDU) containing 6No. Type G 13A socket outlets. The PDUs will be un-switched and be equipped with a power on indicator lamp. The PDUs will afford individual circuit protection to each socket outlet. The PDUs will be provided with a commando plug for connection to the general power installation.

The cabinet will also be provided with a clean earth connection.

It is currently envisaged that the cabinets will be used to locate the developments telephony, data, and security equipment. It should be noted that some but not all of the equipment is to be provided under this contract. The final layouts of the communications cabinets will be agreed with the C&V UHB.

Vertical / horizontal cabling

From the aforementioned communication cabinets structured cabling will be provided to serve the development. The structured cabling will be wired in a star configuration. The system will be wired using 4-pair CAT 7 23 AWG F/FTP LSOH cabling as manufactured by Tyco Electronics.

The structured cabling network will be configured across the development to ensure the maximum length of run from any communications cabinet is less than 90 meters to the final point of termination. Each CAT 7 cable will be continuous throughout its route length with no cable splicing or other type of connection.

The CAT 7 cables will originate from the communications cabinet via the installation of 1U 19” un-shuttered 24-port RJ45 patch panels.

All CAT 7 cables will be terminated at their final location via the incorporation of RJ45 terminations complete with spring-loaded shutters. All final outlet plates will match (in specification and finish) the other accessories installed within the surrounding area. The outlets units will be of the fully moulded non-modular variety.

All conductors within the CAT 7 cables will be terminated at either end.

All new CAT 7 cables will either be tied to cable basket in groups of no more than 12nr or where cables drop vertically concealed within galvanised steel conduit drops to provide a flush installation. It should be noted that flexible (metal enforced) conduits (Kopex) will be used in lieu of ‘Right Angle’ or ‘T’ boxes.

Where cables are laid within data basket they will be tied at a maximum spacing of 600mm horizontally, and 300mm vertically, along their entire length, using fire resistant (metal enforced) Velcro bands, to prevent sag as directed by BS 6701: 1994 section.

The new CAT 7 cables will not be bent to a radius less than that specified by the cable manufacturer, either during installation or as installed, nor will any part of the overall installation provided be such as to mean that any cable would in the future need to contravene these bending principles.

Strain relief for all cables will be provided at their termination to patch panels, or outlets, to avoid stress on individual conductors.

All cables will be terminated with a minimum of 200mm slack at each end to allow for re-termination; the slack is to be supported in the termination frames and racks.

Wi-Fi

Dedicated Wi-Fi connection points will be provided across the Wellbeing Centre for future use by the C&V UHB.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Public health services overview

The Stage 4(a) public heath design has followed the:

- Requirements of WHBN 36
- Where not stated in WHBN 36 then WHTM 04-01 has been used
- Where neither document has stated requirements then the ADB sheets have been used to set design parameters

Domestic water services

A new water connection will be provided to the Wellbeing Centre from the existing Welsh Water (WW) infrastructure on Round Wood. The new metered supply will enter the building in one of the main risers, having already branched a sub-metered supply to the café kitchen. From where it will rise to the rooftop plant room. Once in the plant room the mains water supply will serve a small split break tank and packaged booster set.
Note: C&V UHB having confirmed their agreement to a derogation to omit the need for on-site water storage.

The packaged booster set will be formed of three pumps:

- Duty
- Assist
- Standby

The packaged booster set will be provided complete with integral controls that will be monitored by the BEMS. The anticipated design flow rate being 1.5l/sec at a system pressure of 3.0bar. From here boosted cold water will distribute to the various zones across the Wellbeing Centre.

The main cold water supply and boosted water distribution routes will be installed away from heating and domestic hot water flow and return pipework to minimise heat gains. Temperature sentinels will be provided on each major distribution branch and be BEMS enabled to enable remote monitoring.

Hot water requirements will be produced centrally and be distributed via a flow and return system. Hot water will be generated via two indirect hot water storage cylinders, each cylinder will be selected to match the building load and will be operated simultaneously. All hot water pipework will be insulated to a minimum 38mm and 0.025 W/m2K. Hot water outlets shall be blended and limited not to exceed the recommended temperatures set out in HTM 04-01. In the cleaner’s stores outlet temperatures of up to 60oC will be provided, these high temperature outlets will be suitably labelled.

External water

No external connections, taps or irrigation systems are to be provided. This is inclusive of the mobile screening vehicles as per C&V UHB confirmation that water connection points are not required.

Rainwater or greywater harvesting

No rainwater or greywater harvesting systems are to be provided.

Demineralised water

Any requirement for demineralised water within the near patient testing lab, or any other location, will be provided by bottles by the C&V UHB as part of the fit-out works.

Leak detection system

A leak detection system will be provided in accordance with BREEAM 2018 requirements.

Flow control devices

A presence detector and controller (an automatic device detecting occupancy or movement in an area to switch water on and turn it off when the presence is removed) will be installed to regulate the supply of cold water to each WC area / facility according to demand. This will ensure that water is supplied only when needed.

Energy / consumption metering

Energy metering will be afforded across the development in accordance with Approved Document Part L2 and BREEAM 2018 requirements.

Sub metering will be installed to allow the thorough interrogation of the developments energy usages in accordance with CIBSE TM39.

The information produced, by the energy metering, will be exported to the Building Energy Management System (BEMS) to enable remote and automatic meter reading, data collection and targeted facilities management.

All meters and their associated installations will be to a fiscal (OFGEM) standard - suitable for billing, invoice and taxation purposes.

Foul water drainage (above ground only)

Above ground drainage will be provided via a fully ventilated soil and waste system. The system will serve all items of sanitary equipment.

Stacks will be arranged to connect into vertical risers dropping through the building to the under croft, from where the horizontal discharge will cross to the north façade.

From here a backflow manhole arrangement will be provided within the rain gardens along the north elevation. From which a gravity outfall to the local sewer or underground drainage system will be made. Access caps will be provided to the 150mm discharge pipe within the rain gardens for future access and maintenance. All pipework within the under croft and rain gardens is to be in cast iron.

The above ground foul drainage will meet the performance objectives stated in HTM guidance and BS EN 12056 and will be provided using the minimum pipework and fittings necessary to carry away all foul discharges from the building to the below ground drainage system, quickly, quietly and with freedom from nuisance or risk of injury to health.

Falls on soil waste and vent pipes will not fall below the minimum stated in BS EN 12056-2.

Adequate drainage facilities for the mechanical services equipment and plant will be provided by the provision of floor gullies.

The installation will also comply with the requirements of the acoustic report with pipework insulated and boxed out to suit.

Note: It is not proposed to provide any macerators, or specialist pipework, within the new Wellbeing Centre.

Fire protection services overview

The Stage 4(a) fire protection services design has followed the requirement of the Approved Documents on the based that HTM-05-03 has been derogated.

Fire hydrants

An existing fire hydrant, located adjacent to the reconditioned GP car park, south of the new building has been identified and will be tested to ensure it can provide cover to the new Wellbeing Centre.

Fire detection and alarms installation

A new fire detection and alarm system will be provided across the Wellbeing Centre in compliance with the following:

- Approved Document Part M
- British Standards including BS 7671 and BS 5839
- The requirements of the Local Building Control Officer (BCO)

The fire detection and alarm system will be provided in accordance with L1 standards as defined within BS 5839.

The installation will take the form of a full analogue addressable monitored system; mains powered with battery backup complete with evacuation facilities enabled by sounders and xenon beacons. The system shall generally consist of the following:

- Main fire alarm panel
- Automatic smoke and/or heat detection
- Duct detectors
- Manual call points
- Electronic sounders (with and without integral xenon beacons)
- Xenon beacons
- System interfaces
- Door detentes
- Remote indicators
- Door hold open devices
- Zone isolators

The system will be split into a number of zones for management purposes and indicating presence of fire. The programming of fire alarm zones will reflect the development’s fire compartment strategy.

All fire alarm system equipment provided will be of the loop-powered type. All equipment will be “flush / semi-flush” mounted. All equipment will have an IP rating to suit the environment in which it is installed.

System protocol

The fire alarm system will be provided with all relevant software to enable the reconfiguration, repair and maintenance by other fire alarm manufacturers / service companies. The system installed will not be supplied with manufacturer-restricted access codes.

Note: The system will be maintainable after practical completion by third parties other than the equipment supplier and actual installer.

Main and repeat fire alarm panels

The main and repeat fire panels will be of the fully functional type and shall comprise of an LCD display and full ‘system controller’ capable of providing an event log with a minimum memory of 150 separate operations.

The main and repeat fire panels will be provided with spare loops to enable the future expansion of the system by 25%. The panels will require no other works or equipment other than re-programming in order to utilise this spare capacity.

As a minimum, the panels will be provided with specific controls to enable the direct operation of the following operational requirements via the use of fully engraved / tactile buttons:

- Test alarms
- Silence alarms
- Evacuate
- Reset
- Isolate

Access to the main and repeat fire alarm panel’s controls will be restricted via a lockable glass fronted covers. The type of keys / locks to be installed will be agreed with the Client and BCO.

A zoned system diagram will be provided adjacent to each panel. The diagrams will be mounted in fire retardant, framed, display units.

Standby facility

The fire alarm system will be provided with power supply backup via the provision of dedicated batteries. The batteries will be capably of maintaining the standby load for a minimum of 24hrs, and the alarm load for 30mins.

Specific requirements

All high-level detectors and equipment will be positioned in locations that enable their safe and practical maintenance.

Void detection will be provided across the development in accordance with BS 5839 unless omitted through the completion of a risk assessment.

Electronic sounders and beacons

Alarm notification will be provided across the Wellbeing Centre. The provision will be made via the installation of electronic sounders and visual alarm devices i.e. flashing xenon beacons. The sounders and beacons will either be standalone, paired or incorporated within an automatic detection device.

The electronic sounders and xenon beacons will be fully addressable to enable each device to be programmed at the main fire alarm panel. The programming will enable the sounders and beacons to be zoned in accordance with any changing operational requirements of the building.

Decibel levels

The system will be provided with adequate sounder coverage as to archive a minimum level of 65dB(A) across the extents of development. In all instances the system will ensure a minimum of 5dB(A) above all ambient or plant related noise. Decibel levels will be in accordance with BS 5839.

Interface Units

Specific fire alarm interfaces will be provided to the following systems / equipment to enable operation or shut down equipment as required under the main fire strategy:

- BEMS
- Mechanical control centres
- Ventilation control systems
- Gas shut off valves
- Smoke and fire vents
- Fire shutters
- Access control systems
- Door detentes
- Passenger lift
- Fire damper controls
- AoVS

The final requirements for system interfaces will be determined upon the completion of the overall “cause and effect” schedule.

Wellbeing Hub @ Maelfa

Each fire alarm interface unit will be housed within a suitable mild steel surface mounted enclosure. Each unit will be fully labelled "FIRE ALARM INTERFACE UNIT" using engraved labels, suitably screw fixed to the enclosure. The labels will clearly indicate the equipment / system being controlled. All signals provided to and from the interface, units will be via volt free contacts.

Each interface unit will be individually identified on the system with, unique input address, and text message. Each input will allow differing "cause and effects" to be programmed from any other input on the system.

Door hold open devices

All door hold open devices will be fully programmable from the main fire alarm control panel so that they can be operated via a time schedule in conjunction with the access control provisions.

The operational requirements of the door hold open devices will be programmed to reflect the needs of the C&V UHB.

Photovoltaic fire safety switch / gateway

The photovoltaic systems will be afforded with interfaces and fire-fighter switches / gateways to enable the isolation of photovoltaic panels and invertors under emergency conditions.

Manual control will also be afforded by the provision of isolation switches and integrated 'key-operated' switches within the main fire alarm panel.

These facilities will enable both manual and automatic deactivation.

Investigation time delays

A detailed "cause and effect" schedule depicting the system operation under fire conditions will be produced, in accordance with, the development's fire strategy.

The system will be capable of allowing a staged "accept and investigate" facility for alarm detection. This facility will have option overrides for manual call point operation, input module operation, and coincidence operation.

It is currently anticipated, however, that the following strategy will be adopted as the base programming requirements:

- The activation of any device will trigger full evacuation procedures

Interface with Powerhouse Hyb

The new Wellbeing Centre main control panel will be interfaced with the existing fire alarm system serving the Powerhouse Hyb. The communications link will enable alerts to be sent across the two systems, via the corresponding panels, flowing an incident within either building.

Autodial facility

The main control panel will be fitted with a dual communication auto-dial facility to enable the connection of the system to a remote monitoring station or preferred C&V UHB contact. Connection will be made via a monitored telephone line and separate GSM connection.

Cabling

The system will be wired using Prysmian FP Plus and FP600s enhanced fire rated cabling. All internal / external cabling will be contained within dedicated steel cabling baskets and galvanized steel conduits.

Labelling

All system equipment, devices and cabling will be fully labelled to identify their use and circuit reference.

Sprinklers

The Wellbeing Centre will not be provided with sprinkler provisions.

Commissioning and handover

The full commissioning of the systems will be undertaken prior to the handover of the building. In addition, seasonal commissioning will be undertaken during the 12 months defects liability period.

All commission will follow the requirements of the BSRIA commissioning codes.

The construction programme will allow for sufficient time to enable commissioning and handover; this will be aligned to Soft Landings principles and BREEAM 2018 requirements.

Note: It is anticipated that all maintenance during the defects liability period will be undertaken by the C&V UHB.

5.4

Fire Engineering

5.4 Fire Strategy Executive Summary

Building Description

The Maelfa Wellbeing Centre is a proposed new healthcare facility located in Llanedynrn, Wales. The building consists of a ground floor and a first floor, with top floor level circa 4m above access level served by two protected escape stairs. There is a void that connects the two floors.

Legislation

BS 9999:2017 was used to demonstrate functional requirements with Building Regulations 2010.

Risk Profile

The risk profile of the building is classed as B2, i.e. occupants are awake and familiar with their surroundings, as per BS9999:2017.

Fire Detection & Alarm

The minimum required detection and alarm system within the Maelfa Wellbeing Hub is a manual call point system. However, an L1 automatic detection and alarm system in accordance with BS5839-1 will be provided to ensure a higher standard of fire safety.

Evacuation Strategy

The building has been designed to have a simultaneous evacuation approach.

Structural Fire Protection

As the building has a single storey above ground floor, the structural fire protection required is 30 min.

Smoke Ventilation

No smoke ventilation is required in the building.

Fire Suppression

No fire suppression is required in the building.

Fire Service Access

Due to the height and area of the building, vehicle access for a pump appliance is provided to at least 15% of the total perimeter.

Alternative Approaches

- Category L1 fire detection & alarm systems require any void over 800mm in height to be provided with detection. Following a risk assessment, it has been proposed that voids with no fire load (and therefore no ignition source) in them are not provided with detectors. There are no voids connecting multiple rooms, as all partition walls are enclosed to full height.
- Recesses more than 2m off corridors need to be enclosed in fire rated construction. There is such a scenario on the first floor of the Wellbeing Centre, as shown below. However, the recessed rooms are WCs and an interview room, which will have a very low fire load, therefore the risk of fire in any of those rooms is negligible and enclosing this recess in fire rated construction is an over provision.

Both approaches have been agreed with the Statutory Approvers.

See Section 15 - Appendix 8 for the full Fire Strategy / Report

	5.5	Acoustics
--	-----	-----------

5.5 Acoustic Strategy Executive Summary

The below summarises each section of the report and the main points within them:

Section 1.0 outlines the purpose and scope of the report.

Section 2.0 provides further details on the acoustic, noise and vibration guidelines that apply to this development and sets out a detailed list of acoustic performance criteria, covering the following issues:

- Indoor ambient noise level (IANL)
- Airborne sound insulation (walls and floors)
- Impact sound insulation (floors)
- Rain noise
- Reverberation time
- Building services noise internal and external limits.

The criteria are based on HTM 08-01 and the Welsh equivalent document WHBN 36.

Section 3.0 details the assessment of acoustic issues relating to the architectural elements of the design.

Summary details are provided of the baseline noise survey which was undertaken by Formant on 20 February 2019. The results of the baseline noise survey have been used to review the proposed ventilation strategy and façade design in connection with meeting the indoor ambient noise level and rain noise criteria inside the building. The proposed design is considered to be capable of complying fully with the noise criteria.

Guidance is provided on managing privacy in Consulting rooms when windows are open and external areas are accessible. It should be noted that this issue may require client management, e.g. to restrict public access to external areas where confidentiality could be compromised.

Internal noise transfer between rooms has been assessed and guidance is provided on the specification and construction of partitions, floors, ceilings, doors, moveable walls, internal glazing and potential noise flanking paths around those elements.

During the detailed design, the Architect has incorporated the required sound insulation ratings shown on our acoustic marked-up plans into their partition types and layout plans. We have reviewed the partition types and have provided comments on acoustic ratings.

A moveable partition is proposed between the Seminar Room and Group Room. The report explains that even with a high specification system, it is still possible that the moveable partition would fall short of the HTM 08-01 sound insulation requirements between these spaces (DnTw 47 dB) because they are inherently difficult to seal on-site. However significant operational issues are not expected to occur as a result of this.

The key acoustic principles to control flanking noise transmission are explained and are shown diagrammatically on sketch illustrations of generic interfaces. During detailed design we have also worked with the architect to review their detail drawings for key interfaces and adjacencies and ensure they are acoustically acceptable.

Room acoustics are covered with a review of the proposed ceiling systems, all of which are considered to be capable of meeting the acoustic absorption requirements throughout the building.

Section 4.0 covers the assessment of building services noise control measures.

A detailed review of the proposed M&E design has been undertaken during Detailed Design. The advice provided directly to the M&E consultant has been incorporated into their documentation and is reproduced in the report for completeness.

Environmental plant noise emissions have been assessed in line with the Local Authority policy and the necessary attenuation/screening measures have been incorporated into the design. Internal plant noise control measures have been outlined along with construction requirements for internal plant noise control.

With the incorporation of this advice, the proposed design is considered to be capable of complying with the noise criteria both inside and outside the building.

Design principles have been outlined to minimize the risk of structure-borne noise from lifts and other vibrating plant.

Section 5.0 covers the acoustic credits which are available under the BREEAM assessment.

Three credits are available under Hea5 provided that the building meets appropriate acoustic performance standards and testing requirements relating to sound insulation, indoor ambient noise level and room acoustics. The proposed criteria are based on HTM 08-01 and any deviations or alternative standards have been justified in the report.

The report provides the design stage evidence confirming that all three credits are available. It also provides details of the commissioning measurements which will be required to fully sign off the credits. One credit is also available under Pol5 where a noise impact assessment compliant with BS 4142:2014 is commissioned and the noise level from the assessed building, as measured in the locality of the nearest or most exposed noise-sensitive development, is at least 5 dB lower than the background noise throughout the day and night. The proposed criteria are based on the Local Authority requirements which are 5 dB more onerous than BREEAM.

A BS4142 Noise Impact Assessment has been completed and is detailed in Section 4.1 of the report therefore this credit can be awarded.

See Section 15 - Appendix 9 for the full Acoustic Strategy / Report

	5.6	Ecology & Arboricultural
--	-----	--------------------------

5.6 Ecology & Arboricultural Executive Summary

The BREEAM Ecology Assessment was led by Tim Oliver MCIEEM as Suitably Qualified Ecologist with over 20 years' experience in ecological consultancy.

The site lies within an area of urban park comprising managed amenity grassland with a few semi-mature amenity trees and includes areas of hard standing (an existing car park and hard surfaced multi-use games area (MUGA) enclosed by fencing). A Preliminary Ecological Appraisal was undertaken at the outset of the Llanederyn Wellbeing Hub project to define the features, assess their value and inform site layout and concept design. The site adjoins a block of ancient semi-natural woodland of importance at a county level with a large mature oak directly adjacent to the south-western boundary.

The mature tree adjacent to the BREEAM boundary was subject to a climbing survey by an NRW licensed bat surveyor and accredited tree climber. The inspections found no evidence of bat roosts in the tree. One small cavity feature in a small branch overhanging the path is subject to removal during the essential pruning back of the canopy. The feature has low potential value for bats, due to the small size of the internal cavity in a narrow branch towards the edge of the canopy.

The ecologists worked closely with the project team defining key features, reviewing potential negative effects during construction and in the final development, contingency measure options for legally protected species, risks to programme and opportunities for building value for biodiversity into the final development.

Avoidance measures were discussed with the project team and where impacts were unavoidable potential mitigation solutions were considered to offset the effects of the development on habitats and species. As key stakeholders there was liaison with the Cardiff Council County Ecologist and Tree Protection Officer defining key issues including the proximity to a designated ancient woodland and potential for impacts on a mature oak tree. Proposals for mitigation and species protection were agreed with the stakeholders with their input. The habitat and species data collected as part of the project was provided to the South East Wales Biological Record Centre.

The existing habitats within the site scored a total of 15,240 biodiversity units, taking into account their distinctiveness and ecological condition. Overall 6,128 Biodiversity units will be lost due to the development footprint and construction working area.

The ecology report made recommendations in relation to ancient woodland protection, bat flight lines, tree pruning precautions, and future grassland habitats. The final landscape scheme was designed collaboratively by the project team, and it incorporates a Bioswale, new woodland edge native shrub planting and rain gardens. In addition, over a third of the existing amenity grassland will be subject to enhancement through seeding with meadow wild flower followed up sensitive grassland management. Consequently the final development delivers a biodiversity net gain within the site boundary, achieving 18152 biodiversity units, which equates to 119% of the value of the existing site.

Commitments have been made to monitor the environmental measures detailed in the BREEAM report during construction and following the creation of the landscape scheme to document the outcomes. A compliance audit will be completed by the site contractors to demonstrate delivery of biodiversity measures, with the oversight of the project ecologist. This should ensure compliance with all relevant Welsh, UK and international legislation.

A Landscape and Ecology Management Plan (LEMP) has been prepared in accordance with BS 42020:2013 to cover the first 5 years of the project post-completion. The management plan details the ongoing management and maintenance actions required to promote the establishment of habitats and maintain their value over time.

See Section 15 - Appendix 10 for the full Ecology & Arboriculture Reports

Project Details

- 6.1 Drawing Register
- 6.2 Gross Floor Area Analysis - SoA
- 6.3 Site Plan
- 6.4 Landscaping
- 6.5 Floor Plans
- 6.6 Elevation & Sections
- 6.7 C Sheets
- 6.8 Fire Strategy
- 6.9 Access & Maintenance
- 6.10 Ceiling Plan, Finishes & Wall Protection Plan
- 6.11 NBS, FF&E & Sanitaryware Schedule
- 6.12 Civils & Structures
- 6.13 MEP

	6.1	Drawing Register
--	-----	------------------

6.1 Drawing Register

C&V UHB Issue Sheet

Name	Description	Revision
MWC-CVU-ZZ-XX-SP-K-0001	Exchange_Information_Requirements	P01
MWC-CVU-ZZ-XX-SP-K-0002	Asset_Information_Requirements	P01

Willmott Dixon Issue Sheet

Name	Description	Revision
MWC-WDC-ZZ-XX-SP-W-0002	Appendix_A_File_Naming_Protocol	P01
MWC-WDC-ZZ-XX-SP-W-0001	BIM_Execution_Plan	P01

Bureau Veritas Issue Sheet

Name	Description	Revision
MWC-BVL-ZZ-RP-Y-XX-0001	Fire Safety Strategy Report	P05

Cambria Issue Sheet

Name	Description	Revision
MWC-CAM-ZZ-00-DR-C-52-1101	Drainage Strategy Plan	P10
MWC-CAM-ZZ-00-DR-C-52-1105	Drainage Strategy Phase 2	P06
MWC-CAM-ZZ-00-DR-C-52-1501	Drainage Construction Details (Sheet 1)	P01
MWC-CAM-ZZ-00-DR-C-52-1502	Drainage Construction Details (Sheet 2)	P01
MWC-CAM-ZZ-00-DR-C-90-0108	Site Sections (Southern Car Park)	P01
MWC-CAM-ZZ-00-DR-C-90-0109	Site Sections (Temp Car Park)	P01
MWC-CAM-ZZ-00-DR-C-90-0112	Cut and Fill Analysis Plan	P04
MWC-CAM-ZZ-00-DR-C-90-0113	External Works Plan	P04
MWC-CAM-ZZ-00-DR-C-90-0114	Existing Site Plan (Powerhouse Site)	P01
MWC-CAM-ZZ-00-DR-C-90-0115	Existing Site Plan (Temporary Car Park)	P01
MWC-CAM-ZZ-00-DR-C-90-0117	Proposed Contours and Levels Plan	P03
MWC-CAM-ZZ-00-DR-C-90-0118	Proposed Contours and Levels Plan (Temporary Car Park)	P02
MWC-CAM-ZZ-00-DR-C-90-0119	Proposed Contours and Levels Plan (Southern Car Park)	P02
MWC-CAM-ZZ-00-DR-C-90-0120	External Works Plan (Temporary Car Park)	P01
MWC-CAM-ZZ-00-DR-C-90-0121	External Works Plan (Southern Car Park)	P02
MWC-CAM-ZZ-00-DR-C-90-0500	Highway Access GA	P01
MWC-CAM-ZZ-00-DR-C-90-0501	External Works Details	P03
MWC-CAM-ZZ-00-DR-S-20-2209	Proposed Steelwork Walkway	P01
MWC-CAM-ZZ-01-DR-S-20-3211	First Floor Steelwork GA	P06
MWC-CAM-ZZ-RF-DR-S-20-3220	Roof Steelwork	P06
MWC-CAM-ZZ-RF-DR-S-20-3221	Parapet and High Level Roof GA	P04
MWC-CAM-ZZ-RF-DR-S-20-3403	Roof Plant Room Elevations	P01
MWC-CAM-ZZ-XX-HS-SC-00-0006	Designer's_Risk_Assessment	P01
MWC-CAM-ZZ-XX-RP-C-00-0002	Travel Plan	P03
MWC-CAM-ZZ-XX-RP-C-00-0003	Transport Statement	P03
MWC-CAM-ZZ-XX-RP-SC-XX-0009	Design Standards Statement & Assumptions	P02
MWC-CAM-ZZ-XX-SH-SC-XX-0008	Schedule of Derogations	P02
MWC-CAM-ZZ-XX-SP-00-0901	STRUCTURAL SPECIFICATION	P03
MWC-CAM-ZZ-XX-SP-C-00-0801	NBS Part D - Excavation and Fillings	P01
MWC-CAM-ZZ-XX-SP-C-00-0802	NBS Part Q - Roads and Paving	P01
MWC-CAM-ZZ-XX-SP-C-00-0803	NBS Part R - Disposal Systems	P01
MWC-CAM-ZZ-ZZ-DR-C-90-0106	Site Cross Section Sh1	P03
MWC-CAM-ZZ-ZZ-DR-C-90-0107	Site Cross Section Sh2	P03
MWC-CAM-ZZ-ZZ-DR-C-90-0110	Site Sections (Hard Play Area)	P01
MWC-CAM-ZZ-ZZ-DR-S-20-3301	Building Sections Sheet 1	P03
MWC-CAM-ZZ-ZZ-DR-S-20-3302	Building Sections Sheet 2	P03
MWC-CAM-ZZ-ZZ-DR-S-20-3303	Building Sections Sheet 3	P03
MWC-CAM-ZZ-ZZ-DR-S-20-3401	Elevations Sheet 1	P03
MWC-CAM-ZZ-ZZ-DR-S-20-3402	Elevations Sheet 2	P03
MWC-CAM-ZZ-ZZ-DR-S-20-3601	3D Visualisation	P02

Roberts Limbrick Issue Sheet

Name	Description	Revision
MWC-RLA-ZZ-00-DR-A-01110	Existing Powerhouse Hub Ground Floor GA Plan	P01
MWC-RLA-ZZ-00-DR-A-03010	Existing Powerhouse Hub Ground Floor Demolitions	P01
MWC-RLA-ZZ-00-DR-A-05001	Proposed Ground Floor GA Plan	P14
MWC-RLA-ZZ-00-DR-A-05010	Proposed Powerhouse Hub Ground Floor GA Plan	P01
MWC-RLA-ZZ-00-DR-A-07001	Ground Floor Fire Strategy Plan	P07
MWC-RLA-ZZ-00-DR-A-08001	Ground Floor Cleaning and Maintenance Plan	P03
MWC-RLA-ZZ-00-DR-A-21001	GF Internal Partition Setting Out	P01
MWC-RLA-ZZ-00-DR-A-22001	Wall Types Ground Floor	P03
MWC-RLA-ZZ-00-DR-A-23001	Ground Floor Buildups and Screed	P02
MWC-RLA-ZZ-00-DR-A-24101	GF Balustrade Location Plan	P01
MWC-RLA-ZZ-00-DR-A-35001	Ceiling Finishes Plan Ground Floor	P04
MWC-RLA-ZZ-00-DR-A-35010	Proposed Powerhouse Hub Ceiling Finishes Plan Ground Floor	P01
MWC-RLA-ZZ-00-DR-A-42001	Wall Finishes Ground Floor	P01
MWC-RLA-ZZ-00-DR-A-43001	Floor Finishes Ground Floor	P02
MWC-RLA-ZZ-00-DR-A-43010	Proposed Powerhouse Hub Floor Finishes Ground Floor Plan	P01
MWC-RLA-ZZ-00-DR-A-72001	Ground Floor - Room Loaded Plan	P04
MWC-RLA-ZZ-00-DR-A-72011	Consulting Room - Typical (GP's)	P05
MWC-RLA-ZZ-00-DR-A-72012	Treatment Room - Typical (GP's)	P05
MWC-RLA-ZZ-00-DR-A-72013	GPs Office	P05
MWC-RLA-ZZ-00-DR-A-72015	GP Deputy Manager Office	P04
MWC-RLA-ZZ-00-DR-A-72017	Treatment Room 02	P04
MWC-RLA-ZZ-00-DR-A-72018	Consulting - Plebotomy	P05
MWC-RLA-ZZ-00-DR-A-72019	Interview Room	P03
MWC-RLA-ZZ-00-DR-A-72020	Reception	P03
MWC-RLA-ZZ-00-DR-A-72021	WC	P04
MWC-RLA-ZZ-00-DR-A-72022	Accessible WC	P04
MWC-RLA-ZZ-00-DR-A-72023	GP Store 2	P04
MWC-RLA-ZZ-00-DR-A-72024	GP's Dirty Utility	P04
MWC-RLA-ZZ-00-DR-A-72025	Accessible Specimen WC	P04
MWC-RLA-ZZ-00-DR-A-72026	Accessible Staff WC	P04
MWC-RLA-ZZ-00-DR-A-72027	GP Store	P04
MWC-RLA-ZZ-00-DR-A-72028	Changing Places	P04
MWC-RLA-ZZ-00-DR-A-72029	Measurement Room	P03
MWC-RLA-ZZ-00-DR-A-72031	Baby Room	P03
MWC-RLA-ZZ-00-DR-A-72032	Midwives Store	P02
MWC-RLA-ZZ-00-DR-A-72033	District Nurse Store	P02
MWC-RLA-ZZ-00-DR-A-72034	Seminar Room	P03
MWC-RLA-ZZ-00-DR-A-72035	Group Room	P03
MWC-RLA-ZZ-00-DR-A-72036	Group Room Store	P02
MWC-RLA-ZZ-00-DR-A-72037	GP's Cleaners	P03
MWC-RLA-ZZ-00-DR-A-72038	Waiting Area	P02
MWC-RLA-ZZ-00-DR-A-72039	Information Area	P02
MWC-RLA-ZZ-00-DR-A-72040	Kitchenette	P04
MWC-RLA-ZZ-00-DR-A-73101	GF Reception Desk Layout Details	P01
MWC-RLA-ZZ-00-DR-A-74001	Ground Floor IPS Types Location Plan	P01
MWC-RLA-ZZ-01-DR-A-01111	Existing Powerhouse Hub First Floor GA Plan	P01
MWC-RLA-ZZ-01-DR-A-05002	Proposed First Floor GA Plan	P13
MWC-RLA-ZZ-01-DR-A-07002	First Floor Fire Strategy Plan	P04
MWC-RLA-ZZ-01-DR-A-08002	First Floor Cleaning and Maintenance Plan	P03
MWC-RLA-ZZ-01-DR-A-21011	FF Internal Partition Setting Out	P01
MWC-RLA-ZZ-01-DR-A-22002	Wall Types First Floor	P03
MWC-RLA-ZZ-01-DR-A-23002	First Floor Buildups and Screed	P01
MWC-RLA-ZZ-01-DR-A-35002	Ceiling Finishes Plan First Floor	P04
MWC-RLA-ZZ-01-DR-A-42002	Wall Finishes First Floor	P01
MWC-RLA-ZZ-01-DR-A-43002	Floor Finishes First Floor	P02
MWC-RLA-ZZ-01-DR-A-72002	Room Loaded Plan First Floor	P03
MWC-RLA-ZZ-01-DR-A-72014	GP Manager Office	P05
MWC-RLA-ZZ-01-DR-A-72016	Podiatry Clinic Room	P05
MWC-RLA-ZZ-01-DR-A-72050	Consulting Room 1 (Outpatients) Room 01-12	P04
MWC-RLA-ZZ-01-DR-A-72051	Consulting Room 2 (Outpatients) Room 01-20	P03
MWC-RLA-ZZ-01-DR-A-72052	Consulting Room 3 (Outpatients) Room 01-33	P03
MWC-RLA-ZZ-01-DR-A-72053	Consulting Room4 (Outpatients) Room_01-34	P03
MWC-RLA-ZZ-01-DR-A-72054	Treatment Room 1 (Outpatients) Room_01-13	P04

Roberts Limbrick Issue Sheet

Name	Description	Revision
MWC-RLA-ZZ-01-DR-A-72055	Treatment Room 2 (Outpatients) Room 01-14	P03
MWC-RLA-ZZ-01-DR-A-72056	Interview Room 1 (Outpatients) Room 01-15	P02
MWC-RLA-ZZ-01-DR-A-72057	Interview Room 2 (Outpatients) Room 01-16	P02
MWC-RLA-ZZ-01-DR-A-72058	Interview Room 3 (Outpatients) Room 01-17	P02
MWC-RLA-ZZ-01-DR-A-72059	Near Patient Testing Room 01-35	P02
MWC-RLA-ZZ-01-DR-A-72060	Podiatry Store 01-10	P02
MWC-RLA-ZZ-01-DR-A-72061	Equipment Store Room 01-18	P01
MWC-RLA-ZZ-01-DR-A-72062	General Store Room 01-19	P02
MWC-RLA-ZZ-01-DR-A-72063	Clean Utility Room 01-29	P02
MWC-RLA-ZZ-01-DR-A-72064	Store Room 01-30	P01
MWC-RLA-ZZ-01-DR-A-72065	Store Room 01-31	P01
MWC-RLA-ZZ-01-DR-A-72066	IT Hub 01-22	P02
MWC-RLA-ZZ-01-DR-A-72067	Clerk Reception 01-03	P02
MWC-RLA-ZZ-01-DR-A-72068	Waiting Room 01-02	P02
MWC-RLA-ZZ-01-DR-A-72069	GPs Meeting Room 01-53	P03
MWC-RLA-ZZ-01-DR-A-72070	Photocopy Room 01-51	P01
MWC-RLA-ZZ-01-DR-A-72071	Interview Quiet Room 1 01-49	P02
MWC-RLA-ZZ-01-DR-A-72072	Interview Quiet Room 2 01-50	P02
MWC-RLA-ZZ-01-DR-A-72074	Communal Changing Room 01-40	P01
MWC-RLA-ZZ-01-DR-A-72075	Staff Acc. WC & Shower Room 01-41	P02
MWC-RLA-ZZ-01-DR-A-72076	Staff Rest Room 01-42	P03
MWC-RLA-ZZ-01-DR-A-72077	Admin Area (15 Spaces) Room 01-47	P04
MWC-RLA-ZZ-01-DR-A-72078	Admin Area (13 Spaces) Room 01-48	P04
MWC-RLA-ZZ-01-DR-A-73102	FF Reception Desk Layout Details	P01
MWC-RLA-ZZ-01-DR-A-74002	First Floor IPS Types Location Plan	P01
MWC-RLA-ZZ-B1-DR-A-05004	Proposed Undercroft GA Plan	P02
MWC-RLA-ZZ-RF-DR-A-01112	Existing Powerhouse Hub Roof GA Plan	P01
MWC-RLA-ZZ-RF-DR-A-05003	Proposed Roof GA Plan	P08
MWC-RLA-ZZ-RF-DR-A-07003	Roof Fire Strategy Plan	P04
MWC-RLA-ZZ-RF-DR-A-08003	Roof Cleaning and Maintenance Plan	P03
MWC-RLA-ZZ-RF-DR-A-21103	Plant Room Roof External Setting Out Plan	P01
MWC-RLA-ZZ-RF-DR-A-22003	Wall Types Roof	P02
MWC-RLA-ZZ-RF-DR-A-35003	Ceiling Finishes Plan Roof	P02
MWC-RLA-ZZ-RF-DR-A-43003	Floor Finishes Roof	P02
MWC-RLA-ZZ-XX-RP-A-XX-005	Cleaning and Maintenance Strategy	P02
MWC-RLA-ZZ-XX-RP-A-XX-006	Significant Risk List	P01
MWC-RLA-ZZ-XX-RP-A-XX010	Design and Access Statement Reserved Matters	P01
MWC-RLA-ZZ-XX-SH-A-XX-001	Schedule of Derogations	P03
MWC-RLA-ZZ-XX-SH-A-XX-003	Sanitaryware Schedule	P02
MWC-RLA-ZZ-XX-SH-A-XX-004	FF&E Schedule	P02
MWC-RLA-ZZ-XX-SH-A-XX-005	Schedule of Accommodation OBC vs FBC Comparison	P01
MWC-RLA-ZZ-XX-SP-A-SPF10	F10 Brick/ block walling	P01
MWC-RLA-ZZ-XX-SP-A-SPF30	F30 Accessories/ sundry items for brick/ block/ stone walling	P02
MWC-RLA-ZZ-XX-SP-A-SPG10	G10 Structural steel framing	P01
MWC-RLA-ZZ-XX-SP-A-SPH11	H11 Curtain walling	P01
MWC-RLA-ZZ-XX-SP-A-SPH31	H31 Metal profiled/ flat sheet cladding/ covering	P01
MWC-RLA-ZZ-XX-SP-A-SPH92	H92 Rainscreen cladding	P03
MWC-RLA-ZZ-XX-SP-A-SPJ30	J30 Liquid applied tanking/ damp proofing	P01
MWC-RLA-ZZ-XX-SP-A-SPJ40	J40 Flexible sheet waterproofing/ damp proofing	P01
MWC-RLA-ZZ-XX-SP-A-SPK10	K10 Gypsum board dry linings/ partitions/ ceilings	P01
MWC-RLA-ZZ-XX-SP-A-SPK11	K11 Rigid sheet flooring/ sheathing/ decking/ sarking/ linings/ casings	P01
MWC-RLA-ZZ-XX-SP-A-SPK13	K13 Rigid sheet fine linings and panelling	P01
MWC-RLA-ZZ-XX-SP-A-SPK32	K32 Panel cubicles/ duct and wall linings/ screens	P01
MWC-RLA-ZZ-XX-SP-A-SPK40	K40 Demountable suspended ceilings	P01
MWC-RLA-ZZ-XX-SP-A-SPL10	L10 Windows/ Rooflights/ Screens/ Louvres	P01
MWC-RLA-ZZ-XX-SP-A-SPL20	L20 Doors/ shutters/ hatches	P02
MWC-RLA-ZZ-XX-SP-A-SPL30	L30 Stairs/ ladders/ walkways/ handrails/ balustrades	P01
MWC-RLA-ZZ-XX-SP-A-SPL40	L40 General glazing	P01
MWC-RLA-ZZ-XX-SP-A-SPM10	M10 Cement based levelling/ wearing screeds	P01
MWC-RLA-ZZ-XX-SP-A-SPM50	M50 Rubber/ plastics/ cork/ lino/ carpet tiling/ sheeting	P02
MWC-RLA-ZZ-XX-SP-A-SPM60	M60 Painting/ clear finishing	P01
MWC-RLA-ZZ-XX-SP-A-SPN13	N13 Sanitary appliances and fittings	P01
MWC-RLA-ZZ-XX-SP-A-SPP12	P12 Fire stopping systems	P01

Roberts Limbrick Issue Sheet

Name	Description	Revision
MWC-RLA-ZZ-XX-SP-A-SPP20	P20 Unframed isolated trims/ skirtings/ sundry items	P01
MWC-RLA-ZZ-XX-SP-A-SPR10	R10 Rainwater drainage systems	P01
MWC-RLA-ZZ-XX-SP-A-SPZ10	Z10 Purpose made joinery	P01
MWC-RLA-ZZ-XX-SP-A-SPZ20	Z20 Fixings and adhesives	P01
MWC-RLA-ZZ-XX-SP-A-SPZ21	Z21 Mortars	P01
MWC-RLA-ZZ-XX-SP-A-SPZ22	Z22 Sealants	P01
MWC-RLA-ZZ-XX-SP-A-SPZ31	Z31 Powder coatings	P01
MWC-RLA-ZZ-ZZ-DR-A-00001	Existing Site Plan	P01
MWC-RLA-ZZ-ZZ-DR-A-00002	Proposed Site Plan	P04
MWC-RLA-ZZ-ZZ-DR-A-00005	Land Acquisition Transfer Plan	P04
MWC-RLA-ZZ-ZZ-DR-A-00006	Land Acquisition Transfer Plan Extended Contractors Compound	P01
MWC-RLA-ZZ-ZZ-DR-A-01101	Existing Health Centre Ground & First Floor GA Plans	P01
MWC-RLA-ZZ-ZZ-DR-A-01102	Existing Health Centre GA Elevations	P01
MWC-RLA-ZZ-ZZ-DR-A-01115	Existing Powerhouse Hub GA Elevations	P01
MWC-RLA-ZZ-ZZ-DR-A-03001	Existing Health Centre Site Plan Demolitions	P01
MWC-RLA-ZZ-ZZ-DR-A-07011	Fire Strategy Elevations	P01
MWC-RLA-ZZ-ZZ-DR-A-09001	GA Elevations Sheet 1	P11
MWC-RLA-ZZ-ZZ-DR-A-09002	GA Elevations Sheet 2	P11
MWC-RLA-ZZ-ZZ-DR-A-09011	GA Sections Sheet 1	P03
MWC-RLA-ZZ-ZZ-DR-A-09012	GA Sections Sheet 2	P04
MWC-RLA-ZZ-ZZ-DR-A-09013	Strip Sections Sheet 1	P01
MWC-RLA-ZZ-ZZ-DR-A-09014	Strip Sections Sheet 2	P01
MWC-RLA-ZZ-ZZ-DR-A-10001	GIA Area Plans	P02
MWC-RLA-ZZ-ZZ-DR-A-20101	Ground Floor Details Sheet 1	P01
MWC-RLA-ZZ-ZZ-DR-A-20102	Ground Floor Details Sheet 2	P01
MWC-RLA-ZZ-ZZ-DR-A-21102	Strip Sections Sheet 2	P02
MWC-RLA-ZZ-ZZ-DR-A-24001	Stair 1 Setting Out Plans Sections & Details	P03
MWC-RLA-ZZ-ZZ-DR-A-24002	Stair 2 Setting Out Plans Sections & Details	P03
MWC-RLA-ZZ-ZZ-DR-A-24003	Stair 3 Setting Out Plans Sections & Details	P03
MWC-RLA-ZZ-ZZ-DR-A-24011	Lift Setting Out Plans Sections & Details	P03
MWC-RLA-ZZ-ZZ-DR-A-24110	Gallery Balustrade Details	P01
MWC-RLA-ZZ-ZZ-DR-A-27105	Roof Details Sheet 5	P01
MWC-RLA-ZZ-ZZ-DR-A-31016	External Louvre Elevations	P02
MWC-RLA-ZZ-ZZ-DR-A-31020	Internal Door Typical Elevations	P01
MWC-RLA-ZZ-ZZ-DR-A-74101	IPS Types Plans and Elevations Setting Out Sheet 1	P01
MWC-RLA-ZZ-ZZ-DR-A-74102	IPS Types Plans and Elevations Setting Out Sheet 2	P01
MWC-RLA-ZZ-ZZ-DR-A-74103	IPS Types Plans and Elevations Setting Out Sheet 3	P01
MWC-RLA-ZZ-ZZ-DR-A-74104	IPS Types Plans and Elevations Setting Out Sheet 4	P01
MWC-RLA-ZZ-ZZ-DR-A-74105	IPS Types Plans and Elevations Setting Out Sheet 5	P01
MWC-RLA-ZZ-ZZ-DR-A-74106	IPS Types Plans and Elevations Setting Out Sheet 6	P01
MWC-RLA-ZZ-ZZ-DR-A-90001	External Bin Store Plan Elevations & Sections	P02
MWC-RLA-ZZ-ZZ-DR-A-90101	Hard Surface Play Area Setting Out	P01
MWC-RLA-ZZ-ZZ-SH-A-31015	External Opening Schedule	P07
MWC-RLA-ZZ-ZZ-SH-A-31021	Internal Door and Internal Screen Type Elevations and Schedules Sheet 1	P03
MWC-RLA-ZZ-ZZ-SH-A-31022	Internal Door and Internal Screen Type Elevations and Schedules Sheet 2	P02
MWC-ZZ-ZZ-DR-A-00010-P01	Footpath Diversion / Stopping Up Site Plan	P01

Troup Bywaters + Anders Issue Sheet

Name	Description	Revision
MWC-TBA-V1-00-DR-E-61-0001	Ground Floor Containment Layout	P04
MWC-TBA-V1-00-DR-E-62-0001	Ground Floor Small Power & Data Layout	P05
MWC-TBA-V1-00-DR-E-63-0001	Ground Floor Lighting Layout	P03
MWC-TBA-V1-00-DR-E-64-0001	Ground Floor Nurse Call & Ancillary Services Layout	P03
MWC-TBA-V1-00-DR-E-67-0001	Ground Floor Fire Alarm Layout	P03
MWC-TBA-V1-00-DR-E-68-0001	Ground Floor Security Systems Layout	P03
MWC-TBA-V1-01-DR-E-61-0001	First Floor Containment Layout	P03
MWC-TBA-V1-01-DR-E-62-0001	First Floor Small Power & Data Layout	P03
MWC-TBA-V1-01-DR-E-63-0001	First Floor Lighting Layout	P03
MWC-TBA-V1-01-DR-E-64-0001	First Floor Nurse Call & Ancillary Services Layout	P03
MWC-TBA-V1-01-DR-E-67-0001	First Floor Fire Alarm Layout	P03
MWC-TBA-V1-01-DR-E-68-0001	First Floor and Plant Room Security Systems Layout	P03
MWC-TBA-V1-B1-DR-E-61-0001	Basement Level Containment Layout	P03
MWC-TBA-V1-RF-DR-E-61-0001	Roof Level Containment Layout	P02
MWC-TBA-V1-RF-DR-E-62-0001	Roof Level Power, Data and Lighting Layout	P02
MWC-TBA-V1-RF-DR-E-63-0001	Roof Level Lighting Layout	P02
MWC-TBA-V1-RF-DR-E-67-0001	Roof Level Fire Alarm Layout	P02
MWC-TBA-V1-ZZ-DR-E-60-0001	Typical LV Schematic	P03
MWC-TBA-V1-ZZ-DR-E-60-0002	Typical ICT System Schematic	P03
MWC-TBA-V1-ZZ-DR-E-60-0003	Typical Fire Alarm Schematic	P03
MWC-TBA-V1-ZZ-DR-E-60-0004	Typical Security Schematics	P03
MWC-TBA-V1-ZZ-DR-E-69-0001	Typical Lightning Protection Layout	P03
MWC-TBA-V3-XX-DR-E-SP-0001	External Electrical Services Layout (1 of 2)	P04
MWC-TBA-V3-XX-DR-E-SP-0002	External Electrical Services Layout (2 of 2)	P03
MWC-TBA-WA0225-E-RP-LM-001	External Lighting Report for planning purposes.	P01
MWC-TBA-ZZ-00-DR-E-62-1001	Ground Floor Power and Data Layout	P01
MWC-TBA-ZZ-00-DR-E-63-1001	Ground Floor Lighting Layout	P01
MWC-TBA-ZZ-00-DR-E-67-1001	Ground Floor Fire Detection and Alarm Layout	P01
MWC-TBA-ZZ-00-DR-E-68-1001	Ground Floor Security Layout	P01
MWC-TBA-ZZ-XX-SH-E-XX-0001	Schedule of Luminaires	P03
MWC-TBA-ZZ-ZZ-SP-E-60-0001	Electrical Services Scope of Works Specification	P02
MWC-TBA-ZZ-ZZ-SP-E-60-0002	Electrical Services Workmanship Specification	P01
TBA-ZZ-XX-SH-E-XX-002	Electrical Fire Alarm Risk Assessment	P02
MWC-TBA-V1-00-DR-M-52-0001	Ground Floor Above Ground Drainage Layout	P02
MWC-TBA-V1-00-DR-M-53-0001	Ground Floor Domestic Services Layout	P02
MWC-TBA-V1-00-DR-M-55-0001	Ground Floor Comfort Cooling Layout	P02
MWC-TBA-V1-00-DR-M-56-0001	Ground Floor Heating Layout	P02
MWC-TBA-V1-00-DR-M-57-0001	Ground Floor Ventilation Layout	P03
MWC-TBA-V1-01-DR-M-52-0001	First Floor Above Ground Drainage Layout	P02
MWC-TBA-V1-01-DR-M-53-0001	First Floor Domestic Services Layout	P02
MWC-TBA-V1-01-DR-M-55-0001	First Floor Comfort Cooling Layout	P03
MWC-TBA-V1-01-DR-M-56-0001	First Floor Heating Layout	P02
MWC-TBA-V1-01-DR-M-57-0001	First Floor Ventilation Layout	P03
MWC-TBA-V1-B1-DR-M-52-0001	Basement Level Above Ground Drainage Layout	P02
MWC-TBA-V1-RF-DR-M-50-0001	Roof Level Plantroom - Indicative Mechanical Services	P01
MWC-TBA-V1-RF-DR-M-52-0001	Roof Level Above Ground Drainage Layout	P02
MWC-TBA-V1-ZZ-DR-M-50-0001	Mechanical Plantroom Schematic	P02
MWC-TBA-V1-ZZ-DR-M-53-0001	Above Ground Drainage Schematic (Sheet 1 Of 2)	P01
MWC-TBA-V1-ZZ-DR-M-53-0002	Domestic Hot & Cold Water Schematic (2 Of 2)	P01
MWC-TBA-V1-ZZ-DR-M-56-0001	Heating Schematic	P01
MWC-TBA-V1-ZZ-DR-M-57-0002	Ventilation Schematic (2 of 2)	P02
MWC-TBA-V1-ZZ-DR-M-57-0010	Ventilation Schematic (1 of 2)	P02
MWC-TBA-ZZ-00-DR-M-50-1001	Ground Floor Public Health Services Layout	P01
MWC-TBA-ZZ-00-DR-M-56-1001	Ground Floor Heating Layout	P01
MWC-TBA-ZZ-00-DR-M-57-1001	Ground Floor Ventilation Layout	P01
MWC-TBA-ZZ-ZZ-SP-M-50-0001	Mechanical Services Scope of Works	P02
MWC-TBA-ZZ-ZZ-SP-M-50-0002	Mechanical Services Schedules	P03
MWC-TBA-ZZ-ZZ-SP-M-50-0003	Mechanical Services Workmanship Specification	P01
MWC-TBC-V1-ZZ-DR-M-52-0001	Above Ground Drainage Schematic (Sheet 1 Of 2)	P01
MWC-TBC-V1-ZZ-DR-M-52-0002	Above Ground Drainage Schematic (Sheet 2 of 2)	P01
MWC-TBA-V1-ZZ-DR-ME-80-0001	Incoming Services Plan	P05

Troup Bywaters + Anders Issue Sheet

Name	Description	Revision
MWC-TBA-XX-XX-RP-ME-0001	Derogation Schedule	P06
MWC-TBA-XX-XX-RP-ME-0008	MEP Access & Maintenance Strategy	P002
MWC-TBA-XX-XX-RP-ME-0010	Part L Check Stage 4	P01
MWC-TBA-XX-XX-RP-ME-0011	Stage 4 Thermal Comfort	P01
MWC-TBA-ZZ-XX-DR-ME-XX-0001	Site Plan Utility Services Record Drawing	P03
MWC-TBA-ZZ-ZZ-SP-ME-66-0001	Lift Specification	P03
MWC-TBA-ZZ-ZZ-SP-ME-80-0001	Engineering Preliminaries	P01
MWC-TBA-ZZ-ZZ-SP-ME-80-0002	MEP Scope of Works - Hyb Refurbishment	P01

Illman Young Issue Sheet

Name	Description	Revision
MWC-IYL-V3-XX-DR-L-21907-04	Landscape Masterplan	P03
MWC-IYL-V3-XX-DR-L-21907-05	Maelfa Wellbeing Centre General Arrangement	P03
MWC-IYL-V3-XX-DR-L-21907-07	Planting Strategy	P02
MWC-IYL-V3-XX-DR-L-21907-201	GA TEMP CAR PARK	P02
MWC-IYL-V3-XX-DR-L-21907-202	GA CAR PARK	P02
MWC-IYL-V3-XX-DR-L-21907-203	GA WBC CAR PARKING	P03
MWC-IYL-V3-XX-DR-L-21907-204	GA WBC BIORETENTION	P03
MWC-IYL-V3-XX-DR-L-21907-205	GA ACCESS FOOTPATHS	P03
MWC-IYL-V3-XX-DR-L-21907-206	GA KICKABOUT AREA	P03
MWC-IYL-V3-XX-DR-L-21907-402	HARD LANDSCAPE GP CAR PARK	P03
MWC-IYL-V3-XX-DR-L-21907-403	HARD LANDSCAPE WBC CAR PARK	P03
MWC-IYL-V3-XX-DR-L-21907-404	HARD LANDSCAPE WBC BIORETENTION	P03
MWC-IYL-V3-XX-DR-L-21907-405	HARD LANDSCAPE ACCESS FOOTPATHS	P03
MWC-IYL-V3-XX-DR-L-21907-406	HARD LANDSCAPE KICKABOUT AREA	P03
MWC-IYL-V3-XX-DR-L-21907-501	SECTIONS BIORETENTION PLANTERS 1 OF 5	P03
MWC-IYL-V3-XX-DR-L-21907-502	SECTIONS BIORETENTION PLANTERS 2 OF 5	P03
MWC-IYL-V3-XX-DR-L-21907-503	SECTIONS BIORETENTION PLANTERS 3 OF 5	P02
MWC-IYL-V3-XX-DR-L-21907-504	SECTIONS BIORETENTION PLANTERS 4 OF 5	P02
MWC-IYL-V3-XX-DR-L-21907-505	SECTIONS BIORETENTION PLANTERS 5 OF 5	P01
MWC-IYL-V3-XX-DR-L-21907-507	GP CAR PARK SECTIONS 1 OF 4	P02
MWC-IYL-V3-XX-DR-L-21907-508	GP CAR PARK SECTIONS 2 OF 4	P02
MWC-IYL-V3-XX-DR-L-21907-509	GP CAR PARK SECTIONS 3 OF 4	P01
MWC-IYL-V3-XX-DR-L-21907-510	GP CAR PARK SECTIONS 4 OF 4	P02
MWC-IYL-V3-XX-DR-L-21907-511	WBC CAR PARK SECTIONS DETAILS 1 OF 3	P01
MWC-IYL-V3-XX-DR-L-21907-512	WBC CAR PARK SECTIONS DETAILS 2 OF 3	P01
MWC-IYL-V3-XX-DR-L-21907-513	WBC CAR PARK SECTIONS DETAILS 3 OF 3	P01
MWC-IYL-V3-XX-DR-L-21907-514	WEST ACCESS STEPS SECTIONS DETAIL	P02
MWC-IYL-V3-XX-DR-L-21907-515	ACCESS STEPS TO KICKABOUT SECTIONS DETAIL	P01
MWC-IYL-V3-XX-DR-L-21907-600	TOPSOILING PLAN 1 OF 2	P01
MWC-IYL-V3-XX-DR-L-21907-601	TOPSOILING PLAN 2 OF 2	P01
MWC-IYL-V3-XX-DR-L-21907-700	PLANTING PLAN 1 OF 2	P01
MWC-IYL-V3-XX-DR-L-21907-701	PLANTING PLAN 2 OF 2	P01
MWC-IYL-ZZ-XX-SP-A-SPF31	Precast concrete sills/lintels/copings/features	P01
MWC-IYL-ZZ-XX-SP-A-SPQ10	Kerbs/ edgings/ channels/ paving accessories	P01
MWC-IYL-ZZ-XX-SP-A-SPQ23	Gravel/ Hoggin/ Woodchip/ Resin bound roads/ paving/ overlayss	P01
MWC-IYL-ZZ-XX-SP-A-SPQ24	Interlocking brick/block roads/pavings	P01
MWC-IYL-ZZ-XX-SP-A-SPQ25	Slab/brick/sett/cobble pavings	P01
MWC-IYL-ZZ-XX-SP-A-SPQ28	Topsoil, growing media and ameliorants	P01
MWC-IYL-ZZ-XX-SP-A-SPQ30	Seeding/turfing	P01
MWC-IYL-ZZ-XX-SP-A-SPQ31	External planting	P01
MWC-IYL-ZZ-XX-SP-A-SPQ35	Landscape maintenance	P01
MWC-IYL-ZZ-XX-SP-A-SPQ40	Fencing	P01
MWC-IYL-ZZ-XX-SP-A-SPQ41	Barriers/ guardrails	P01
MWC-IYL-ZZ-XX-SP-A-SPQ50	Site/street furniture/equipment	P01

	6.2	Gross Floor Area Analysis - SoA
--	-----	---------------------------------

6.2 Schedule of Accommodation

Maelfa Wellbeing Centre
Schedule of Accommodation - OBC vs FBC comparison

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
00 Ground Floor				
Entrance Lobby	15.94	16.02	0.08	
Circulation	70.51	38.11	-32.4	Circulation reduced due to adding Café and Café seating
Cafe Seating		17.55		Added during Stage 4 at Client request
Information Area	12.82	13.13	0.31	
Pushchair Park	8.51	8.31	-0.2	
Waiting (48 + 4 accessible)	56.59	58.74	2.15	Area increased to include circulation upto Stair 2
Stair 1	11.24	11.35	0.11	
Lift	5.82	5.82	0	
Circulation	98.47	103.81	5.34	
Wellbeing Reception	18.16	16.53	-1.63	
WC	3.06	3.04	-0.02	
WC	3.06	3.03	-0.03	
Acc. WC	4.84	4.8	-0.04	
Interview	9.46	9.46	0	
GP's Office	52.09	51.96	-0.13	
GP Deputy Manager	8.31	8.39	0.08	
Elec. Riser	1.6	1.6	0	
Mech. Riser	1.56	1.55	-0.01	
Treatment 1	20	20	0	
Treatment 2	19.98	19.98	0	
Consulting1	15	15	0	
Consulting 2	14.99	14.99	0	
Consulting 3	14.98	14.98	0	
Consulting 4	15	15	0	
Consulting 5	14.97	14.98	0.01	
GP Store		6.13		Added following requested for more storage by GP's.
Dirty Utility	8.08	6.76	-1.32	Dirty Utility reduced in size following GP request.
Spec WC Ind.	4.84	4.8	-0.04	
Staff WC Ind.	4.84	4.8	-0.04	
GP Room	12.85	12.85	0	
Circulation	39.43	39.04	-0.39	
Consulting 6	15	15	0	
Consulting 7	14.99	14.99	0	
Circulation	9.9	10.77	0.87	
Elec. Riser	1.98	1.99	0.01	
Mech. Riser	1.98	1.99	0.01	
Gas Riser	0.13	0.1	-0.03	
Consulting 8	15.14	15	-0.14	
Consulting 9	14.96	14.96	0	
Consulting 10	15.14	15	-0.14	
Consulting 11	13.87	13.86	-0.01	
Midwives Store	13.8	13.8	0	
District Nurse Store	21.53	20.79	-0.74	
Circulation	22.18	21.73	-0.45	
Stair 3	19.97	19.95	-0.02	
Seminar (24 places)	25.68	25.67	-0.01	
Group Room	76.54	76.78	0.24	
Cleaners	5.19	4.65	-0.54	Cleaners moved to accommodate additional GP store.
Group Room St	11.9	11.9	0	
Baby Room		5.19		Nappy & Feeding rooms combined into Baby Room.
WC	4.76	5.25	0.49	Relocated opposite Group Room
Measurement	7.47	7.31	-0.16	
Changing Places	12.56	12.44	-0.12	
Circulation	36.66	35.61	-1.05	
Stair 2	20.17	20.64	0.47	
Kitchenette	7.49	7.38	-0.11	
Cafe Servery		19.33		Added during Stage 4 following C&V UHB request.
Cafe Store		0.98		Added during Stage 4 following C&V UHB request.
Room area total	955.99	975.57	19.58	

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
01 First Floor				
Circulation	71.89	73.52	1.63	
Waiting (30 + 2 accessible)	39.55	33.55	-6	
Clerk Room	13.02	12.09	-0.93	
WC	3.06	3.04	-0.02	
WC	3.06	3.03	-0.03	
Acc. WC	4.84	4.8	-0.04	
WC	4.76	4.68	-0.08	
Lift	5.82	5.82	0	
Stair 1	18.17	16.85	-1.32	
Podiatry St	10.99	10.99	0	
Podiatry Clinic	15.98	16	0.02	
Consulting 1	13.99	13.99	0	
Treatment 1	16	16	0	
Treatment 2	15.98	16	0.02	
Interview 1	10.62	10.62	0	
Interview 2	10.58	10.58	0	
Interview 3	10.62	10.64	0.02	
Equip. St	8.96	8.97	0.01	
General St	11.5	11.5	0	
Consulting 2	14	14	0	
Stair 2	19.89	20.09	0.2	
IT Hub	18.83	18.5	-0.33	
Elec. Riser	1.6	1.6	0	
Mech. Riser	1.56	1.55	-0.01	
Cleaners	5.19	4.99	-0.2	
Dirty Utility	8.08	7.9	-0.18	
Spec. WC Ind.	4.84	4.8	-0.04	
Staff WC Ind.	4.84	4.8	-0.04	
Clean Utility	8.73	8.62	-0.11	
Store	9.54	9.54	0	
Store	9.58	9.25	-0.33	
Circulation	60.45	60.09	-0.36	
Consulting 3	13.97	13.98	0.01	
Consulting 4	14	14	0	
Near Patient Testing	10.96	10.96	0	
Circulation	9.9	10.74	0.84	
Elec. Riser	1.98	1.99	0.01	
Mech. Riser	1.98	1.99	0.01	
Gas Riser	0.13	0.13	0	
Communal Changing	15	14.9	-0.1	
Staff Acc WC & Shower	7.5	7.5	0	
Staff Rest	34.02	33.9	-0.12	
Staff WC	2.74	2.75	0.01	
Staff WC	2.74	2.76	0.02	
Circulation	29.87	29.43	-0.44	
Stair 3	19.59	19.65	0.06	
Admin. Area (15 spaces)	53.22	53.16	-0.06	
Admin. Area (13 spaces)	49.23	49.16	-0.07	
Interview / Quiet Rm	11.06	10.9	-0.16	
Interview / Quiet Rm	11.06	10.93	-0.13	
Photocopy Rm	6.5	6.4	-0.1	
GP Manager	11.29	11.26	-0.03	
GP's Meeting Room	16.71	16.63	-0.08	
Circulation	36.66	36.64	-0.02	
Staff WC	2.71	2.7	-0.01	
Room area total	819.34	810.86	-8.48	

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
RF Roof				
Stair 2	12.8	13	0.2	
Lobby	3.46	3.46	0	
Plant (Elec)	25.03	25.64	0.61	
Plant (Mech)	72.28	73.82	1.54	
Plant (Water)	32.28	34.92	2.64	
Room area total	145.85	150.84	4.99	

00 Ground Floor	955.99	975.57	19.58
01 First Floor	819.34	810.86	-8.48
RF Roof	145.85	150.84	4.99
	1921.18	1937.27	16.09

	6.3	Site Plan
--	-----	-----------

	6.4	Landscaping
--	-----	-------------

	6.5	Floor Plans
--	-----	-------------

6.6

Elevations & Sections

	6.7	C Sheets
--	-----	----------

	6.8	Fire Strategy
--	-----	---------------

	6.9	Access & Maintenance
--	-----	----------------------

6.10

Ceiling Plan, Finishes & Wall Protection Plan

	6.11	NBS, FF&E & Sanitaryware Schedule
--	------	-----------------------------------

6.11 NBS, FF&E & Sanitaryware Schedule

NBS Specification

Due to large number of pages, please refer to electronic copy.

6.13

MEP

Section	
7	Site Ownership Status

Site Ownership Status

Please refer to Section 2.6 of this document.

Planning Permission Status

8.1 Policy & Current Permissions

8.1

Policy & Current Permissions

8.1 Policy & Current Permissions

Existing permission

Outline planning permission was granted for the development on 29/08/2019 (Application reference: 19/01610MJR). All matters of detail were reserved for future determination. These are: access, appearance, landscaping, layout, and scale ('reserved matters' as defined in the TCP(DMP)(W)O 2012).

The formal description of development is:

- Site 1 - Proposed Wellbeing Hub, including replacement of existing car parking, sustainable urban drainage system, landscape works;
- Site 2 - Proposed demolition of existing Health Centre, and provision of car parking area, and replacement hard surface play area (amended position); and,
- Site 3 - Proposed temporary car park.

The permission is subject to twenty three conditions of permission, nine of which must be formally discharged prior to commencement of development. These cover the need for approval of detailed design, detailed drainage scheme, ground contamination assessment, tree protection, and the lighting scheme. The outline permission is not subject to a planning obligation agreement and does not require payment under the community infrastructure levy.

Implementation of the permission will also require a closure and replacement of an existing footpath which crosses the permission site. This is being covered by an application to Cardiff Council under Section 257 TCPA 1990, which is currently being processed.

Planning policy context

The statutory development plan is the Cardiff Local Development Plan 2006-2026. A key policy against which the application was assessed was Strategic Policy KP5: Good Quality and Sustainable Design, plus the requirements of the Green Infrastructure Supplementary Planning Guidance. National planning context is provided principally by Planning Policy Wales (10th Edition) 2018, Technical Advice Notes, and the Well-being of Future Generations Act.

Current planning application

Full planning permission is required in order to commence development, via the approval of reserved matters and the discharge of pre-commencement conditions. The reserved matters application was submitted to CCC on 05.06.2020 and validated on 22.06.2020 (application reference 20/01073/MJR) which covers all three parts of the site plus the pre-commencement conditions. An application for two remaining pre-commencement conditions (relating to ground conditions and remediation) will follow separately.

Additional applications

The development also requires the diversion of a public footpath. The project includes the replacement of the existing path with a new path of improved specification (materials, width, lighting), which will improve movement and equality of access through the area. The diversion is required to be approved by an application under S257 Town and Country Planning Act 1990, which is the legislation to allow diversion which is necessary to implement a planning permission.

It is anticipated that permission will be granted in September 2020.

Outline planning permission, Application reference: 19/01610MJR

Application No: 19/01610/MJR

PERMISSION FOR DEVELOPMENT

To:
Mr Farrar
The Urbanists
The Creative Quarter
8a Morgan Arcade
CARDIFF
CF10 1AF

Town and Country Planning Act 1990 (As Amended)
Town and Country Planning (Development Management Procedure) (Wales) Order 2012

WHEREAS you submitted an application for Outline Planning Permission received on 03/06/2019 for:SITE 1 - PROPOSED WELLBEING HUB, INCLUDING REPLACEMENT OF EXISTING CAR PARKING, SUSTAINABLE URBAN DRAINAGE SYSTEM, LANDSCAPE WORKS
SITE 2 - PROPOSED DEMOLITION OF EXISTING HEALTH CENTRE, AND PROVISION OF CAR PARKING AREA, AND REPLACEMENT HARD SURFACE PLAY AREA (AMENDED POSITION)
SITE 3 - PROPOSED TEMPORARY CAR PARK at LAND ADJACENT TO LLANEDEYRN COMMUNITY HUB AND LLANEDEYRN HEALTH CENTRE, MAELFA, LLANEDEYRN, CARDIFF (hereinafter called "the development");

CARDIFF COUNTY COUNCIL, as the Local Planning Authority for the County of Cardiff, in pursuance of its powers under the above mentioned Act and Orders, hereby PERMITS the development to be carried out in accordance with the application and plans submitted therewith, subject to compliance with the conditions specified hereunder:

1.

A. Approval of the details of the layout, scale and appearance of the buildings, the means of access thereto and the landscaping of the site (hereinafter called "the reserved matters") shall be obtained from the Local Planning Authority in writing before any development is commenced.

B. Plans and particulars of the reserved matters referred to in condition 1A above, relating to the layout, scale and appearance of any buildings to be erected, the means of access to the site and the landscaping of the site, shall be submitted in writing to the local planning authority and shall be carried out as approved.

C. Application for approval of the reserved matters shall be made to the Local Planning Authority before the expiration of three years from the date of this permission.

D. The development hereby permitted shall be begun either before the expiration of five years from the date of this permission or before the expiration of two years from the date of the last of the reserved matters to be approved, whichever is the later.

Reasons:

A. In accordance with the provisions of Article (3)1 of the Town and Country Planning (General Development Procedure) Order 2012.

B, C and D. In accordance with the provisions of Section 92 of the Town and Country Planning Act 1990.

2.

The proposal shall be carried out in accordance with the following drawings and documents :

CC1826-MWC-CAM-ZZ-ZZ-DR-C-90-0105-P03
CC1826-MWC-CAM-ZZ-ZZ-DR-C-90-0106-P02
CC1826-MWC-CAM-ZZ-ZZ-DR-C-90-0107-P02
MWC RLA ZZ XX DR A PL001 P03
MWC-RLA-ZZ-XX-DR-A-PL002 P03
MWC-RLA-ZZ-XX-DR-A-PL003 P05
MWC-RLA-ZZ-XX-DR-A-PL004 P02
MWC RLA ZZ XX DR A PL011 P04
MWC-RLA-ZZ-ZZ-DR-A-PL031 P02
MWC-RLA-ZZ-ZZ-DR-A-PL032 P02
MWC-RLA-ZZ-ZZ-DR-A-PL040 P01
MWC-IYL-V3-XX-DR-L-21907-04 P02
MWC-IYL-V3-XX-DR-L-21907-05 P02
MWC-TBA-ZZ-XX-DR-ME-XX-0001 P03
SK/21907 RevB
MWC CAM ZZ ZZ DR C 90 0105 P03
MWC CAM ZZ ZZ DR C 90 0106 P02
MWC CAM ZZ ZZ DR C 90 0107 P02
Drainage Strategy Report
MWC-CAM-ZZ-XX-RP-C-00-0001 Rev4 Arboricultural Report
MWC-ARB-ZZ-XX-DR-Z-570.3-0001 Preliminary Ecology Appraisal
Llanederyn Health Centre Bat Roost Assessment
Temporary Car Park Ecological Appraisal Report
CA11625/01 V3 Travel Plan MWC-CAM-ZZ=XX-RP-C-00-0002 RevA
Transportation and Access Statement
MWC-CAM-ZZ=XX-RP-C-00-0003 RevA

Reason To avoid doubt and confusion as to the approved plans.

3.

No development shall commence until an Arboricultural Impact Assessment, Method Statement, Tree Protection Plan, soft landscaping features and service lines has been submitted to and approved in writing by the local planning authority. The details shall include Scaled planting plan(s) Plant schedule(s) Tree pit section and plan views for different situations, Topsoil and subsoil specification informed by a Soil Resource Survey and

Plan prepared in accordance with the Soils and Development TGN, Planting methodology and Aftercare methodology Implementation programme
Reason: In the interests of visual amenities and biodiversity (LDP policy KP16).

4. No development shall commence until a drainage scheme for the site has been submitted to and approved in writing by the Local Planning Authority. The scheme shall provide for the disposal of foul, surface and land water, and include an assessment of the potential to dispose of surface and land water by sustainable means. Thereafter the scheme shall be implemented in accordance with the approved details prior to the occupation of the development and no further foul water, surface water and land drainage shall be allowed to connect directly or indirectly with the public sewerage system.
Reason: To prevent hydraulic overloading of the public sewerage system, to protect the health and safety of existing residents and ensure no pollution of or detriment to the environment (LDP policy EN10).
5. Prior to the commencement of the development an assessment of the nature and extent of contamination shall be submitted to and approved in writing by the Local Planning Authority. This assessment must be carried out by or under the direction of a suitably qualified competent person * in accordance with BS10175 (2011) Code of Practice for the Investigation of Potentially Contaminated Sites and shall assess any contamination on the site, whether or not it originates on the site. The report of the findings shall include:
- (i) a desk top study to identify all previous uses at the site and potential contaminants associated with those uses and the impacts from those contaminants on land and controlled waters. The desk study shall establish a 'conceptual site model' (CSM) which identifies and assesses all identified potential source, pathway, and receptor linkages;
 - (ii) an intrusive investigation to assess the extent, scale and nature of contamination which may be present, if identified as required by the desk top study;
 - (iii) an assessment of the potential risks to:
 - human health,
 - groundwaters and surface waters
 - adjoining land,
 - property (existing or proposed) including buildings, crops, livestock, pets, woodland and service lines and pipes,
 - ecological systems,
 - archaeological sites and ancient monuments; and
 - any other receptors identified at (i)
 - (iv) an appraisal of remedial options, and justification for the preferred remedial option(s).

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's

'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document 'Land Contamination: A guide for Developers' (2017), unless the Local Planning Authority agrees to any variation.

Reason: To ensure that information provided for the assessment of the risks from land contamination to the future users of the land, neighbouring land, controlled waters, property and ecological systems is sufficient to enable a proper assessment (LDP policy EN13).

6. Prior to the commencement of the development a detailed remediation scheme and verification plan to bring the site to a condition suitable for the intended use by removing any unacceptable risks to human health, controlled waters, buildings, other property and the natural and historical environment shall be submitted to and approved in writing by the Local Planning Authority. The scheme shall include all works to be undertaken, proposed remediation objectives and remediation criteria, a timetable of works and site management procedures. The scheme must ensure that the site will not qualify as contaminated land under Part 2A of the Environmental Protection Act 1990 in relation to the intended use of the land after remediation.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document 'Land Contamination: A guide for Developers' (2017),, unless the Local Planning Authority agrees to any variation.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors (LDP policy EN13).

7. The remediation scheme approved by condition 6 must be fully undertaken in accordance with its terms prior to the occupation of any part of the development unless otherwise agreed in writing by the Local Planning Authority. The Local Planning Authority must be given two weeks written notification of commencement of the remediation scheme works.

Within 6 months of the completion of the measures identified in the approved remediation scheme, a verification report that demonstrates the effectiveness of the remediation carried out must be submitted to and approved in writing by the Local Planning Authority.

All work and submissions carried out for the purposes of this condition must be conducted in accordance with DEFRA and the Environment Agency's 'Model procedures for the Management of Land Contamination, CLR 11' (September 2004) and the WLGA / WG / NRW guidance document 'Land Contamination: A guide for Developers' (2017), unless the Local Planning Authority agrees to any variation.

Reason : To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors (LDP policy EN13).

8. In the event that contamination is found at any time when carrying out the approved development that was not previously identified it must be reported in writing within 2 days to the Local Planning Authority, all associated works must stop, and no further development shall take place unless otherwise agreed in writing until a scheme to deal with the contamination found has been approved. An investigation and risk assessment must be undertaken and where remediation is necessary a remediation scheme and verification plan must be prepared and submitted to and approved in writing by the Local Planning Authority. Following completion of measures identified in the approved remediation scheme a verification report must be submitted to and approved in writing by the Local Planning Authority. The timescale for the above actions shall be agreed with the LPA within 2 weeks of the discovery of any unsuspected contamination.

Reason: To ensure that any unacceptable risks from land contamination to the future users of the land , neighbouring land, controlled waters, property and ecological systems are minimised, and to ensure that the development can be carried out safely without unacceptable risks to workers, neighbours and other offsite receptors in accordance with policy EN13 of the Cardiff Local Development Plan.

9. Any topsoil [natural or manufactured],or subsoil, to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes.

Reason To ensure that the safety of future occupiers is not prejudiced (LDP policy EN13).

10. Subject to approval of the above, sampling of the material received at the development site to verify that the imported soil is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with policy EN13 of the Cardiff Local Development Plan.

11. Any aggregate (other than virgin quarry stone) or recycled aggregate material to be imported shall be assessed for chemical or other potential contaminants in accordance with a scheme of investigation which shall be submitted to and approved in writing by the Local Planning Authority in advance of its importation. Only material approved by the Local Planning Authority shall be imported. All measures specified in the approved scheme

shall be undertaken in accordance with the relevant Code of Practice and Guidance Notes.

Subject to approval of the above, sampling of the material received at the development site to verify that the imported material is free from contamination shall be undertaken in accordance with a scheme and timescale to be agreed in writing by the LPA.

Reason: To ensure that the safety of future occupiers is not prejudiced in accordance with policy EN13 of the Cardiff Local Development Plan.

12. Any site won material including soils, aggregates, recycled materials shall be assessed for chemical or other potential contaminants in accordance with a sampling scheme which shall be submitted to and approved in writing by the Local Planning Authority in advance of the reuse of site won materials. Only material which meets site specific target values approved by the Local Planning Authority shall be reused.

Reason: To ensure that the safety of future occupiers is not prejudiced (LDP Policy EN13).

13. No activities shall be carried out which create noise audible at the boundary of any residential accommodation outside of the hours of 08.00 - 18.00 hours Monday to Fridays and 08.00 - 13.00 hours on Saturdays.

Reason: To ensure that the amenities of occupiers of other premises in the vicinity of the site are protected (LDP policy EN13).

14. There shall be no arrival, departure, loading or unloading of delivery vehicles outside the hours of 08.00 - 18.00 hours Monday to Fridays and 08.00 - 13.00 hours on Saturdays.

Reason: To ensure that the amenities of occupiers of other premises in the vicinity are protected (LDP policy EN13).

15. Prior to implementation a noise assessment shall be carried out and submitted to the Local Planning Authority to ensure the noise emitted from fixed plant and equipment on the site achieves a rating noise level of background -10dB at the nearest noise sensitive premises when measured and corrected in accordance with BS 4142: 2014 (or any British Standard amending or superseding that standard).

Reason: To ensure that the amenities of occupiers of other premises in the vicinity are protected (LDP policy EN13).

16. The rating level of the noise emitted from fixed plant and equipment on the site shall not exceed the existing background noise level at any time by more than 5dB(A) at any residential property when measured and corrected in accordance with BS 4142: 1997 (or any British Standard amending or superseding that standard).

Reason: To ensure that the amenities of occupiers of other premises in the vicinity are protected (LDP policy EN13).

17. The extraction of all fumes from the food preparation areas shall be mechanically extracted to a point to be agreed in writing by the Local

Planning Authority, and the extraction system shall be provided with a de-odourising filter. All equipment shall be so mounted and installed so as not to give rise to any noise nuisance. Details of the above equipment including the chimney shall be submitted to, and approved by, the Local Planning Authority in writing and the equipment installed prior to the commencement of use for the cooking of food. The equipment shall thereafter be maintained in accordance with the manufacturers' guidelines, such guidelines having previously been agreed by the Local Planning Authority in writing.

Reason: To ensure that the amenities of occupiers of other premises in the vicinity are protected (LDP policy EN13).

18. The temporary phase 1 car parking area will cease to be used for vehicle parking following the phase 2 car park being brought into beneficial use.
Reason: The phase 1 car park is only required for a temporary period until the phase 2 car park is available.
19. Prior to development commencing on the construction of the permanent car park on the site of the former health centre details of the layout, including landscaping, means of enclosure, lighting and surfacing material shall be submitted to and approved in writing by the local planning authority and then be implemented as approved.
Reason: In the interests of visual amenities (LDP policy KP5)
20. The existing Llanederyn Health Centre shall be demolished following the construction of the Wellbeing Hub and temporary car park in accordance with a scheme for securing the site which shall be submitted to and approved in writing by the local planning authority.
Reason: This part of the site is required for a permanent car park to serve the Wellbeing centre and no details of the demolition arrangements have been submitted.
21. No development shall commence until details of a lighting scheme that avoids illumination of any potential or actual bat roosts, access points, flight lines or foraging habitat has been submitted to and approved in writing by the local planning authority.
Reason: To safeguard a protected species (LDP policy EN13).
22. Prior to any development commencing on the wellbeing centre a detailed scheme for the replacement of the hard surfaced childrens play, associated means of enclosure, retaining works, ramp and CCTV and a programme for the provision of the scheme shall be submitted to the local planning authority for approval and shall then be carried out in accordance with the approved scheme and programme.
Reason: To ensure the provision of a satisfactory replacement leisure facility (LDP policy C5).
23. Prior to commencement of each phase of development a scheme of construction management shall be submitted to and approved by the Local Planning Authority to include details of construction traffic routes, times of deliveries, loading/unloading and storage of plant and materials, construction compounds, any temporary facilities for construction / sales staff, site hoardings (including the erection, maintenance and security), site access, wheel washing facilities, and details of a carpark for contractors

vehicles. The development construction of the relevant phase shall be managed strictly in accordance with the scheme so approved.

Reason: In the interests of highway safety and public amenity (LDP policy KP5).

All policies and proposals in the Development Plan which are relevant to this decision are listed in the report on the Application.

IT IS IMPORTANT THAT YOU SHOULD READ THOSE NOTES ON THE ATTACHED SHEET WHICH ARE RELEVANT TO THIS TYPE OF APPLICATION.

Dated: 29/08/2019



James Clemence
HEAD OF PLANNING
County Hall, Cardiff, CF10 4UW

It should also be noted that:

1. To protect the amenities of occupiers of other premises in the vicinity attention is drawn to the provisions of Section 60 of the Control of Pollution Act 1974 in relation to the control of noise from demolition and construction activities. Further to this the applicant is advised that no noise audible outside the site boundary adjacent to the curtilage of residential property shall be created by construction activities in respect of the implementation of this consent outside the hours of 0800-1800 hours Mondays to Fridays and 0800 - 1300 hours on Saturdays or at any time on Sunday or public holidays. The applicant is also advised to seek approval for any proposed piling operations.
2. The contamination assessments and the affects of unstable land are considered on the basis of the best information available to the Planning Authority and are not necessarily exhaustive. The Authority takes due diligence when assessing these impacts, however you are minded that the responsibility for
 - (i) determining the extent and effects of such constraints;
 - (ii) ensuring that any imported materials (including, topsoils, subsoils, aggregates and recycled or manufactured aggregates/ soils) are chemically suitable for the proposed end use. Under no circumstances should controlled waste be imported. It is an offence under Section 33 of the Environmental Protection Act 1990 to deposit controlled waste on a site which does not benefit from an appropriate waste management license. The following must not be imported to a development site;
 - Unprocessed / unsorted demolition wastes.

- Any materials originating from a site confirmed as being contaminated or potentially contaminated by chemical or radioactive substances.
- Japanese Knotweed stems, leaves and rhizome infested soils. In addition to section 33 above, it is also an offence under the Wildlife and Countryside Act 1981 to spread this invasive weed; and

(iii) the safe development and secure occupancy of the site rests with the developer.

Proposals for areas of possible land instability should take due account of the physical and chemical constraints and may include action on land reclamation or other remedial action to enable beneficial use of unstable land. The Local Planning Authority has determined the application on the basis of the information available to it, but this does not mean that the land can be considered free from contamination.

Quality Assurance and Standards Compliance

- 9.1 Schedule of Design Standards
- 9.2 AEDET
- 9.3 BREEAM
- 9.4 Commentary on Derogations
- 9.5 Statement of Sustainable Development Commitment
- 9.6 Decarbonisation
- 9.7 Community Benefits
- 9.8 CDM

	9.1	Schedule of Design Standards
--	-----	------------------------------

9.1 Schedule of Design Standards

The SCP shall use only materials, installations and designs that comply with the Building Regulations, EEC or British Standards and British Institute Codes of Practice unless set out in the brief and agreed with the Local Health Board.

The current Welsh Health Technical Memoranda (WHTM's) and Health Technical memoranda (HTM's) are all published on the NHS Wales Shared Services Partnership website.

The agreed floor plans have been determined in accordance with C&V UHB's initial schedule of accommodation and adjacency requirements, and are as subsequently modified during the consultation process. Accommodation layouts and room sizes may not be in accordance with healthcare guidance, including the room sizes noted in WHBN 36. However, the core principles of WHBN design guidance have been followed and C&V UHB has accepted the scheme accommodation as illustrated in the agreed plans. Where room areas are noted on the agreed plans these are approximate and measured between the perimeter walls of the room. All areas / space allocations associated with boxing in of structure (e.g. columns etc.), services (e.g. SVP's etc.), fixed furniture / equipment and duct panelling systems (e.g. IPS for sanitary ware etc.) are included in the areas noted. No additional allowance is allocated for areas associated with, but not limited to, such items and their boxing-in.

C&V UHB has noted that fire safety design is acceptable to Building Regulations Part B or BS 9999 (rather than Firecode) as permitted under WHBN 36 (4.68).

This project is being assessed under BREEAM Healthcare requiring an Excellent rating in accordance with C&V UHB requirements. This supersedes guidance given in some reference documents requiring only a Very Good rating or suggesting assessment re BREEAM Simple Buildings.

C&V UHB have confirmed that the scheme is to be developed on the understanding that anti-ligature requirements are not required, in view of the building functioning as a GP surgery with community healthcare services where patients are accompanied and/ or under supervision

	9.2	AEDET
--	-----	-------

9.2 AEDET

Introduction

The AEDET assessment is a continuous subjective appraisal of where the building stands in comparison with best practice.

Healthcare building design frequently involves complex concepts which are difficult to measure and evaluate. The AEDET toolkit evaluates a design by posing a series of clear, non-technical statements, encompassing the three key areas:

- Impact
- Build Quality
- Functionality

The three areas are split into ten assessment criteria which are used to assess how well a healthcare building complies with best practice. The three evaluation areas and associated assessment criteria are outlined below;

Impact

The ‘impact’ section deals with the extent to which the building creates a sense of place and contributes positively to the lives of those who use it and are its neighbours.

‘Impact’ is assessed under the following four criteria:

- Character and Innovation
- Form and Materials
- Staff and Patient Environment
- Urban and Social Integration

Build Quality

The ‘build quality’ section deals with the physical components of the building rather than the spaces. This is therefore what might be thought of as the more technical and engineering aspects of the building. It asks whether the building is soundly built, will be reliable and easy to operate, last well and is sustainable. It is also concerned with the actual process of construction and the extent to which any disruption caused is minimised. ‘Build quality’ is assessed under the following three criteria:

- Performance
- Engineering
- Construction

Functionality

The ‘functionality’ section deals with all those issues to do with the primary purpose or function of the building. It deals with how well the building serves these primary purposes and the extent to which it facilitates or inhibits the activities of the people who carry out the functions inside and around the building. ‘Functionality’ is assessed under the following three criteria:

- Use
- Access
- Space

Assessment Process

The AEDET process assesses each criteria by asking a set of questions that are then weighted and scored by the design team. Each question can either be weighted as High (2), Normal (1) or Zero (0), guidance within the assessment tool helps the design team and AEDET assessor assess the weighting. Once weighed the question is then scored as; Virtually Total Agreement (6); Strong Agreement (5); Fair Agreement (4); Little Agreement (3); Hardly Any Agreement (2); Virtually No Agreement (1); and Unable to Score (0)

Initial Assessment

The project was the subject to an AEDET review on 4th February 2018 at the Copthorne Hotel in Cardiff. This was facilitated by Andrew Waddington of the NHS Wales Shared Services Partnership following a presentation by the design team. The audience consisted of staff from a range of stakeholder organisations. The scheme was generally well received and a good level of debate entered into. A number of recommendations and considerations were posed to the design team, which will be considered during the further RIBA stage 3 / FBC scheme design development process.

FBC Assessment

The project was the subject to another AEDET review on 27th February 2020 at Cardiff and Vale University Hospitals office, Woodland House. This was again facilitated by Andrew Waddington of the NHS Wales Shared Services Partnership following a presentation by the design team. See below for a summary of the results.

See Section 15 - Appendix 4 for full AEDET Assessment

Achieving Excellence Design Evaluation Toolkit (AEDET Evolution)

NHS

Project details:

Title

Maelfa Health & Wellbeing Centre

Workshop details:

Location

Woodland House

Date

27/02/2020

Results summary:

A:	▶ Character and innovation																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
----	----------------------------	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NOTE: A filled traffic light dot [■] in the table above indicates a valid average score, a hollow dot [○] indicates that one or more statements have been marked as 'unable to score'.

	9.3	BREEAM
--	-----	--------

9.3 BREEAM

BREEAM 2018 FBC Status

The sustainability of the Maelfa Wellbeing Hub is being measured against the latest Building Research Establishment Environmental Assessment Method (BREEAM) 2018 New Construction environmental performance standard, of which the project is required to achieve a rating of Excellent.

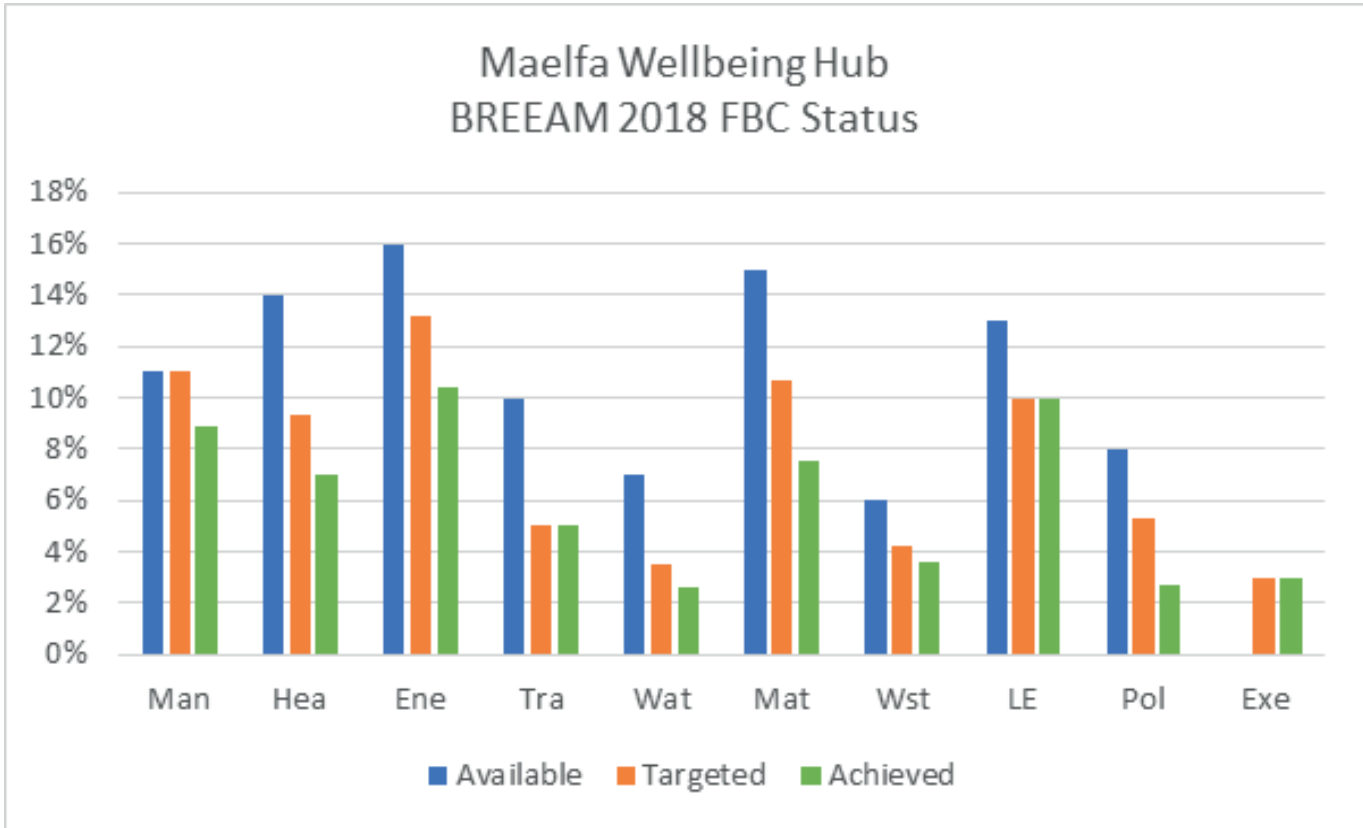
The project team have taken a proactive approach to BREEAM from the outset, appointing MM Sustainable Design as a dedicated BREEAM consultant to advise on a BREEAM strategy throughout the Outline Business Case (OBC) and Full Business Case (FBC) project stages.

The project team’s approach to BREEAM 2018 has been to be deliberately realistic in terms of targeting credits that can be achieved both during design (RIBA Stage 4) and crucially at practical completion (RIBA Stage 6). Credits have therefore only been targeted where the design team are confident that the technical requirements of the sustainability issue are able to be delivered.

A review of the Full Business Case design confirmed that Maelfa Wellbeing Hub has currently achieved a BREEAM 2018 score of 60.73% (Very Good) and is targeting a realistic score of 75.30% (Excellent). The figure below illustrates how the project is currently performing against each of the nine BREEAM categories of sustainability.

The project team are currently addressing the remaining sustainable design criteria to ensure that a rating of Excellent will be achieved. It is anticipated that the formal Interim Design Stage assessment will be issued to the BRE for certification prior to start on site.

An overview of the status of each credit and strategy employed by the project team to achieve a rating of Excellent is given in BREEAM Tracker v13. For full technical details regarding the status of each credit, including outstanding design requirements to achieve a rating of Excellent, please refer to: ‘MWC-MSD-ZZ-XX-RP-X-XX-0002 BREEAM Assessment Report v4’.



	9.4	Commentary on Derogations
--	-----	---------------------------

9.4 Commentary on Derogations

The Design Team will adhere to the requirements and practice guidance contained in Health Technical Memoranda and Health Building Notes. Derogation schedules clearly identify where areas do not meet these requirements and / or note where documents are not deemed as relevant. Derogation schedules are relevant to the requirements of current documents at the time of writing.

C+V UHB have confirmed that the scheme is to be developed on the understanding that anti-ligature requirements are not required, in view of the building functioning as a GP surgery with community healthcare services where patients are accompanied and / or under supervision.

The Derogation schedule takes precedence over all other material contained in the Client's Requirements and, in the event of inconsistency with or within the Client's Requirements, the Derogation Schedule shall apply. The schedule represents the list of Architectural, Mechanical and Electrical derogations and clarifications from Welsh healthcare guidance – i.e. Welsh Health Technical Memoranda (WHTM) where available, else Health Technical Memoranda (HTM), and Welsh Health Building Notes (WHBN) where available, else Health Building Notes (HBN) - in respect of the Maelfa Wellbeing Centre project.

See Section 15 - Appendix 2 for the Derogation Schedule

	9.5	Statement of Sustainable Development Commitment
--	-----	---

9.5 Statement of Sustainable Development Commitment

Design Stage Part L2A (2014) Compliance Dynamic Thermal Modelling

This report updated in February 2020 details the methodology and preliminary results for the design stage Part L2A (2014, Wales) Criterion 1 (CO2 Emissions) assessment for the proposed building. The assessment reflects the design inputs available at the time of assessment and is inclusive of recommendations from a separate decarbonisation analysis.

Key Model Inputs:

- Fabric elements to PassivHaus standard
- Gas boiler efficiency (96%)
- Solar control glazing (g-value of 0.40)
- Maximal roof coverage with PV 222m2 PV panels (50 kWp, 22.6% efficient) and 68m² thin film (17kWp, 15.5% efficient)
- PIR absence/occupancy and daylight sensing lighting controls in perimeter rooms

Based on the above modelling inputs, the proposed building had 7.4% lower CO2 emissions than the notional building (Table 1).

Part L2A (2014, Wales) Building Emission Rate (BER) in kg CO ₂ /m ² /yr	Part L2A (2014, Wales) Target Emission Rate (TER) in kg CO ₂ /m ² /yr	% improvement over TER
4.3	12.7	66

Table 1: Stage 4 Part L2A Assessment results

BREEAM 2018 Ene 01 - Reduction of Energy Use and Carbon Emissions

This BREEAM credit calculates an Energy Performance Ratio (EPR NC) based the heating and cooling energy demand, primary energy consumption and total resulting CO2 emissions.

The number of credits is calculated by an online calculator provided by the BRE. In order to achieve BREEAM Excellent it is necessary to achieve at least 4 credits (EPR NC of at least 0.4). The proposed building as modelled for Part L compliance achieves 8 credits.

BREEAM 2018 Hea 04 - Thermal Comfort

The CIBSE TM52 thermal comfort analysis was updated in February 2020 in order to assess potential for natural ventilation, optimise passive design and assess the risk of overheating under present climate and future climate change.

The study showed that most perimeter rooms can be naturally ventilated with night purging via trickle vents. Treatment rooms, admin rooms and the café will be mechanically ventilated, and the high density Group Room and Seminar Room on the Ground Floor will be equipped with mechanical cooling to prevent overheating. Provisions will be made for increasing window free area and reducing the supply temperature of mechanically ventilated rooms in order to maintain thermal comfort under future climate change conditions.

	9.6	Decarbonisation
--	-----	-----------------

9.6 Decarbonisation

Introduction

A decarbonisation strategy was developed in response to the targets set out in the Welsh Government’s publication Prosperity for all: A low carbon Wales.

The objective of the decarbonisation strategy being to test the relative impacts of a number of fabric and MEP interventions on the CO2 emissions of the building, beyond the requirements of Welsh Approved Document (Wales) Part L 2014 or BREEAM Ene01.

The carbon factor for electricity currently prescribed in the Approved Document (Wales) Part L 2014 is more than 2.5 times higher than the actual carbon intensity of the National Grid. It is due to be revised in the 2020 edition of Approved Document (Wales) Part L, which at the time of writing, has yet come into force. As the CO2 emissions of the proposed building will be generated in the future, it was agreed with Shared Services to use the SAP10 carbon factor for electricity in our calculations to better reflect the CO2 emissions of the building once occupied. However, as Approved Document (Wales) Part L 2014 compliance is a legal requirement, only those interventions which did not negatively impact on Approved Document (Wales) Part L 2014 compliance were taken forward.

CO2 emissions savings were calculated relative to the overall CO2 emissions of the building, inclusive of small power (unregulated) electricity consumption. The assumed unregulated loads were taken from SBEM simulations and will be further reviewed / updated once an operational energy analysis has been completed.

Measures included within the current scheme

From an initial long list of decarbonisation interventions, three were incorporated into Stage 4 design. This represents a 24% overall CO2 reduction relative to the Stage 2 design which was Approved Document (Wales) Part L 2014 compliant and achieved 4 Ene01 credits.

Measure	Description
Maximise size and efficiency of roof PV array	222m ² of PV panels 22.6% efficient and 65m ² thin film mounted on plantroom roof 15% efficient
Upgrade opaque fabric performance	Thermal transmittance of roof, ground floor and external walls reduced to 0.15 W/m ² K
Triple glazing	Thermal transmittance of 0.85 W/m ² K (centre pane)

Measures considered but excluded due to cost / programme / technical compliance

Measure	Reason for exclusion
Replace gas boilers with air source heat pumps (ASHP)	ASHP does not work with proposed heat emitters, lack of plant space
Store weekend excess PV in batteries	Not economically viable due to additional cost and programme implications
Store weekend excess PV in hot water stores	Not economically viable due to additional cost and programme implications

Approved Decarbonisation Costs

The scheme has received the following cost approvals from Welsh Government associated with the decarbonisation measures and as such the measures have been adopted as part of the Stage 4 design and included within the SCP's Target Cost.

Measure	Cost
Maximise size and efficiency of roof PV array	£88,700
Upgrade opaque fabric performance	£40,000
Triple glazing	£30,000
Specialist design works	£2,000
	SUB-TOTAL
	£160,700
	VAT
	£32,140
	TOTAL
	£192,840

The costs included in the FBC for the Decarbonisation measures noted as incorporated into the scheme total £192,840 including VAT.

	9.7	Community Benefits
--	-----	--------------------

9.7 Community Benefits

Outline the agencies you will work with and the training initiatives you will utilise to achieve the TR&T targets.

Willmott Dixon have a vast experience working with Education and Training providers within the Cardiff area. The agencies will include but are not limited to the following:

- Job Centre Plus
- The BOSS Project
- School of Hard Knocks
- Communities for Work
- Inspire2Work
- The Wallich
- Y-Prentis Shared Apprentice Scheme
- Mencap
- Street Games
- Construction Youth Trust
- Princes Trust

How will you create the opportunities for the long term unemployed and disadvantaged individuals?

Within the Preconstruction period we will produce a demand plan that will identify all opportunities available throughout the project. Once the construction programme is finalised the demand plan will reflect actual start on site dates. This information will be disseminated to the local employment agencies named above.

We will work with Employment and Skills Project Co-ordinators and our preferred labour agency (Acorn, ITS, Rullion or Time4) to run open days at selected locations to create a database of local, unemployed persons to be utilised on site.

How will you advertise and notify job vacancies?

The local employment agencies mentioned above will have access to the demand plan once the construction programme has been confirmed. This ensures all vacancies are advertised in the local community.

How will you work with your sub-contractors and suppliers to ensure successful delivery of your proposed TR&T engagement activities?

Forecasting of TR&T requirements for all subcontractors will be issued at pre-construction/tendering stage. All requirements are placed into the final subcontract orders to ensure compliance in accordance with their terms of order.

How will you create opportunities and support for SMES to bid for work packages?

- Willmott Dixon’s Supply Chain Manager and Community Liaison Manager will liaise with Business Wales to engage with potential Supply Chain Partners whilst in pre-construction stage.
- We will host meet the contractor events where our existing SME’s will attend and meet smaller SME’s to establish opportunities.
- We will break down packages into suitable size’s for SME’s to participate.
- We will establish opportunities for supply/labour only packages

Prompt payment is required.

What assistance will you provide to further support your supply chain and how will you monitor sub-contractors payments?

- Willmott Dixon have their own Fair Payment Charter which is in line with Welsh Government’s Fair Payment Policy.
- Willmott Dixon’s Supply Chain Manager directly engages and supports our supply chain to understand their businesses and assist them to win work and grow their businesses.
- All in-house H&S training is offered to our supply chain partners.
- Willmott Dixon host forums with CITB, Sustainability Supply Chain School and Glamorgan Training Group to support our supply chain.

Please describe additional social benefits and what innovation will you bring to help achieve an impact on deprivation and to meet socio-economic needs for this project.

Willmott Dixon have developed an industry leading Building Lives Academy mentoring programme that focusses on providing opportunities to people furthest away from the labour market. As part of the project we will implement an academy which offers candidates a level 1 in H&S, a CSCS card and work experience along with assisting in softer skills such as CV writing and interview techniques.

Please describe your proposal for community and education initiatives that you will undertake on this project.

Community
Willmott Dixon recognises that early engagement with the local community is key to successful delivery of any scheme. Our Community Liaison Manager, Kimberley Sweet-Roberts, will facilitate a Social Value Workshop and establish a Stakeholder Engagement Forum to establish and maintain good relationships. The workshop will be held at pre-construction stage to highlight where the project can maximise the impact on the local community. The outcomes from the workshop will ascertain a tailored community engagement plan that the project will deliver.

Education
Our extensive School Engagement Programme has been developed and is delivered by our in house education professionals, in line with the current National Curriculum and has a heavy focus on STEM activities. We will engage with local schools including, but not limited to St Teilo’s, Llanedeyrn Primary, Marlborough Infant/Junior, Springwood Primary, Bryn Celyn Primary and Glyncoed Infant/Junior school.

Who within your organisation has responsibility for the delivery of the community benefits programme?

Overall responsibility for the delivery of Community Benefits will be with Ian Jones, Director of Operations, with support from Kimberley Sweet-Roberts, Community Liaison.

9.7 Community Benefits

Community benefits and Procurement

This information will be monitored on a quarterly and annual basis, and figures are based on per £M invested in the Contract.

A	B	C	D	E	F	G	H
Target area	Metric	Proposal based on Column F	Example	Reporting Timescale	Benchmark Minimum Value (per £M)	Measure Definition	Financial Consequence for Non-delivery
Jobs created (NEET/LT Unemployed)	Person weeks per £m invested	312	As definition of person and weeks	Quarterly	52	weeks	£463.61 per week
Training (including graduates, work placements, pupil placements)	Person weeks of training provided per £m invested (included in the overall person weeks per £m)	180	Welsh graduate engineer sponsored; Welsh year out student; Work experience	Quarterly	30	weeks	£349.28 per week
Apprenticeships	Number of apprentices per £m invested (included in the overall person weeks per £m)	6	Relating the number of weeks for individuals who have been employed; Promote use shared apprentice schemes.	Quarterly	1	apprentices	£207.20 per week
School Engagements (STEM)	Hours donated per £m invested	60	Wider team involvement - interviews, careers fairs.	Quarterly	10	hours	£48.00 per hour
Community - Events	Community Initiatives per project	2	e.g. Work with local scout group to repaint hall	Annual	2	e.g.2 minimum initiatives per project	£1,000 per event
Community - newsletter	Community newsletters per project	2	Letter sent out to local residents	Annual	2	e.g.2 minimum newsletters per project	£500 per newsletter
Jobs created (NEET/LT Unemployed)	Number of FTE £m invested (based on 52 weeks provision)	6	Relating to the number of weeks for individuals who have been employed i.e.1 person employed for 52 weeks.	Quarterly	1	FTE persons	Nil Consequence
School Engagements (STEM)	Number of pupil interactions per £m invested	180	School assemblies or individual lessons. Assembly with 70 children = 70 interventions. Maths lesson with 30 children = 30 interventions.	Quarterly	30	interactions	Nil Consequence
Labour Force	Percent of workforce from postcode	30	Use postcode of the project and measure visits, e.g. SA	Annual	30	e.g.30% minimum	Nil Consequence
Labour Force	Percent of workforce from Wales	80	Measure visits to site	Annual	60	e.g.60% minimum	Nil Consequence
WG measurement Tool	Complete WG measurement Tool	1	Complete on completion of the project and annually if contract more than 12 months in duration.	Annual	1		Nil Consequence
Supply chain initiatives	Percent spend in Wales per project	60	Value of contract and location of supplier.e.g. CBME electrical contractor Cardiff postcode £100,000 contract value expressed as percentage.	Annual	60	per contract duration	Nil Consequence
Supply chain initiatives	Number and type of materials produced in Wales	2	e.g. Welsh steel, Welsh slate	Annual	2	e.g.60% minimum, per spend per contract value	Nil Consequence

9.7 Community Benefits

Supply chain initiatives	Value of materials	10m2	£ per tonne (Steel), £/ per metre squared (slate) etc.	Annual	10m2	e.g. 2 number of supply chain initiatives	Nil Consequence
Supply chain initiatives	Volume of materials	25m2	Tonnage (Steel), number of metres squared (slate), etc.	Annual	25m2	per £ value of the material supplied	Nil Consequence
Supply chain initiatives	Percent Welsh subcontractors per project	60	Total number of contractors used with welsh postcode expressed as percentage	Annual	60	per project	Nil Consequence
Supply chain initiatives	Number of supply chain engagements per project	2	Meet the buyer event	Annual	2	per project	Nil Consequence
Supply chain initiatives	Use of Sell 2 Wales to advertise opportunities	3	Advise opportunity for subcontractors through sell2wales	Annual	3	per opportunity as a package, per project	Nil Consequence
Fair payment	Payment within 21 days by client	Agreed	Audit percentage of payments	Annual		client response	Nil Consequence
Fair payment	Payment to subcontractors within 28 days	Agreed	Audit percentage of payments	Annual		contractor response	Nil Consequence
Environmental	Percent waste diverted from landfill	90	Measured from waste transfer advice note	Annual	90	e.g. 85% minimum	Nil Consequence
Environmental	Amount of waste produced tonnes/£m	7.5	Measured from waste transfer advice note	Annual	7.5	tonnes (based on project £6M total)	Nil Consequence

	9.8	CDM
--	-----	-----

9.8 CDM (Executive Summary)

Hazard Elimination and Management Schedule (HEMS)

Introduction

Design proposals and compliance with Construction (Design and Management) Regulations 2015 (CDM).

A key duty for designers under CDM is to eliminate risks to health and safety so far as is reasonably practicable. This means that hazards should be eliminated when the costs, effort and compromise are proportional to the risk.

This process of risk management has been adopted by the design team from the outset of appointment to the project and will continue into RIBA Stage 5 to remove and or reduce all foreseeable risk associated to the project in terms of design, construction and use.

Compliance with the Principles of Prevention

In assessing and managing the risks, CDM requires designers to adopt the General Principles of Prevention in order of priority as follows:

- a) Avoid risks;
- b) Evaluate risks that cannot be avoided;
- c) Combat the risks at source;
- d) Adapt the work to the individual;
- e) Adapt to technical progress;
- f) Replace the dangerous by the non-dangerous or less dangerous;
- g) Develop a coherent prevention policy;
- h) Give collective protective measures over individual protective measures; and
- i) Give appropriate instructions to employees.

The Principles of Prevention have been considered and proactively applied during the design process to date and recorded within the HEMS document.

See Section 15 - Appendix 12 for the CDM (Risk Register)

Capital Cost and Projected Cashflows

- 10.1 Introduction
- 10.2 FBC Forms
- 10.3 Inflation Calculations
- 10.4 Whole Life Cycle Cost Assessments

	10.1	Introduction
--	------	--------------

10.1 Introduction

Please find enclosed in this section the FBC Cost Forms for the preferred Option (Option 4).

FBC 1

Health Board	:	Cardiff and Vale University Health Board
Hospital/Site	:	Maelfa, Cardiff
Project Title	:	Maelfa Wellbeing Hub
Project No	:	1
Prepared by	:	Gleeds
Date	:	15th July 2020

BASIS OF ESTIMATING

~~Approximate estimates/ quotations/ tenders/ other~~	Target Cost
BIS PUBSEC Index Level FP ₁ :	274
Equipment cost level:	N/A
Location factor:	0.97
Proposed start on site:	Nov-20
Proposed completion date:	Sep-22

Costs include all impacts arising from working practices required to comply with current Covid-19 Regulations

Full Business Case Capital Cost Summary

	Costs managed by								
	SCP			Trust					
	Net	VAT	Gross	Net	VAT	Gross	Net	VAT	Gross
Works Cost									
	8,672,310	1,734,462	10,406,772				8,672,310	1,734,462	10,406,772
Fees:									
<u>SCP:</u>									
Constructor -pre-construction	235,026	47,005	282,031				235,026	47,005	282,031
Project Manager	0	0	0				0	0	0
Health Planner	19,370	3,874	23,244				19,370	3,874	23,244
Architect	544,683	108,937	653,619				544,683	108,937	653,619
Civil and Structural Engineer	119,697	23,939	143,636				119,697	23,939	143,636
Building Services Engineer	183,728	36,746	220,474				183,728	36,746	220,474
Principal Designer	13,410	2,682	16,092				13,410	2,682	16,092
Fire & Acoustic Consultants	38,250	7,650	45,901				38,250	7,650	45,901
BREEAM	22,934	4,587	27,520				22,934	4,587	27,520
Building Services Engineer - pre-construction	13,364	2,673	16,036				13,364	2,673	16,036
Other	126,027	25,205	151,233				126,027	25,205	151,233
<u>Trust:</u>									
Project Manager				155,000	31,000	186,000	155,000	31,000	186,000
Supervisor				140,500	28,100	168,600	140,500	28,100	168,600
Trust Cost Advisor				62,500	12,500	75,000	62,500	12,500	75,000
Project Director				0	0	0	0	0	0
In-house Project Sponsorship				89,223	17,845	107,068	89,223	17,845	107,068
Financial Vetting				0	0	0	0	0	0
Audit				15,000	3,000	18,000	15,000	3,000	18,000
Specialist Advisors				79,500	15,900	95,400	79,500	15,900	95,400
Non-works Costs									
Land purchase and associated fees				20,000	4,000	24,000	20,000	4,000	24,000
Statutory and Local Authority charges				15,000	3,000	18,000	15,000	3,000	18,000
Planning and Building Control fees				22,000	4,400	26,400	22,000	4,400	26,400
Other costs				485,476	97,095	582,571	485,476	97,095	582,571
Commissioning costs				0	0	0	0	0	0
Decommissioning costs				0	0	0	0	0	0
Equipment Costs									
Group 2				14,900	2,980	17,880	14,900	2,980	17,880
Group 3				145,800	29,160	174,960	145,800	29,160	174,960
Group 4				0	0	0	0	0	0
Sundries				0	0	0	0	0	0
Contingencies:									
Quantified risk contingency	250,000	50,000	300,000	308,000	61,600	369,600	558,000	111,600	669,600
Covid-19 contingency				258,000	51,600	309,600	258,000	51,600	309,600
Vat:									
Vat Recovery							£0	-£88,685	-£88,685
Anticipated Capital Cost Outturn	10,238,799	2,047,760	12,286,559	1,810,899	362,180	2,173,079	12,049,698	2,321,255	14,370,952

Full Business Case

Summary of Trust Costs

	Net	VAT	Gross
Trust Fees			
Project Manager	155,000	31,000	186,000
Trust Cost Advisor	140,500	28,100	168,600
Supervisor	62,500	12,500	75,000
Project Director		0	0
In-house Project Sponsorship	89,223	17,845	107,068
Financial Vetting		0	0
Audit	15,000	3,000	18,000
Specialist Advisors	79,500	15,900	95,400
Total Cost of Trust Fees	541,723	108,345	650,068
Non-works costs:			
Land purchase costs and associated legal fees	20,000	4,000	24,000
Statutory and Local Authority charges	15,000	3,000	18,000
Planning and Building Control fees	22,000	4,400	26,400
Other	485,476	97,095	582,571
Total Cost of Trust Fees	542,476	108,495	650,971
Equipment Costs:			
Group 2	14,900	2,980	17,880
Group 3	145,800	29,160	174,960
Group 4	0	0	0
Sundries	0	0	0
Total Cost of Trust Fees	160,700	32,140	192,840
Contingencies:			
Quantified risk contingency	308,000	61,600	369,600
Covid-19 contingency	258,000	51,600	309,600
Trust Contingency Provision	566,000	113,200	679,200
Total Trust Anticipated Out-turn Costs	1,810,899	362,180	2,173,079

Full Business Case

Summary of Supply Chain Costs

	Net	VAT	Gross
Building ref: 1	6,861,534	1,372,307	8,233,841
Building ref: 2	0	0	0
Total Cost of Buildings	6,861,534	1,372,307	8,233,841
Total Cost of External Works	1,810,776	362,155	2,172,931
Total Cost of Works	8,672,310	1,734,462	10,406,772
SCP Fees:			
Constructor - pre-construction	235,026	47,005	282,031
Project Manager	0	0	0
Health Planner	19,370	3,874	23,244
Architect	544,683	108,937	653,619
Civil and Structural Engineer	119,697	23,939	143,636
Building Services Engineer	183,728	36,746	220,474
Principal Designer	13,410	2,682	16,092
Fire & Acoustic Consultants	38,250	7,650	45,901
BREEAM	22,934	4,587	27,520
Building Services Installer - pre-construction	13,364	2,673	16,036
Other	126,027	25,205	151,233
Total Cost of SCP Fees	1,316,489	263,298	1,579,787
SCP Quantified risk provision	250,000	50,000	300,000
Total SCP Anticipated Target Out-turn Cost	10,238,799	2,047,760	12,286,559

Wellbeing Hub @ Maelfa

Full Business Case

Building ref: Maelfa Wellbeing Hub		GFA: 2047 m2				
Elements	Total Cost of element	£/m2 GFA	EUQ		EUR Rate	Element %
1A Substructure	492,046	240.37	1,034	m2	475.87	7.17%
<u>Superstructure</u>						
2A Frame	239,354	116.93	2,047	m2	116.93	3.49%
2B Upper Floors	106,275	51.92	984	m2	108.00	1.55%
2C Roof	264,210	129.07	1,137	m2	232.37	3.85%
2D Stairs	69,206	33.81	3	No	23,068.80	1.01%
2E External walls	689,664	336.91	1,229	m2	560.98	10.05%
2F Windows and external doors	406,631	198.65	254	m2	1,603.44	5.93%
2G Internal walls and partitions	447,080	218.41	4,319	m2	103.51	6.52%
2H Internal doors	61,555	30.07	107	No	575.28	0.90%
Superstructure sub-total	2,283,975	1,115.77				33.29%
<u>Internal Finishes</u>						
3A Wall finishes	85,360	41.70	4,319	m2	19.76	1.24%
3B Floor finishes	173,918	84.96	1,878	m2	92.61	2.53%
3C Ceiling finishes	99,631	48.67	1,878	m2	53.05	1.45%
Internal Finishes sub-total	358,910	175.33				5.23%
4 Fittings	130,945	63.97	1	Item	130,944.86	1.91%
<u>Services</u>						
5A Sanitary appliances		0.00		No	0.00	0.00%
5B Services Equipment		0.00		m2	0.00	0.00%
5C Disposal installations		0.00		No	0.00	0.00%
5D Water installations		0.00		No	0.00	0.00%
5E Heat Source		0.00		kw	0.00	0.00%
5F Space heating and air treatment		0.00		m3	0.00	0.00%
5G Ventilating systems	996,162	486.65	1	m3	996,162.44	14.52%
5H Electrical installations	967,695	472.74	1	No	967,694.86	14.10%
5I Gas installations		0.00		No	0.00	0.00%
5J Lift and conveyor installations	77,605	37.91	1	No	77,605.07	1.13%
5K Protective installations		0.00		m2	0.00	0.00%
5L Communications installations		0.00		No	0.00	0.00%
5M Special installations		0.00		m2	0.00	0.00%
5N Builder's work in connection		0.00		m2	0.00	0.00%
5O Builder's attendance		0.00		m2	0.00	0.00%
Services sub-total	2,041,462	997.29				29.75%
Net building cost	5,307,339	2,592.74				77.35%
Preliminaries	1,142,252	558.01				16.65%
	6,449,590	3,150.75	0		0.00	94.00%
SCP Fee 6.39%	411,944	201.24				
TOTAL COST OF BUILDING £	6,861,534	3,352.00				100.00%

Full Business Case

Elements	Total Cost of element	£/m2 GFA	EUQ		EUR Rate	Element %
EXTERNAL WORKS						
6A <u>Site works</u>						
6A1 Demolitions and site clearance	80,124	39.14	1	Item	80,124.17	4.42%
6A2 Preparatory earthworks to form new contours	162,177	79.23	10,665	m2	15.21	8.96%
6A3 Roads and associated footways	0	0.00		m2	0.00	0.00%
6A4 Vehicle parks	286,139	139.78	3,033	m2	94.34	15.80%
6A5 Paths and paved areas	16,592	8.11	599	m2	27.70	0.92%
6A6 Retaining walls	0	0.00	0	m2	0.00	0.00%
6A7 Land drainage	91,353	44.63	309	m	295.64	5.04%
6A8 Soft landscaping	67,298	32.88	4,417	m2	15.24	3.72%
6A9 Gates and entrances	577	0.28	3	m2	192.40	0.03%
6A10 Fencing, walling and hedges	22,033	10.76	55	m	400.60	1.22%
6A11 Site fittings and furnishings	60,290	29.45	1	Item	60,289.57	3.33%
6A12 MUGA Play Area	100,160	48.93	272	m2	368.23	5.53%
6A13 Temporary Car Parking	112,090	54.76	1,223	m2	91.65	6.19%
6B <u>Drainage</u>						
6B1 Surface water	92,492	45.18	394	m	234.75	5.11%
6B2 Foul	76,990	37.61	205	m	375.56	4.25%
6B3 Sewage treatment	0	0.00		Item	0.00	0.00%
6C <u>Engineering Services</u>						
6C1 Water main	3,995	1.95	1	Item	3,994.83	0.22%
6C2 Fire mains	0	0.00		m	0.00	0.00%
6C3 Heating mains	0	0.00		m	0.00	0.00%
6C4 Gas mains	2,136	1.04	1	Item	2,135.64	0.12%
6C5 Electrical mains	0	0.00		m	0.00	0.00%
6C6 Site lighting	54,375	26.56	1	Item	54,374.76	3.00%
6C7 Other mains and services	0	0.00		m	0.00	0.00%
6C8 BWIC	130,004	63.51	1	Item	130,004.24	7.18%
6C9 Builders attendance	0	0.00			0.00	0.00%
6D <u>Minor Buildings</u>						
6D1 Minor building works	0	0.00	0	m2	0.00	0.00%
6D2 Alterations to existing buildings	41,797	20.42	64	m2	653.07	2.31%
	1,400,620	684.23				77.35%
Preliminaries	301,443	147.26				16.65%
	1,702,063	831.49				94.00%
SCP Fee 6.39%	108,713	53.11				6.00%
TOTAL COST OF EXTERNAL WORKS £	1,810,776	884.60				100.00%

Wellbeing Hub @ Maelfa

PROJECT CASHFLOW FORECAST

Proposed start on site: Nov-20
Proposed completion date: Sep-22

	Year	0	1	2	3	4	5	6	Total
	Financial year	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	
Works Cost		0	0	1,962,802	6,314,037	645,471	0	0	8,922,310
Fees		280,526	646,369	422,802	369,038	119,536	19,941	0	1,858,212
Non-works Costs		22,687	35,307	76,234	343,248	65,000	0	0	542,476
Equipment Costs		0	0	0	120,700	40,000	0	0	160,700
Quantified risk provision		0	0	32,000	222,425	47,674	499	5,402	308,000
Covid 19 Risk		0	0	16,000	110,000	132,000	0	0	258,000
Sub-total		303,213	681,677	2,509,838	7,479,448	1,049,681	20,440	5,402	12,049,698
Gross VAT		60,443	136,335	498,768	1,473,890	183,536	4,287	1,080	2,358,339
Vat on Covid 19		0	0	3,200	22,000	26,400	0	0	51,600
Less: Reclaimable VAT		8,297	18,555	25,649	21,225	12,068	2,891	0	88,685
Net VAT		52,145	117,780	476,319	1,474,664	197,868	1,397	1,080	2,321,254
Total		355,358	799,457	2,986,157	8,954,112	1,247,548	21,836	6,483	14,370,952

CASHFLOW FORECAST OF FUNDING SOURCES

Proposed start on site: Nov-20
Proposed completion date: Sep-22

Funding source: Department for Health and Social Services: Welsh Assembly Government

	Year	0	1	2	3	4	5	6	Total
	Financial year	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	
Works Cost		0	0	1,782,083	6,314,037	645,471	0	0	8,741,591
Fees		280,526	646,369	394,789	369,038	119,536	19,941	0	1,830,199
Non-works Costs		22,687	35,307	72,059	343,248	65,000	0	0	538,301
Equipment Costs		0	0	0	120,700	40,000	0	0	160,700
Quantified risk provision		0	0	21,397	222,425	47,674	499	5,402	297,397
Covid 19 Risk		0	0	16,000	110,000	132,000	0	0	258,000
Sub-total		303,213	681,677	2,286,328	7,479,448	1,049,681	20,440	5,402	11,826,188
Gross VAT		60,443	136,335	454,066	1,473,890	183,536	4,287	1,080	2,313,637
Vat on Covid 19		0	0	3,200	22,000	26,400	0	0	51,600
Less: Reclaimable VAT		8,297	18,555	20,047	21,225	12,068	2,891	0	83,083
Net VAT		52,145	117,780	437,219	1,474,664	197,868	1,397	1,080	2,282,154
Total		355,358	799,457	2,723,547	8,954,112	1,247,548	21,836	6,483	14,108,342

Funding source: Cardiff City Council

	Year	0	1	2	3	4	5	6	Total
	Financial year	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	
Works Cost				180,719					180,719
Fees				28,013					28,013
Non-works Costs				4,175					4,175
Equipment Costs				0					0
Quantified risk provision				10,603					10,603
Sub-total		0	0	223,510	0	0	0	0	223,510
Gross VAT				44,702					44,702
Less: Reclaimable VAT				5,602					5,602
Net VAT		0	0	39,100	0	0	0	0	39,100
Total		0	0	262,610	0	0	0	0	262,610

Funding source:

	Year	0	1	2	3	4	5	6	Total
	Financial year	200*/**	200*/**	200*/**	200*/**	200*/**	200*/**	200*/**	
Works Cost									0
Fees									0
Non-works Costs									0
Equipment Costs									0
Quantified risk provision									0
Sub-total		0	0	0	0	0	0	0	0
Gross VAT									0
Less: Reclaimable VAT									0
Net VAT		0	0	0	0	0	0	0	0
Total		0	0	0	0	0	0	0	0

Wellbeing Hub @ Maelfa

Project Title Maelfa Wellbeing Hub

Functional Content Comparison

Ref No	Accommodation	OBC Functional size	FBC Functional size	Change	Reason for change
	Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
	00 Ground Floor				
	Entrance Lobby	15.94	16.02	0.08	
	Circulation	70.51	38.11	-32.4	Circulation reduced due to adding Café and Café seating
	Cafe Seating		17.55		Added during Stage 4 at Client request
	Information Area	12.82	13.13	0.31	
	Pushchair Park	8.51	8.31	-0.2	
	Waiting (48 + 4 accessible)	56.59	58.74	2.15	Area increased to include circulation upto Stair 2
	Stair 1	11.24	11.35	0.11	
	Lift	5.82	5.82	0	
	Circulation	98.47	103.81	5.34	
	Wellbeing Reception	18.16	16.53	-1.63	
	WC	3.06	3.04	-0.02	
	WC	3.06	3.03	-0.03	
	Acc. WC	4.84	4.8	-0.04	
	Interview	9.46	9.46	0	
	GP's Office	52.09	51.96	-0.13	
	GP Deputy Manager	8.31	8.39	0.08	
	Elec. Riser	1.6	1.6	0	
	Mech. Riser	1.56	1.55	-0.01	
	Treatment 1	20	20	0	
	Treatment 2	19.98	19.98	0	
	Consulting1	15	15	0	
	Consulting 2	14.99	14.99	0	
	Consulting 3	14.98	14.98	0	
	Consulting 4	15	15	0	
	Consulting 5	14.97	14.98	0.01	
	GP Store		6.13		Added following requested for more storage by GP's.
	Dirty Utility	8.08	6.76	-1.32	Dirty Utility reduced in size following GP request.
	Spec WC Ind.	4.84	4.8	-0.04	
	Staff WC Ind.	4.84	4.8	-0.04	
	GP Room	12.85	12.85	0	
	Circulation	39.43	39.04	-0.39	
	Consulting 6	15	15	0	
	Consulting 7	14.99	14.99	0	
	Circulation	9.9	10.77	0.87	
	Elec. Riser	1.98	1.99	0.01	
	Mech. Riser	1.98	1.99	0.01	
	Gas Riser	0.13	0.1	-0.03	
	Consulting 8	15.14	15	-0.14	
	Consulting 9	14.96	14.96	0	
	Consulting 10	15.14	15	-0.14	
	Consulting 11	13.87	13.86	-0.01	
	Midwives Store	13.8	13.8	0	
	District Nurse Store	21.53	20.79	-0.74	
	Circulation	22.18	21.73	-0.45	
	Stair 3	19.97	19.95	-0.02	
	Seminar (24 places)	25.68	25.67	-0.01	
	Group Room	76.54	76.78	0.24	
	Cleaners	5.19	4.65	-0.54	Cleaners moved to accommodate additional GP store.
	Group Room St	11.9	11.9	0	
	Baby Room		5.19		Nappy & Feeding rooms combined into Baby Room.
	WC	4.76	5.25	0.49	Relocated opposite Group Room
	Measurement	7.47	7.31	-0.16	
	Changing Places	12.56	12.44	-0.12	
	Circulation	36.66	35.61	-1.05	
	Stair 2	20.17	20.64	0.47	
	Kitchenette	7.49	7.38	-0.11	
	Cafe Servery		19.33		Added during Stage 4 following C&V UHB request.
	Cafe Store		0.98		Added during Stage 4 following C&V UHB request.
	Room area total	955.99	975.57	19.58	

Project Title Maelfa Wellbeing Hub

Functional Content Comparison

Ref No	Accommodation	OBC Functional size	FBC Functional size	Change	Reason for change
	Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
	01 First Floor				
	Circulation	71.89	73.52	1.63	
	Waiting (30 + 2 accessible)	39.55	33.55	-6	
	Clerk Room	13.02	12.09	-0.93	
	WC	3.06	3.04	-0.02	
	WC	3.06	3.03	-0.03	
	Acc. WC	4.84	4.8	-0.04	
	WC	4.76	4.68	-0.08	
	Lift	5.82	5.82	0	
	Stair 1	18.17	16.85	-1.32	
	Podiatry St	10.99	10.99	0	
	Podiatry Clinic	15.98	16	0.02	
	Consulting 1	13.99	13.99	0	
	Treatment 1	16	16	0	
	Treatment 2	15.98	16	0.02	
	Interview 1	10.62	10.62	0	
	Interview 2	10.58	10.58	0	
	Interview 3	10.62	10.64	0.02	
	Equip. St	8.96	8.97	0.01	
	General St	11.5	11.5	0	
	Consulting 2	14	14	0	
	Stair 2	19.89	20.09	0.2	
	IT Hub	18.83	18.5	-0.33	
	Elec. Riser	1.6	1.6	0	
	Mech. Riser	1.56	1.55	-0.01	
	Cleaners	5.19	4.99	-0.2	
	Dirty Utility	8.08	7.9	-0.18	
	Spec. WC Ind.	4.84	4.8	-0.04	
	Staff WC Ind.	4.84	4.8	-0.04	
	Clean Utility	8.73	8.62	-0.11	
	Store	9.54	9.54	0	
	Store	9.58	9.25	-0.33	
	Circulation	60.45	60.09	-0.36	
	Consulting 3	13.97	13.98	0.01	
	Consulting 4	14	14	0	
	Near Patient Testing	10.96	10.96	0	
	Circulation	9.9	10.74	0.84	
	Elec. Riser	1.98	1.99	0.01	
	Mech. Riser	1.98	1.99	0.01	
	Gas Riser	0.13	0.13	0	
	Communal Changing	15	14.9	-0.1	
	Staff Acc WC & Shower	7.5	7.5	0	
	Staff Rest	34.02	33.9	-0.12	
	Staff WC	2.74	2.75	0.01	
	Staff WC	2.74	2.76	0.02	
	Circulation	29.87	29.43	-0.44	
	Stair 3	19.59	19.65	0.06	
	Admin. Area (15 spaces)	53.22	53.16	-0.06	
	Admin. Area (13 spaces)	49.23	49.16	-0.07	
	Interview / Quiet Rm	11.06	10.9	-0.16	
	Interview / Quiet Rm	11.06	10.93	-0.13	
	Photocopy Rm	6.5	6.4	-0.1	
	GP Manager	11.29	11.26	-0.03	
	GP's Meeting Room	16.71	16.63	-0.08	
	Circulation	36.66	36.64	-0.02	
	Staff WC	2.71	2.7	-0.01	
	Room area total	819.34	810.86	-8.48	
	RF Roof				
	Stair 2	12.8	13	0.2	
	Lobby	3.46	3.46	0	
	Plant (Elec)	25.03	25.64	0.61	
	Plant (Mech)	72.28	73.82	1.54	
	Plant (Water)	32.28	34.92	2.64	
	Room area total	145.85	150.84	4.99	
	00 Ground Floor	955.99	975.57	19.58	
	01 First Floor	819.34	810.86	-8.48	
	RF Roof	145.85	150.84	4.99	
		1921.18	1937.27	16.09	

Wellbeing Hub @ Maelfa

KEY PROGRAMME DATES

Planned @ SOC	Actual
Submission of SOC to WAG	
WAG Approval	
Submission of OBC to WAG	31 May 2019
WAG Approval	10 December 2019
Submission of FBC to WAG	31 July 2020
	Forecast @ FBC
WAG Approval	26 October 2020
Agreement of Target Cost	25 June 2020
Start on Site	16 November 2020
Handover of Wellbeing Centre	09 March 2022
Completion of All Works	01 September 2022
Opening of Facility	28 March 2022
Project Closure	01 September 2023

Project Title Maelfa Wellbeing Hub

Non-Works costs		£
Land purchase and associated legal fees	Legal Fees Only	20,000
Statutory and Local Authority charges, including SAB fees		15,000
Planning and Building Control fees		
Planning fees		17,000
Building Control fees		5,000
Surveys		
Topographical and drainage		18,761
Ecology and associated BREEAM input		16,035
Arbocultural		1,978
Geotechnical site investigation including UXO attendance		20,204
Existing Health Clinic and temporary car park sites	Incl above	0
S185 Drainage application fees and design		4,250
S104 Agreements		
S106 Agreements		
S278 Works etc.:		
S278 Highway Auth Fees (Inspection)		
S278 Legal Fees (Highways)		10,000
Highway Safety Audits		
Traffic monitoring post completion		
Highways works		
Highway signage design fees		incl
Highway Signage Works		5,000
Incoming Services meters		
Electricity		500
Gas		500
Water		300
Incoming Services (Stats quotes only)		
Electricity		87,500
Sub-station		Incl
Gas		3,250
Gas supply to Hub, incl electrical conn to meter		3,000
Water		10,000
IT/phone supplies		31,000
Move BT Telegraph pole		2,750
Drainage infrastructure		
charges/repairs		5,000
Utilities usage charges during Commissioning		
Electricity		500
Gas		500
Water		500
Medical gases		
Bottles provision and storage	Not required	0
Pharmacist costs		0

Wellbeing Hub @ Maelfa

Project Title	Maelfa Wellbeing Hub
Non-Works costs	£
Decanting costs from existing Health Centre	25,000
Decommissioning costs of existing Health Centre	5,000
Commissioning costs of new Health Centre	10,000
CVUHB IT costs	
Data cabling and the like	0
Equipment, wi-fi points and the like and the like	39,000
Patient call equipment	0
NWIS Practice IT Costs	25,000
Telephone system	11,448
Local telephone lines	£1,000.00 installation
Telephone Handsets	£100.00 (approximate cost per IP handset)
	7,500
CCTV Installation	5,000
Asbestos survey & analyst costs	0
Asbestos Removal Costs	45,000
Welsh translation costs	1,000
Building signage incl design fees	20,000
Allowance for art	20,000
Costs associated with temporary car park	2,000
Statutory Notice and Publicity/consultation charges	25,000
Party Wall Agreement	5,000
Other Costs	5,000
BREEAM Accreditation	12,000
TOTAL	£ 542,476

Project Title

Maelfa WBC

RECOVERABLE VAT CALCULATION

	a	b	c	d
	Cost Net of VAT	VAT at 20% (ie prior to recovery)	Percentage recoverable (% of col b)	Recoverable VAT (col b x col c)
	£	£	%	£
Works Cost	14,852,620	2,970,524	0.25%	7,426
Fees	2,366,186	473,237	17%	81,258
Non-works Costs	2,336,691	467,338	0%	0
Equipment Costs	295,000	59,000	0%	0
Contingencies	1,985,050	397,010	0%	0
Total			£	88,685

Vat on Fees

Trust

			Recoverable
		20%	75%
a. Project Manager	155,000	31,000	23,250
b. Trust Cost Advisor	140,500	28,100	21,075
c. Supervisor	62,500	12,500	9,375
d. Project Director		0	0
e. In-house Project Sponsorship	89,223	17,845	13,383
f. Financial Vetting		0	0
g. Audit	15,000	3,000	2,250
h. Specialist Advisors	79,500	15,900	11,925
	541,723	108,345	81,258

Wellbeing Hub @ Maelfa

Maelfa Wellbeing Hub	Cardiff and Vale UHB	FBC
Project Title: Maelfa WBC		
Fees		£
NEC Supervisor fees	Incl sep	
Other fees		
Capital Audit	15,000	
Business Case Writer	45,000	
Specialist Advisers		
District Valuer	4,000	
VAT Advisor	10,000	
Misc legal, stat consents, etc	Incl sep	
Planning Consultant	20,500	
	94,500	

10.3 Inflation Calculations

The Wellbeing Hub@Malefa construction contract is under 2 years in duration and therefore a fixed price contract.

An allowance for inflation has been made within the SCP's Target Cost to cover works completed during the construction period.

	10.4	Whole Life Cycle Cost Assessments
--	------	-----------------------------------

10.4 Whole Life Cycle Cost Assessments

gleeds

Maelfa Wellbeing Hub

OBC Life Cycle Option Costs

29/05/2020

**For: Cardiff and Vale University
Health Board**

Gleeds Cost Management, Cardiff

Project: CFCM0106

Version: 2

CONTENTS

1	INTRODUCTION	4
2	LIFE CYCLE COST SUMMARY	5
2.1	Summary Pricing Notes	5
2.2	Summary Table	6
2.3	60 Year Smoothed Cashflows	7
3	ASSUMPTIONS AND EXCLUSIONS	8
4	ANNUAL AND CUMULATIVE CASHFLOW GRAPHS	11
4.1	Smoothed Graph	11
4.2	Capital Cost Breakdown	12
4.3	Life Cycle Cost Breakdown	13
4.4	Whole Life Costs	14
4.5	Elemental Cost Comparison – Capital and Life Cycle Costs	15

Document control

Project Name: OBC Life Cycle Option Costs				Project No.: CFCM0106	
Date of Issue: 29/05/2020				Version No.: 2	
Reason for Issue:		To provide Final Business Case (FBC) Life Cycle Costs.			
Document Author: Sean McCaffrey		Grade: Associate Director			
Signature: 					
Contributors: Ian Bailey, Sean McCaffery, Luke Sullivan					
Approved by:		Nigel Watkins		Grade: Director	
Signature: 					
Security Classification:		n/a			
Distribution to: Cardiff and Vale University Health Board					
Related project documents:					

NOT TO BE DISTRIBUTED WITHOUT EXPRESS WRITTEN PERMISSION FROM THE AUTHOR

1 INTRODUCTION

Project and Appointment

1. Gleeds have been appointed by Cardiff and Vale University Health Board to provide Final Business Case Life Cycle Costs for the provision of a new Wellbeing Hub.
2. This report considers the proposed building elements of the wellbeing hub in its analysis.
3. The lifecycle of the elements is based on BCIS Replacement Periods.
4. As requested by the Health Board, cleaning and utilities as annual operational costs are separated from the Life Cycle Costs.
5. The assumptions and exclusions upon which the calculations are based are detailed in section 3.
6. 60-year cashflow graphs are included in section 4.

2 LIFE CYCLE COST SUMMARY

2.1 Summary Pricing Notes

- a) Costs are at 2Q2020 rates with no allowance for inflation;
- b) The costs included are real costs, i.e future costs are not discounted to net present values (NPV);
- c) The exact year of replacement is unknown. To reflect this, costs have been smoothed over a five-year period:

-2 Years	-1 Year	Year	+1 Year	+2 Years
10%	20%	40%	20%	10%

Figure 2

- d) Allowances have not been included for annual Cleaning and Utilities; and
- e) Please refer to section 3 for further clarifications.

2.2 Summary Table

Option	Description	LCC	GIFA (m²)	£/m²	£/m²/pa	Construction Capital Cost	% LCC of Capital Cost
1.1	Maelfa Wellbeing Hub	£9,405,020	2,047	4,595	77	£6,717,824	140%

2.3 60 Year Smoothed Cashflows

Option	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Sub-total
1	2,900	2,900	2,900	2,900	82,400	2,900	2,900	2,900	2,900	653,500	2,900	24,200	2,900	2,900	404,500	1,196,500
Option	Year 16	Year 17	Year 18	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	Year 26	Year 27	Year 28	Year 29	Year 30	Sub-total
1	2,900	2,900	2,900	2,900	1,423,900	2,900	2,900	2,900	24,200	805,300	2,900	2,900	2,900	2,900	1,139,200	4,621,000
Option	Year 31	Year 32	Year 33	Year 34	Year 35	Year 36	Year 37	Year 38	Year 39	Year 40	Year 41	Year 42	Year 43	Year 44	Year 45	Sub-total
1	2,900	2,900	2,900	2,900	494,900	24,200	2,900	2,900	2,900	1,536,500	2,900	2,900	2,900	2,900	284,300	6,992,800
Option	Year 46	Year 47	Year 48	Year 49	Year 50	Year 51	Year 52	Year 53	Year 54	Year 55	Year 56	Year 57	Year 58	Year 59	Year 60	Total
1	2,900	2,900	24,200	2,900	1,788,000	2,900	2,900	2,900	2,900	274,900	2,100	1,700	1,300	900	300,500	9,406,700

Please note the above figures are rounded and may differ slightly to the total cost elsewhere in the report.

3 ASSUMPTIONS AND EXCLUSIONS

7. It should be noted that the model is a prediction of what works will be required to keep the building operational and when they will occur. Life cycle replacement is in practice not an exact science and there are many factors that impact upon a component's life expectancy.
8. This report therefore attempts to generate a realistic overall fund of monies to maintain the building and an estimate as to when these funds will be required to be drawn down.
9. The following assumptions have been used in calculating the Life Cycle Costs:
 - a) Construction costs are based on the agreed cost plan with Willmott Dixon;
 - b) Base date for costs: 2Q2020;
 - c) Costs are calculated at real costs, i.e. there is no allowance for inflation and increased costs included in the projected figures;
 - d) The costs included are real costs, i.e. future costs are not discounted to net present values (NPV);
 - e) Calculated costs exclude allowances for management costs and the overheads and profits of an FM Operator; and
 - f) All Facilities Management costs are separated from the Life Cycle Costs, e.g. administration, cleaning and utilities. (as requested by the Health Board).

10. General assumptions include:
 - a) Life cycle replacement periods and work intervals included in the model are based on those published by the RICS in their Life Expectancy of Buildings and CIBSE's Guide M for services replacement;
 - b) The replacement periods assume that the appropriate planned preventative maintenance (PPM) is carried out;
 - c) All workmanships/installations/maintenance etc. are in accordance with manufacturers' recommendations;
 - d) Economically sized competitive replacement contracts are placed;
 - e) All contract areas to be empty of staff and public, and to be safe to allow for replacement access;
 - f) No unreasonable restrictions on working hours; and
 - g) Like for like replacements.

11. Allowances and enhancements have been made on a component by component basis for:
 - a) Strip out costs;
 - b) Sub-contract preliminaries;
 - c) Accessibility enhancement for works not easily reached;
 - d) Out of sequence enhancements where replacement of the component is not naturally sequenced; and
 - e) 3% contingency has been included on all items.

12. General exclusions include:

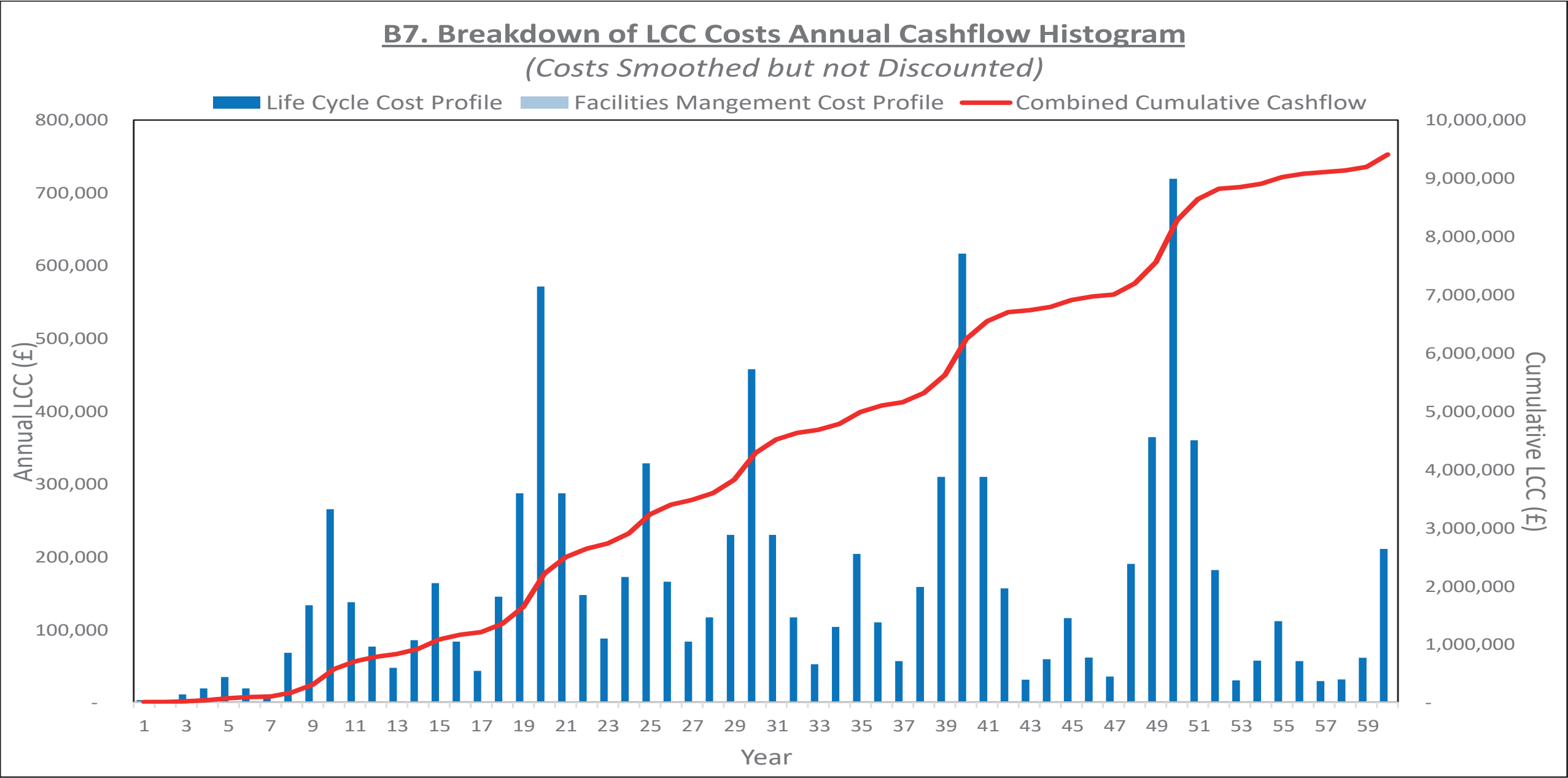
- a) Structural works;
- b) Out of hours working premium;
- c) ICT equipment;
- d) Professional fees;
- e) Temporary roofs;
- f) Damage caused through vandalism;
- g) Effects of future legislation on Building Regulations;
- h) Value Added Tax;
- i) Potential capital allowances and other tax rebates;
- j) Insurances and rates; and
- k) Decommissioning or demolition of the building at its end of life.

13. Calculations

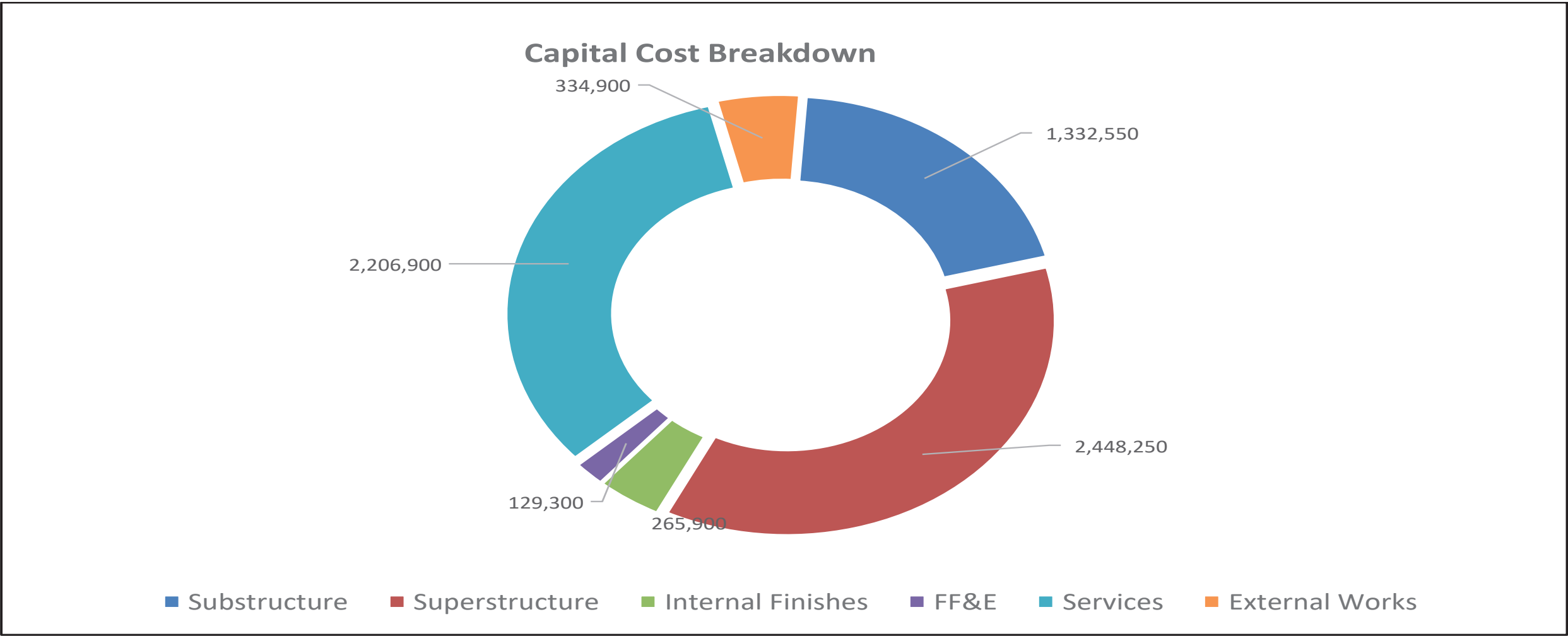
- a) The exact replacement of components is not known. Therefore, the replacement cycles inputted into the model have been ‘smoothed’ across a range of five years.
- b) It is anticipated that the building will remain in operation beyond the end of the 60-year concession period. The costs do not include any tailed-off period, i.e. are not reduced in the final years of the study.

4 ANNUAL AND CUMULATIVE CASHFLOW GRAPHS

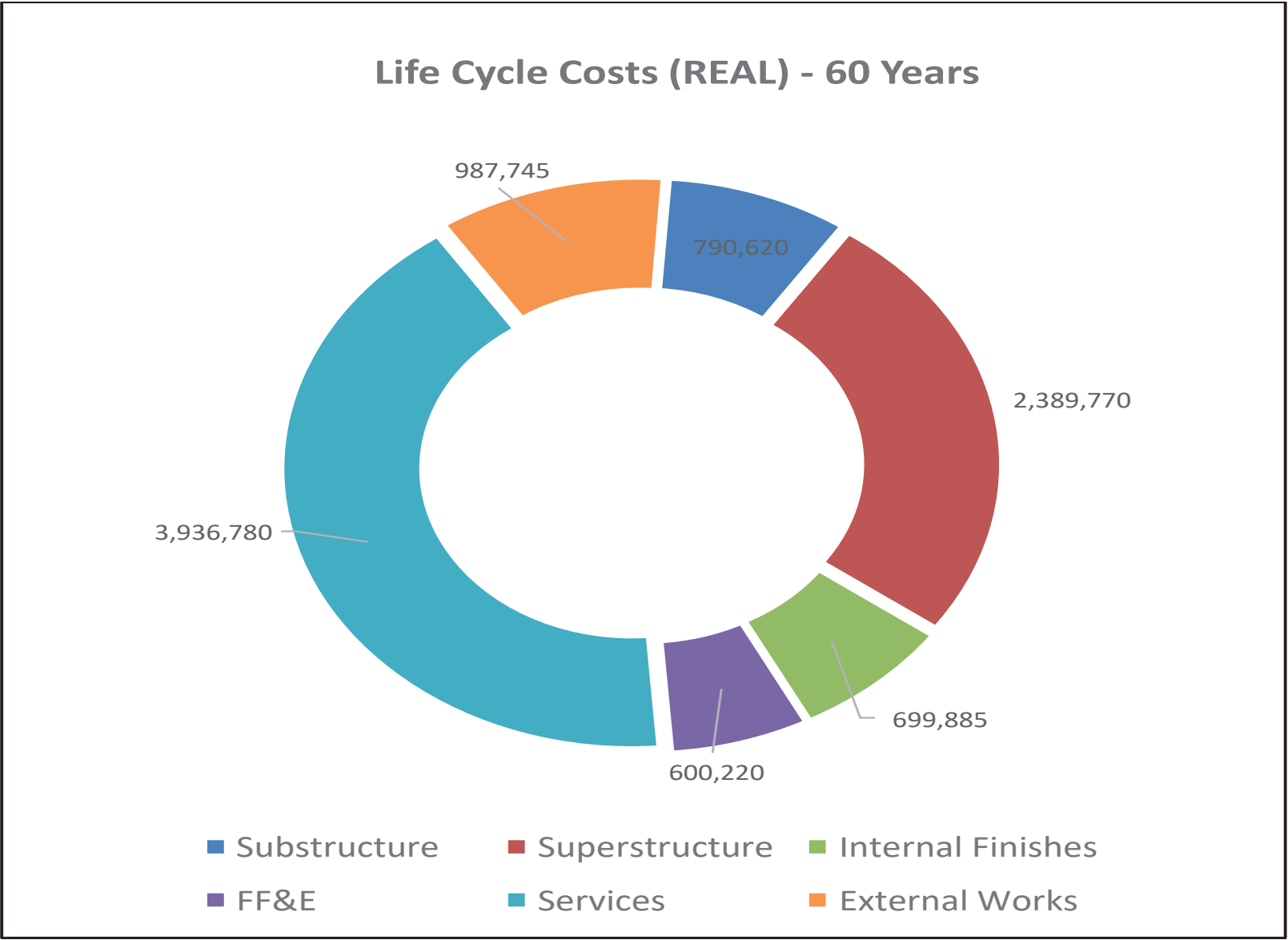
4.1 Smoothed Graph



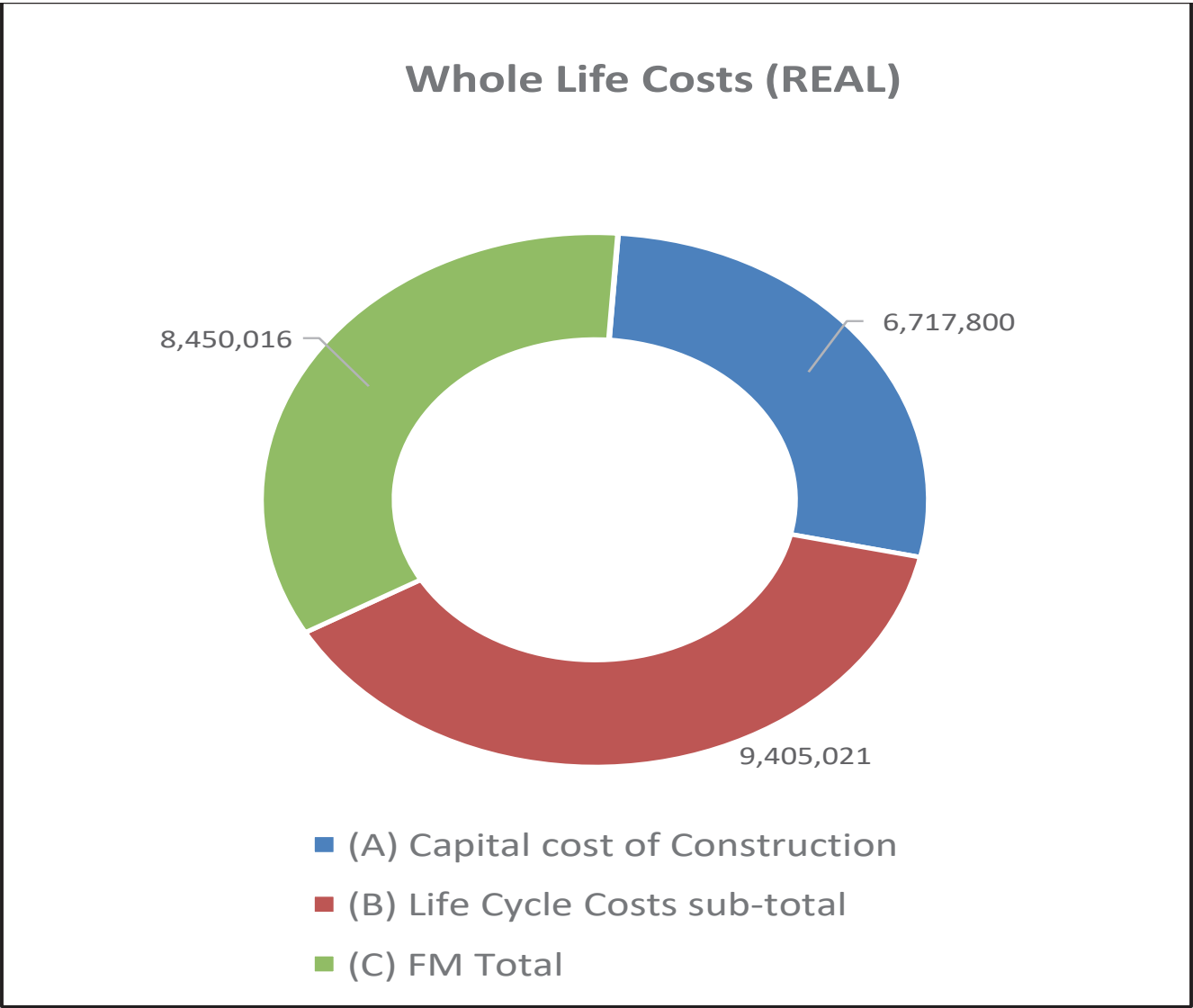
4.2 Capital Cost Breakdown



4.3 Life Cycle Cost Breakdown

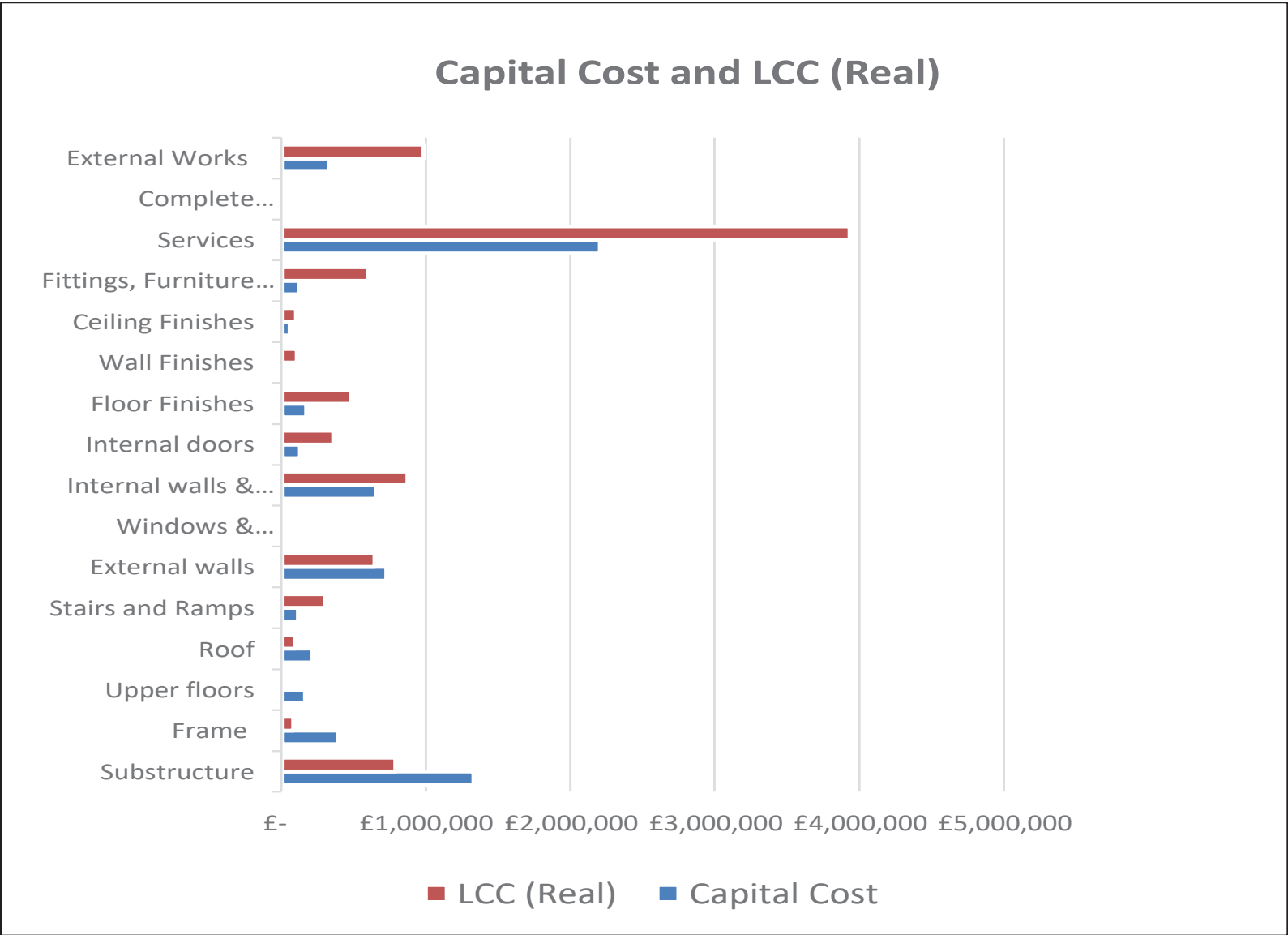


4.4 Whole Life Costs



The FM total above is a stand-alone figure i.e. it is not included within the Life Cycle Costs

4.5 Elemental Cost Comparison – Capital and Life Cycle Costs



VAT Recovery Strategy

VAT Recovery Strategy

VAT Recovery Strategy

Information to be provided by C&V UHB

Assessments of Estate and Facilities Revenue Implications

Assessments of Estate and Facilities Revenue Implications

Please refer to the Health Board’s Full Business Case document ref: Section 6.3 revenue cost for financial case.

Comparison and Reconciliation of Functional Content and Capital Costs Comparison with OBC

Comparison and Reconciliation of Functional Content

The stage 4 process has seen an evolution of the Stage 3 / OBC design, variations associated with the progression of the design are listed below.

- Proposed hard surface games area was moved from the existing GP's site to the bottom of the site opposite the existing children's play area.
- Design of SuDS basin and rain gardens have evolved to integrate with the surrounding landscape and incorporate comments received during initial discussions with SAB officer.
- External maintenance path to the eastern elevation of the building omitted.
- Extent of new shared external space was reduced to avoid existing tree protection zone.
- Existing cafe located within the Powerhouse Hub has been relocated to occupy the space in the Ground Floor single storey link, along with a cafe seating area.
- Rearrangement of internal rooms to provide new GP office layout, GP Kitchenette, combined Baby room, Clerk room and enlarged waiting area at First Floor and omission of external plant area at Roof level.
- Extent of PV's increased and tripple glazing added as part of Decarbonisation initiative by the Welsh Government.
- Edge protection added to the Ground Floor link roof to provide safe access to clean and maintain the glazing and building facade.

Capital Costs Comparison of OBC to FBC

TRACKING / RECONCILING CAPITAL COSTS FORM

**MAELFA WELLBEING CENTRE
COMPARISON OF OBC to FBC
This is a FIXED PRICE Contract**

APPROVED PROJECT COSTS				
1				
BIS PUBSEC Location factor EPI Index	OBC Project Costs - As Approved - BIS PUBSEC 250			
		Cost exc VAT	VAT @ 20.00%	Cost inc VAT
		250		
		1.00		
		-		
	Departmental Cost	5,605,616	1,121,123	6,726,739
	On-Cost	1,836,008	367,202	2,203,210
	Sub-total	7,441,624	1,488,325	8,929,949
	Location factor adjustment	0	0	0
Works Cost	7,441,624	1,488,325	8,929,949	
Fees	18.62%	1,385,326	277,065	1,662,391
Non Works Costs		391,000	78,200	469,200
Equipment Costs		439,897	87,979	527,876
Risk	10.00%	965,785	193,157	1,158,942
Sub-total		10,623,632	2,124,726	12,748,358
VAT Recovery adjustment *****			-71,364	-71,364
VAT Change				
OBC1 TOTAL		10,623,632	2,053,362	12,676,994
Decarbonisation Costs				
MUGA costs				
CCC Implications				
Covid 19 Contingency				
UPLIFTED OBC TOTAL		10,623,632	2,053,362	12,676,994

2				
OBC Project Costs - Adjusted to reflect Base Date of FBC (SoS 4Q20)				
	Cost exc VAT	VAT @ 20.00%	Cost inc VAT	
	274			
	1.00			
	-			
	6,143,755	1,228,751	7,372,506	
	2,012,265	402,453	2,414,718	
	8,156,020	1,631,204	9,787,224	
	0	0	0	
	8,156,020	1,631,204	9,787,224	
18.62%	1,518,317	303,663	1,821,981	
	428,536	85,707	514,243	
	482,127	96,425	578,553	
10.00%	1,058,500	211,700	1,270,200	
	11,643,501	2,328,700	13,972,201	
		-78,215	-78,215	
	11,643,501	2,250,485	13,893,986	
	160,833	32,167	193,000	
	107,954	21,591	129,545	
	47,722	9,544	57,266	
	258,000	51,600	309,600	
	12,218,010	2,365,387	14,583,397	

COST PLAN/ PROPOSED FBC				
3				
Formal Cost Plan Nr 3 Dated 10/07/14				
	Cost exc VAT	VAT @ 20.00%	Cost inc VAT	
	200			
	1.00			
	-			
	0	0	0	
	0	0	0	
		0	0	
	0	0	0	
	0	0	0	
#DIV/0!			0	
		0	0	
		0	0	
#DIV/0!		0	0	
	0	0	0	
		0	0	
	0	0	0	

Reconciliation of Commitment of Unquantified Risk

Reconciliation of Commitment of Unquantified Risk

Risk Management

A risk review for the preferred option has been undertaken as part of this OBC, with a corresponding risk register being produced in a quantified format, in order to inform the level of planning contingency required.

A copy of the risk register has been included within the appendices for information.

The format of the risk register is consistent with the standard Designed for Life template and latest Welsh Government guidance for preparing the estates content of Business Cases and includes the following information:

Risk Number

Each risk has been given a unique number which will remain unchanged during the life of the project. As risks are cleared or closed out the number will be retained on the Register for record purposes. This will allow the history of each risk to be traced by comparison of various versions of the Risk Register.

Risk Description

Each risk item has a corresponding description to briefly explain the actual risk.

Classification

In terms of classification, there are two variables of risk – likelihood and impact (consequence). The product of both identifies the seriousness of the risk exposure.

Likelihood of Occurrence

There are 5 categories of likelihood of exposure:

Rare	Will occur only in exceptional circumstances
Unlikely	Unlikely to Occur
Possible	Reasonable chance of occurring/may occur occasionally
Likely	Likely to occur
Almost Certain	More likely to occur than not

Potential Impact

Insignificant	No risk to the project No impact on services No Impact on the environment
Minor	Minimal risk to the project Slight impact on services Slight impact on the environment
Moderate	Some impact on project Some service disruption Moderate impact on the environment
Major	Significant impact on the project Costs Implications in excess of £250k Major impact on the environment
Catastrophic	Stops or delays project Cost implication in excess of £1m

Risk exposure Score

The product of likelihood x impact, identifies the seriousness of the risk exposure. There are three categories:

- Low Risk 1- 5
- Medium risk 6-14
- High Risk 15-25

Risk Owner

Risk is allocated to either the Health Board or the SCP, depending upon the specific item in question and who is best placed to manage the risk. There are no shared risks on the risk register.

Risk Type

The risk register has been set out in the following risk types:

- Strategic
- Commercial
- Planning & Design
- Construction
- External

Risk Implications

Risk implications have been identified for four areas, as below:

- Time
- Cost
- Quality
- Operations

Some risks may impact on more than one area and may even affect all four areas.

Risk Costs

The risk register has been quantified by the Health Boards Cost Advisor in conjunction with the SCP and Health Board, In order to inform the level of planning contingency required.

Funding Implications

The risk register included within the Estates Annex currently only includes Capital risks.

Risk Countermeasures

Mitigation measures have been identified for each risk that need to be put in place, along with other actions that could be taken if the risk occurs.

Actioned By

Each risk identifies the organisation tasked with implementing the countermeasures and mitigation proposals.

Risk Status

The status of each risk has been identified in three areas, as below:

- Cleared
- Current
- Future

Comments

Comments have been include where relevant and justified in order to remind, action or explain any special circumstances relating to the risk, as well as identifying any links or interdependencies between risks.

Next Steps

The completed risk register for the preferred option has been developed during the Full Business Case stage by the External Project Manager in conjunction with the Supply Chain Partner, Cost Advisor and Client team.

The risk register is regarded as a key project control document and is specifically included as an agenda item for discussion at every monthly Project Team meeting.

Project specific risks have been identified, reviewed, analysed and effectively managed in order to minimise negative consequences and maximise opportunities throughout the FBC stage to this end, the team approach to Risk Management will continue to comprise the following stages during the construction phase of the project and beyond:

Preparation – All parties will be required to understand the project objectives, desired benefits, risk appetite, any earlier risk work undertaken, client risk procedures and risk maturity.

Identification – The Risk register will be reviewed monthly to identify current issues, potential risks and opportunities, in order to continually populate and refine the project risk register. .

Analysis – Each risk will be analysed and the likelihood & impact of each of the risks will be agreed with the project team. Where possible, impact will be assessed individually, including consideration of cost, time, quality, reputation, operational, revenue and environmental aspects.

Quantified Risk Analysis – Quantified Risk Analysis (QRA) will be undertaken in order to build on the analysis and quantifying the associated time and cost impacts. Quantification of risks will be undertaken in whichever format is required utilising techniques such as Monte Carlo simulation, expected Value and Dual Risk Estimating

The team will be involved in the evolving quantification process as closely as possible, such that the inputs and outputs are completely understood and can be updated over time, when necessary, risk allowances will be allocated to individual risks. Quantification will also be undertaken on a pre-mitigation and post mitigation basis to give a clear indication of current risk exposure compared to the target residual exposure

Response and Action Planning – The team will agree specific actions which avoid, reduce, transfer or contain the risk. Action planning is rigorous including risk owners, action owners and timescales.

Monitoring/Review – Risk management activity will be integrated into the day-to-day operation of the project such that the register is kept up to date: risks are added, closed, re-assessed as appropriate and actions are revised as they are completed.

Reporting – key decision makers will be informed of risks at the right level and it will be ensured that the team has visibility of the risks and the effectiveness of risk reductions measures.

Many projects include risks that cannot be directly managed by the immediate project team. As such clear risk management strategy and action plan for control and mitigation of 3d party risk requires full consideration with appropriate integration into the project structure where possible.

Structured Approach to Risk Management

By adopting and implementing this structured approach to risk management a number of perceived benefits will be expected to be obtained, as below

- Improved certainly of outcome
- Identifying and reducing the uncertainties and risks relating to key objectives. Brings all team members together in a professional facilitated, structured project review.
- Provides a rigorous health check for the project.
- Assists in diagnosing underperforming areas & implementing remedial action
- Raising understanding of what matters on the project
- Allocating mitigating actions according to agreed strategies.
- Regularly reviewing progress toward reducing risk and uncertainty.

See Section 15 - Appendix 3 for Risk Register

Appendices

Appendix 1	Schedule of Accommodation
Appendix 2	Schedule of Derogations
Appendix 3	Risk Register
Appendix 4	AEDET Assessment
Appendix 5	BREEAM Tracker
Appendix 6	Management Control Chart
Appendix 7	Logistical Phasing Plans
Appendix 8	Fire Strategy / Report
Appendix 9	Acoustic Strategy / Report
Appendix 10	Ecology & Arboriculture Reports
Appendix 11	Building Control Tracker
Appendix 12	CDM
Appendix 13	Covid-19

Appendix 1

Schedule of Accommodation

Wellbeing Hub @ Maelfa

Maelfa Wellbeing Centre
Schedule of Accommodation - OBC vs FBC comparison

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
00 Ground Floor				
Entrance Lobby	15.94	16.02	0.08	
Circulation	70.51	38.11	-32.4	Circulation reduced due to adding Café and Café seating
Cafe Seating		17.55		Added during Stage 4 at Client request
Information Area	12.82	13.13	0.31	
Pushchair Park	8.51	8.31	-0.2	
Waiting (48 + 4 accessible)	56.59	58.74	2.15	Area increased to include circulation upto Stair 2
Stair 1	11.24	11.35	0.11	
Lift	5.82	5.82	0	
Circulation	98.47	103.81	5.34	
Wellbeing Reception	18.16	16.53	-1.63	
WC	3.06	3.04	-0.02	
WC	3.06	3.03	-0.03	
Acc. WC	4.84	4.8	-0.04	
Interview	9.46	9.46	0	
GP's Office	52.09	51.96	-0.13	
GP Deputy Manager	8.31	8.39	0.08	
Elec. Riser	1.6	1.6	0	
Mech. Riser	1.56	1.55	-0.01	
Treatment 1	20	20	0	
Treatment 2	19.98	19.98	0	
Consulting1	15	15	0	
Consulting 2	14.99	14.99	0	
Consulting 3	14.98	14.98	0	
Consulting 4	15	15	0	
Consulting 5	14.97	14.98	0.01	
GP Store		6.13		Added following requested for more storage by GP's.
Dirty Utility	8.08	6.76	-1.32	Dirty Utility reduced in size following GP request.
Spec WC Ind.	4.84	4.8	-0.04	
Staff WC Ind.	4.84	4.8	-0.04	
GP Room	12.85	12.85	0	
Circulation	39.43	39.04	-0.39	
Consulting 6	15	15	0	
Consulting 7	14.99	14.99	0	
Circulation	9.9	10.77	0.87	
Elec. Riser	1.98	1.99	0.01	
Mech. Riser	1.98	1.99	0.01	
Gas Riser	0.13	0.1	-0.03	
Consulting 8	15.14	15	-0.14	
Consulting 9	14.96	14.96	0	
Consulting 10	15.14	15	-0.14	
Consulting 11	13.87	13.86	-0.01	
Midwives Store	13.8	13.8	0	
District Nurse Store	21.53	20.79	-0.74	
Circulation	22.18	21.73	-0.45	
Stair 3	19.97	19.95	-0.02	
Seminar (24 places)	25.68	25.67	-0.01	
Group Room	76.54	76.78	0.24	
Cleaners	5.19	4.65	-0.54	Cleaners moved to accommodate additional GP store.
Group Room St	11.9	11.9	0	
Baby Room		5.19		Nappy & Feeding rooms combined into Baby Room.
WC	4.76	5.25	0.49	Relocated opposite Group Room
Measurement	7.47	7.31	-0.16	
Changing Places	12.56	12.44	-0.12	
Circulation	36.66	35.61	-1.05	
Stair 2	20.17	20.64	0.47	
Kitchenette	7.49	7.38	-0.11	
Cafe Servery		19.33		Added during Stage 4 following C&V UHB request.
Cafe Store		0.98		Added during Stage 4 following C&V UHB request.
Room area total	955.99	975.57	19.58	

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
01 First Floor				
Circulation	71.89	73.52	1.63	
Waiting (30 + 2 accessible)	39.55	33.55	-6	
Clerk Room	13.02	12.09	-0.93	
WC	3.06	3.04	-0.02	
WC	3.06	3.03	-0.03	
Acc. WC	4.84	4.8	-0.04	
WC	4.76	4.68	-0.08	
Lift	5.82	5.82	0	
Stair 1	18.17	16.85	-1.32	
Podiatry St	10.99	10.99	0	
Podiatry Clinic	15.98	16	0.02	
Consulting 1	13.99	13.99	0	
Treatment 1	16	16	0	
Treatment 2	15.98	16	0.02	
Interview 1	10.62	10.62	0	
Interview 2	10.58	10.58	0	
Interview 3	10.62	10.64	0.02	
Equip. St	8.96	8.97	0.01	
General St	11.5	11.5	0	
Consulting 2	14	14	0	
Stair 2	19.89	20.09	0.2	
IT Hub	18.83	18.5	-0.33	
Elec. Riser	1.6	1.6	0	
Mech. Riser	1.56	1.55	-0.01	
Cleaners	5.19	4.99	-0.2	
Dirty Utility	8.08	7.9	-0.18	
Spec. WC Ind.	4.84	4.8	-0.04	
Staff WC Ind.	4.84	4.8	-0.04	
Clean Utility	8.73	8.62	-0.11	
Store	9.54	9.54	0	
Store	9.58	9.25	-0.33	
Circulation	60.45	60.09	-0.36	
Consulting 3	13.97	13.98	0.01	
Consulting 4	14	14	0	
Near Patient Testing	10.96	10.96	0	
Circulation	9.9	10.74	0.84	
Elec. Riser	1.98	1.99	0.01	
Mech. Riser	1.98	1.99	0.01	
Gas Riser	0.13	0.13	0	
Communal Changing	15	14.9	-0.1	
Staff Acc WC & Shower	7.5	7.5	0	
Staff Rest	34.02	33.9	-0.12	
Staff WC	2.74	2.75	0.01	
Staff WC	2.74	2.76	0.02	
Circulation	29.87	29.43	-0.44	
Stair 3	19.59	19.65	0.06	
Admin. Area (15 spaces)	53.22	53.16	-0.06	
Admin. Area (13 spaces)	49.23	49.16	-0.07	
Interview / Quiet Rm	11.06	10.9	-0.16	
Interview / Quiet Rm	11.06	10.93	-0.13	
Photocopy Rm	6.5	6.4	-0.1	
GP Manager	11.29	11.26	-0.03	
GP's Meeting Room	16.71	16.63	-0.08	
Circulation	36.66	36.64	-0.02	
Staff WC	2.71	2.7	-0.01	
Room area total	819.34	810.86	-8.48	

Room name	Stage 3 Area (m2)	Stage 4 Area (m2)	Area difference (m2)	Comments
RF Roof				
Stair 2	12.8	13	0.2	
Lobby	3.46	3.46	0	
Plant (Elec)	25.03	25.64	0.61	
Plant (Mech)	72.28	73.82	1.54	
Plant (Water)	32.28	34.92	2.64	
Room area total	145.85	150.84	4.99	

00 Ground Floor	955.99	975.57	19.58
01 First Floor	819.34	810.86	-8.48
RF Roof	145.85	150.84	4.99
	1921.18	1937.27	16.09

Appendix 2

Schedule of Derogations

To be provided by WDC once signed off by Health Board

Wellbeing Hub @ Maelfa

Project: Maelfa Wellbeing Hub

Project Risk Register V4 13.07.20 Full Business Case (stage 3)

Identification			Assessment					Quantification			Management			Risk Quantification Calculation		
No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
	Strategic Programme															
1	Business Case submission internal UHB approval process and/or submission dates slipping or ministerial approval taking longer than anticipated. This will delay the delivery programme and project CSF's.	Operational / Cost / Programme	3	4	12	UHB	Strategic / Programme	Unquantified	Unquantified		The FBC submission date and Accepted Programme is based on a end of June submission (as advised by UHB) and a 12 week approval period been inserted into Accepted Programme.	UHB	at FBC submission	Unquantified	0.50	Unquantified
2	Design Compliance; The OB & FBC design was accompanied with a schedule of derogations and design assumptions. These are assumed to accepted by the UHB, although no formal sign off has been notified by UHB - risk these become unacceptable to UHB.	Cost / Programme	2	4	8	UHB	Strategic / Programme	quantified	8		SCP engaged with departmental leads to review each facet of design but UHB to organise project director sign off of stgae 4 design	UHB	Prior to UHB sign off of TC	30	0.25	8
3	Design Compliance; Non-compliance with HTM's / HBNs where not derogated.	Cost / Programme	2	5	10	SCP	Strategic / Programme/Cost	quantified		20	SCP risk included in TC	SCP	Monthly	50	0.25	20
4	Land Ownership /Red Line Boundary / Demarcation / - risk there are boundary issues arise and/or trespass claims after the commencement of works.	Operational / Cost / Programme	1	2	2	UHB	Strategic / Programme	Unquantified	Unquantified		UHB HoT document between CCC & UHB to inlclude boundary drawings that are deem by al parties correct and accurate.	UHB/SCP	Pre SoS	Unquantified	0.05	Unquantified
5	Town Planning Consent; the absence of reserved matters consent delays ability to start on site	Operational / Cost / Programme	2	2	4	UHB	Strategic / Programme	Unquantified	Unquantified		Application submitted in June 2020. Decision expected mid to alte Aug. The Urbanists to maintain regular dialgue with CCC	Planning Consultant	1-Aug-20	Unquantified	0.25	Unquantified
6	Local Authority ReGen Input; the influence of the wider Maelfa DCP may impact the project +/-	Operational / Cost / Programme	2	2	4	UHB	Strategic / Programme	Unquantified	Unquantified		Regular liaison between UHB & CC Regen to ensure issues are known, discussed, agreed and resolved to the satisfaction of all stakeholders.	UHB	Continuous	Unquantified	0.25	Unquantified
	Town Planning															
7	PAC process; public consultation either delays overall application process or adds addition scope items.	Cost / Programme	0	0	0	UHB / Planning Consultant	Strategic / Programme	Unquantified		Unquantified	Regular updates required from Planning Consultant any changes must be signed off by project director.	UHB	Regularly during PAC process	Unquantified	0.00	Unquantified
8	Additional Surveys; That may be required to respond to application process.	Cost	0	0	0	SCP	Strategic / Programme / Cost	quantified		0	Regular updates required from Planning Consultant any changes must be signed off by project director as per PEP protocol. SCP to maintain survey tracker.	UHB / PM / CA	Monthly	30	0.00	0
9	Loss of Open Space; LPA interpretation of loss of open space consequent to proposed development - impact to scope and/or contribution that may be required from UHB to LPA.	Cost / Programme	0	0	0	UHB Planning Consultant	Strategic / Programme	quantified		0	Policy statement to be drafted by Planning Consultant which addresses all issues and satisfies LPA.	UHB	Continuous	45	0.00	0
10	Sustainable Drainage and Landscaping arrangement; Risk that the SAB board request design changes / enhancements to those already included in design proposals and timeline to achieve approval is delayed	Cost / Programme	2	2	4	UHB	Strategic / Programme	quantified	6		SAB SUDS application has been developed in tandem with drainage strategy during stage 4 design SAB application has already been informal discussed with LA SAB so deemd low risk	SCP	Prior to reserved matters consent	25	0.25	6
11	Site Plan; Off site Parking and External Recreational Area are deemed to be non capitalised assest, creating a significant issue for the FBC commercial case.	Cost / Programme	2	5	10	UHB	Strategic / Programme	unquantified	unquantified		UHB to urgently liaise with finance colleagues to determine with likely to be a problem (as is on other BfW NHS projects)	UHB	Urgent	0	0.25	Unquantified
12	DDA Expectations; ability to achieve compliant footpaths given site topography / gradients of the site.	Programme	0	0	0	UHB / SCP	Strategic / Programme	Unquantified		Unquantified	Footpath is to be built to 'adoptable standards' base on the CCC Highways scope issued to the SCP and is a betterment than existing - SCP to provide detailed narrative within stage 4 assumptions log	SCP	Continuous	Unquantified	0.00	Unquantified
13	General Landscaping; Possibility that scope increases (hard & soft elements) as a consequent of reserved matters application / consent conditions	Cost	0	0	0	UHB / SCP	Strategic / Programme	quantified		0	Reserved submission has been developed in line with Outline Application thus minimising the risk of additions unless LPA insist	Town Planning Consultant	May '20	40	0.00	0

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
	Statutory Undertakings;															
14	~~Water~~ ; Stage 4 design development confirms suitable provision is available within close proximity to new development. Risk this working assumption proves inaccurate. Or unforeseen works to facilitate connectivity.	Cost/ Programme	0	0	0	SCP	Cost / Programme	Quantified		0	Surveys undertaken and quote received for works from DCWW	SCP	During Stage 4 design	40	0.00	0
15	Sewerage / Waste Connections ; design development stage 4 has validated that connections can be made to existing services, risk remains that for unforeseen reasons this is more problematic than expected and either differs from record info and/or is damaged/unserviceable	Cost/ Programme	2	5	10	UHB	Cost / Programme	unquantified		unquantified	Non works allowance for utilities connections outside of site demise held by UHB	SCP	Prior to UHB sign off of TC	unquantified	0.25	Unquantified
16	Gas ; Route agreed, quote obtained but methodology of installation yet to be fully developed. Scheduling of work could be problematic if unexpected constraints are placed upon SCP by building occupiers.	Cost/ Programme	2	3	6	UHB	Cost / Programme	Quantified	5		UHB to arrange a meeting with PH Hub/CCC regen team to agree/sign off proposals	UHB	Agree RAMS 8wks prior to works happening	20	0.25	5
17	~~Electricity~~ ; Stage 4 design allows for Sub Station & LV supplies and quotes have been obtained however there are IT Comms to divert from S/Stn location in advance of works	Cost/ Programme	0	0	0	SCP	Cost / Programme	Quantified		0	Options are either instruct Virgin media to develop adaptation plan to divert or seek to re-position substation	UHB	Prior to TC agreement	40	0.00	0
18	ICT ; design and cost provision based on info supplied by UHB and design assumptions from SCP team. Risk requirement changes/increases.	Operational / Cost/ Programme	2	4	8	UHB	Cost / Programme	Quantified	8		SCP seeking to hold one final review meeting with UHB IT & NWIS prior to agreeing TC	SCP	Prior to UHB sign off of TC	30	0.25	8
19	~~Compatibility of all existing services~~ ; within powerhouse hub and the future requirement to create connectivity / combined usage (currently only gas assumed to be linked/dual fed), data and fire alarm connection also known about and planned for. Risk this working assumption proves inaccurate.	Operational / Cost/ Programme	0	0	0	UHB	Cost / Programme	Quantified		0		UHB	Monthly at DTM during stage 3	25	0.00	0
20	Required Service Diversions ; currently only Gas & Drainage known about and allowed from in programme. Risk works are more onerous than envisaged	Operational / Cost/ Programme	2	2	4	UHB	Cost / Programme	Quantified	8		SCP to price works in TC. SCP/UHB to ensure necessary consents in place in timely manner. RAMS to be carefully thought through - hand digging may be required	SCP/UHB	Monthly at DTM during stage 3	30	0.25	8
21	Unexpected Buried Services ; Ground radar survey already undertaken but risk remains and/or impact to works if unexpected services discovered or need to be delay with.	Time / Cost	2	3	6	UHB	Cost / Programme	Quantified	8		SCP undertaken as many surveys as possible to determine aand reduce risk but have qualified TC to exclude unexpected ground conditions.	SCP	continuous	30	0.25	8
22	Utility Clash/Strike ; A Utility strike / hit that impacts the Works & operational continuity of Powerhouse Hub	Time / Cost	1	4	4	SCP	Cost / Programme	Quantified		4	Robust CMS / RAMS implemented by SCP	SCP	As Req'd	25	0.05	4
23	Accuracy of stats quotes at FBC ; based on information available at stage 4. If UHB requirements change then load requirements may also change thus installation assumptions & methodology may have to also change	Operational / Cost/ Programme	1	5	5	UHB	Cost / Programme	unquantified	unquantified		Non works allowance for utilities held by UHB	UHB	As req'd	unquantified	0.05	Unquantified
	Government legislation															
24	Changes in taxation (e.g. VAT)	Cost	1	3	3	UHB	Operational / Cost	Unquantified	Unquantified		Monitor Treasury Guidance/Updates	UHB/CA	Continuous	Unquantified	0.05	Unquantified
25	Changes in Law (Inc British Standards)	Cost / Design	1	3	3	UHB	Operational / Cost / Programme	Unquantified	Unquantified		SCP to consider with Design Team and brief team	SCP	Monthly	Unquantified	0.05	Unquantified
26	Building Regulations Changes	Operational / Cost/ Programme/ Design	1	4	4	UHB	Programme / Cost	Unquantified	Unquantified		SCP to consider any consultation papers for changes to the Building Act and advise project team.	SCP	Regularly during works	Unquantified	0.05	Unquantified
27	Changes to DoH HBN/HTM's	Operational / Cost/ Programme / Design	1	2	2	UHB	Programme / Cost	Unquantified	Unquantified		Review with UHB & Shared Services	UHB	Regularly during works	Unquantified	0.05	Unquantified
	Political Change															
28	Shift in Government Priorities (Central & Welsh Assembly)	Operational	1	3	3	UHB	Programme	Unquantified	Unquantified		Monitor political situation and influence on project direction	UHB	Continuous	Unquantified	0.05	Unquantified
29	Brexit	Operational / Cost/ Programme	1	3	3	UHB	Programme	Unquantified	Unquantified		Monitor political situation and influence on project direction	UHB	Continuous	Unquantified	0.05	Unquantified

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
Influence of Stakeholders																
30	Powerhouse Hub; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	1	4	4	UHB	Programme / Cost / Design	Quantified	3		UHB to manage interface / liaison with PHB and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol	UHB	Prior to UHB sign off of TC	50	0.05	3
31	Local Community Groups; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	1	4	4	UHB	Programme / Cost / Design	Quantified	1		UHB to manage interface / liaison with Local Community Groups and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol	UHB	As req'd	10	0.05	1
32	Emergency Services; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	1	3	3	UHB	Programme / Cost / Design	Quantified	1		UHB/SCP to manage interface / liaison with Emergency Services and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol	UHB/SCP	As req'd	20	0.05	1
33	Existing Medical Centre / GP Practice; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	2	3	6	UHB	Programme / Cost / Design	Quantified	8		UHB/SCP to manage interface / liaison with GP Services and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol	UHB	Prior to UHB sign off of TC	30	0.25	8
34	Maelfa Shopping Centre Management; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	1	2	2	UHB	Programme / Cost / Design	Quantified	1		UHB to manage interface / liaison with Shopping Centre Management and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol. SCP to undertake detailed conditions survey of adjacent boundaries prior to works commencing.	UHB/SCP	As req'd	10	0.05	1
35	Charity / 3rd Sector; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	2	2	4	UHB	Programme / Cost / Design	Quantified	3		UHB to manage interface / liaison with 3rd Sector agencies and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol	UHB	As req'd	10	0.25	3
36	Shared Services; to change the scope, requirements and/or intended delivery methodology.	Programme / Cost / Design	3	3	9	UHB	Programme / Cost / Design	Quantified	6		UHB to manage interface / liaison with Shared Services and validate any requests to add to or change the project scope. Any scope changes to be signed off by project director as per PEP protocol. UHB/SCP to seek NWSSP (SES) engagement prior to agreeing TC.	UHB	Prior to UHB sign off of TC	12	0.50	6
Economic Changes																
37	Socio-economic/political changes	Operational	2	3	6	UHB	Strategic	Unquantified	Unquantified		Review as appropriate	UHB	Continuous	Unquantified	0.25	Unquantified
Force Majeure																
38	COVID-19	Programme / Cost / Operational	5	5	25	UHB	Strategic	Unquantified	Unquantified		Impact analysis once restrictions have been relaxed and COVID-19 risk reduces	UHB	When possible	Unquantified	0.95	Unquantified
39	Civil Unrest / Strike / Riot	Programme / Cost / Operational Programme	1	5	5	UHB	Strategic	Unquantified	Unquantified		Identified as worst case scenario	UHB	Continuous	Unquantified	0.05	Unquantified
40	Flooding	Programme / Cost / Operational Programme	1	5	5	UHB	Strategic	Unquantified	Unquantified		Identified as worst case scenario	UHB	Continuous	Unquantified	0.05	Unquantified
41	Earthquake/Tremor/Sink Hole	Programme / Cost / Operational Programme	1	5	5	UHB	Strategic	Unquantified	Unquantified		Identified as worst case scenario	UHB	Continuous	Unquantified	0.05	Unquantified
42	Major Accident / Terrorist Attack	Programme / Cost / Operational Programme	1	5	5	UHB	Strategic	Unquantified	Unquantified		Identified as worst case scenario	UHB	Continuous	Unquantified	0.05	Unquantified
Professional Negligence																
43	Professional Indemnity insurance not valid / Assumption that existing building is insured by others via All Wales Risk Pool	Operational	1	5	5	SCP/UHB	Construction	Unquantified	Unquantified		SCP to provide valid insurance certificates	SCP/UHB	Continuous	Quantified	0.05	Unquantified
44	Requirement of any Collateral warranties	Programme / Cost	1	3	3	UHB	Operational / Design	Unquantified	Unquantified		None in standard framework provision UHB to consider if any are necessary	UHB	Prior to TC agreement	Quantified	0.05	Unquantified

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
Commercial / Affordability																
45	Increase in Cost; Project Costs projected to be beyond OBC- affordability envelope for unforeseen reasons and/or changes to scope	Cost	0	0	0	UHB	Cost / Programme	Quantified	0		To be highlighted in monthly reporting by SCP/PM/CA and actively see to mitigate.	CA	Monthly by CA	45	0.00	0
46	Client Changes in Scope; The model of care / scope requirements change requiring additions to the proposed building	Cost / Programme	3	4	12	UHB		Quantified	25		All change subject to sign off by project director as per PEP protocol.	CA/PM	Monthly by CA/SCP	50	0.50	25
47	Omissions not considered during OBC / FBC design	Cost / Programme	1	4	4	UHB	Cost / Programme	Quantified	1		Works Info now predicated on RIBA stage 4 design which has been developed in consultation with UHB & SCP thus as much as possible risk reduced	UHB	Prior to UHB sign off of TC	25	0.05	1
48	Physical Constraints; Add cost to project beyond control project team	Cost / Programme	1	3	3	UHB	Cost / Programme	Quantified	1		To be highlighted in monthly reporting by SCP/PM/CA and actively see to mitigate.	CA/PM	Monthly by CA	20	0.05	1
49	Derogations within FBC become unacceptable to UHB and design has to change to comply	Cost / Programme	2	3	6	UHB	Cost / Programme	Quantified	5		Derogations and design assumptions register to be issued to project director for sign off prior to TC agreement	SCP	Monthly by PM	20	0.25	5.0
50	Measurement / Quantities risk	Cost	2	3	6	SCP	ost	Quantified		14.4	SCP risk in TC	SCP		60	0.25	14.4
51	Cash flow; project expenditure profile not aligned to UHB expectations / requirements	Operational	3	2	6	UHB	Cost / Programme	unquantified	Unquantified		CA monthly reporting	CA	Monthly by CA	Unquantified	0.50	Unquantified
52	Market Conditions; differ from those anticipated at OBC planning (such as inflation/TPI, economic conditions)	Cost / Programme	3	4	12	SCP	Cost / Programme	Quantified	0	0	SCP risk inc in TC	SCP	TC agreement	0	0.50	0
53	Target Cost; inability to agree a Target Cost between Health Board & SCP; commercial negotiations may delay the delivery programme.	Cost / Programme	0	0	0	UHB	Cost / Programme	Unquantified		Unquantified	Undertake staged procurement process with trade packages released to CA as early as possible.	CA	During Procurement	0	0.00	Unquantified
54	Contingency; insufficient contingency to complete project	Cost / Programme	1	3	3	UHB	Cost / Programme	unquantified	unquantified		CA monthly reporting	CA/UHB	Monthly by CA	Unquantified	0.05	Unquantified
54	VAT Recovery Strategy; changes from that assumed at OBC	Cost / Affordability	2	3	6	UHB	Cost / Programme	unquantified	unquantified		UHB to advise if OBS assumptions change	UHB	Prior to submission of FBC	Unquantified	0.25	Unquantified
55	Equipment / Technology Enhancements; changes in technology attract additional cost	Cost / Programme	2	2	4	UHB	Cost / Programme	Quantified	13		UHB to review / accept stage 4 design info	UHB	Prior to UHB sign off of TC	50	0.25	13
56	Build Methodology; has to change from that initially anticipated at FBC for reason beyond SCP and exceeds allowances made with TC	Cost / Programme	2	4	8	UHB	Cost / Programme	Quantified	6		SCP to agree build methodology with UHB prior to agreement of TC	SCP	Prior to agreeing TC	22	0.25	6
57	Extension(s) of Time; due to delays beyond SCP / project team control	Cost / Programme / Operational	2	4	8	UHB	Cost / Programme	Quantified	19		PM monthly reporting / assessment	CA/PM	Monthly	75	0.25	19
Timeliness of Information / Decisions Required																
58	UHB required decisions; to conform to desired programme	Programme / Cost	2	3	6	UHB	Cost / Programme	Quantified	6		Ensure UHB are understanding of the requirements of Accepted Programme and are able to act in a timely response.	UHB	Continuous	25	0.25	6
59	Late decisions / instruction; required from third party stakeholders	Programme / Cost	1	1	1	UHB	Operational / Cost / Programme	Unquantified	Unquantified		Ensure UHB are understanding of the requirements of Accepted Programme and are able to obtain desired decisions a timely manner.	UHB	Continuous	Unquantified	0.05	Unquantified
60	Late Procurement of specialist equipment (GROUP 2)	Programme / Cost	2	3	6	UHB	Operational / Cost / Programme	Quantified	6		UHB to understand the requirements of Accepted Programme and are able to act in a timely response.	UHB	Continuous	25	0.25	6
61	RFI's/EWN - delays in answering EWN in the given timescales and failure of RFI process to work as it is envisaged (from both issuing RFI and answering RFI's).	Programme / Cost	1	3	3	UHB	Operational / Cost / Programme	Quantified	1		Ensure UHB are understanding of the requirements of Accepted Programme and are able to act in a timely response.	UHB/SCP/PM	Continuous	25	0.05	1
62	Site Requirements; Any provisions / conditions that any existing adjoining building occupiers must achieve to allow the programmed works to be delivered.	Programme / Cost	2	2	4	UHB	Operational / Cost / Programme	Unquantified	Unquantified		Ensure UHB are understanding of the requirements of Accepted Programme and are able to ensure stakeholders conform.	UHB	Continuous	Unquantified	0.25	Unquantified

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
	Design Development (beyond FBC)															
63	SoA requirements change post RIBA stage 4 design (FBC/TC)	Programme / Cost / Quality	2	3	6	UHB	Strategic	Quantified	5		Any scope changes to be signed off by project director as per PEP protocol	UHB	Continuous	20	0.25	5
64	Construction stage detailed design development	Programme / Cost	3	3	9	SCP	Programme / Cost	Quantified		54				150	0.50	54
65	Changes Law (BS, BA)	Programme / Cost	2	3	6	UHB	Programme / Cost	Quantified	9		Monitor Govt Green/White papers for potential change and how/if it will affect project delivery plus impact post project	UHB	as req'd	35	0.25	9
66	Changes in UHB operational policy necessitate change	Programme / Cost	2	3	6	UHB	Strategic / Cost / Programme	Quantified	6		Any scope changes to be signed off by project director as per PEP protocol	UHB	Prior to UHB TC sign off	25	0.25	6
67	Specialist Design; Design requires input from specialist design discipline	Programme / Cost	1	3	3	UHB	Strategic / Cost / Programme	Quantified	2		SCP do not currently foresee any requirements other than those already engaged. Any changes to be flagged using EWN process.	SCP	Continuous	40	0.05	2
68	Ground Conditions; that underpinned stage 4 design prove to be flawed and a revised sub structure is required and/or contaminated land is discovered	Operational / Cost/ Programme	2	3	6	UHB	Quality / Cost / Programme	Quantified	5		SCP have undertaken significant ground surveys to mitigate although common for risk in ground to be excluded from SCP TC	SCP/PM	Monthly	20	0.25	5
69	Works in Powerhouse Hub; The level of works required in existing Power House Hub are greater than anticipated at OBC	Operational / Cost/ Programme	2	3	6	UHB	Operational / Cost / Programme	Quantified	13		UHB to manage liaison with CCC powerhouse Hub	UHB/SCP	Monthly	50	0.25	13
70	Common Areas; The intent for shared space usage changes post Stage 4 design (FBC) (Powerhouse HUB & Wellbeing Hub)	Operational / Cost/ Programme	2	4	8	UHB	Operational / Cost / Programme	Unquantified	Unquantified		UHB to hold regular meetings with Powerhouse Hub Management to review design and intended delivery methodology	UHB	Monthly	Unquantified	0.25	Unquantified
71	Building Link; Power House Knock through; ability to facilitate works without minimum disruption	Operational / Cost/ Programme	2	4	8	SCP	Operational / Cost / Programme	Quantified		4.8	SCP methodolgy plans to be agreed with PH Hub & CCC, UHB to lead	SCP/UHB	min 6 wks prior to works	20	0.25	4.8
72	Temporary alterations; Works required to existing Hub to maintain operational continuity for construction activity.	Operational / Cost/ Programme	2	3	6	SCP	Operational / Cost / Programme	Quantified		7.2	SCP methodolgy plans to be agreed with PH Hub & CCC, UHB to lead	SCP/UHB	Prior to SoS	30	0.25	7.2
73	Design Assumptions; to underpin the design philosophy; that subsequently prove not to be viable thus requiring an alternative solution.	Operational / Cost/ Programme	1	2	2	UHB	Operational / Cost / Programme	Unquantified	Unquantified		SCP to identify any such changes and discuss with PM/CA, mitigate where possible. UHB undertake detailed review if WI prior to TC agreement	UHB/SCP/P M	Monthly	Unquantified	0.05	Unquantified
74	Room data sheets - anomalies and discrepancies between the room data sheets, architectural GA's & MEP performance specs.	Operational / Cost/ Programme	2	3	6	UHB	Operational / Cost / Programme	Unquantified	Unquantified	Unquantified	End users have sign off C-Sheets, minor changes to be incorporated pre TC agreement	UHB	Prior to TC sign off	Unquantified	0.25	Unquantified
75	Operational Continuity; the developed design and associated delivery methodology and any temporary adaptations to existing services during the works. Logistics of works	Operational / Cost/ Programme	2	3	6	SCP	Operational / Cost / Programme	unquantified			SCP methodolgy plans to be agreed with PH Hub & CCC, UHB to lead	UHB/SCP	Prior to TC agreement	Unquantified	0.25	Unquantified
76	Abortive Design; The effect on the existing design of any proposed changes.	Operational / Cost/ Programme	2	3	6	UHB	Operational / Cost / Programme	Quantified	5		SCP to identify issues via EWN process consequent to changes being requested as per PEP protocol.	SCP	Monthly	20	0.25	5
77	Existing site infrastructure; proves to be insufficient to provide services to either new Wellbeing Hub and/or existing Power House Hub.	Cost / Time / Quality / Operational	0	0	0	UHB	Cost / Time / Quality / Operational	Quantified	0			SCP		25	0.00	0
78	Lack of robust Design Co-ordination pre FBC	Operational / Programme / Cost	0	0	0	SCP	Operational / Programme / Cost	Unquantified		Unquantified	SCP design risk – Design Manager to arrange fortnightly coordination meetings with designers.	SCP	Continuous	Unquantified	0.00	Unquantified
79	Third Party Suppliers; Specialist fit out design information	Programme / Cost	1	3	3	UHB	Programme / Cost	Unquantified	Unquantified		TC agreed on basis of Works Info submitted by SCP	SCP	At end of stage 4 design	Unquantified	0.05	Unquantified
80	Maelfa DCP; Design as to respond to wider Maelfa DCP re development	Programme / Cost	1	2	2	UHB	Programme / Cost	Quantified	2		UHB to hold regular meetings with CC ReGen team to review design and intended delivery methodology	UHB	Prior to TC agreement	30	0.05	2
81	Quality Requirements; Failure by SCP to manage quality standards and site control procedures to manage QA	Operational / Programme / Cost	2	4	8	SCP	Programme / Cost	Unquantified		Unquantified	SCP risk included in TC	SCP	Continuous	Monthly	0.25	Unquantified
81	Fabric/Building enhancements; required outside of immediate works but consequent of the works.	Operational / Programme / Cost	1	4	4	UHB	Programme / Cost	Unquantified	Unquantified		UHB to attend monthly progress meetings and advise of any items that need further consideration. - standard list of approved suppliers	SCP/UHB	Prior to TC sign off	Unquantified	0.05	Unquantified
83	Fire Officer / Fire Strategy - Risk of further enhancements requested, which are above and beyond statutory requirements & policies that the SCP are not aware of.	Operational / Programme / Cost	2	3	6	UHB	Programme / Cost	Quantified	4		SCP have held review meetings with UHB FO and have agreement to omit void detection. SCP to seek overall sign off from UHB FO prior to TC agreement	UHB	Prior to UHB sign off of TC	15	0.25	4
84	IT - risk of the IT department requesting enhancements above and beyond statutory requirements and/or policies that the SCP are not aware of.	Operational / Programme / Cost	2	3	6	UHB	Programme / Cost	Quantified	13		SCP to arrange to meet with UHB, WNIS & Power House Hub IT reps to gain sign off of stage 4 proposals	SCP	Prior to UHB sign off of TC	50	0.25	13

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
85	Construction Methodology ; developed at OBC has to change to respond to either the design or changes in site constraints Site Logistics	Operational / Programme / Cost	0	0	0	SCP/UHB	Programme / Cost	Quantified	0		SCP to achieved sign of intended build methodology prior to agreement of TC	SCP	Prior to agreeing TC	25	0.00	0
86	Demarcation Between Construction and Adjacent Activities; possibility that hoarding impinges on operational continuity of the power house for reasons un be known to SCP.	Operational / Programme / Cost	1	2	2	SCP	Programme / Cost	Unquantified	Unquantified		SCP methodolgy plans to be agreed with PH Hub & CCC, UHB to lead	SCP/UHB	Prior to agreeing TC	Unquantified	0.05	Unquantified
87	Building Link ; Power House Knock through; ability to facilitate works without minimum disruption	Operational / Programme / Cost	2	3	6	UHB	Programme / Cost	Quantified	6		SCP to review and update construction methodology and issue update at end of stage 4 design.- plans to be agreed with powerhouse Hub.	SCP/UHB	Prior to UHB sign off of TC	25	0.25	6
Health & Safety & CDM																
88	General Health & Safety considerations / solutions given location of site to general public and over & above those deemed standard contractor provisions.	Cost / Programme	1	2	2	UHB	Cost / Programme	Quantified	1		SCP have appointment PD	UHB/PD	Continuous	20	0.05	1
Delivery Programme including Construction																
89	Delayed start ; to enabling works due to funding/procurement issues.	Programme / Cost	0	0	0	UHB	Strategic /Cost/Programme	Unquantified		Unquantified	UHB to consider Loan /Self funding prior to WG-FBC approval.- PM/CA to agree procurement strategy with UHB for enabling works-	UHB	Once-FBC- submitted	Unquantified	0.00	Unquantified
90	Supply Chain Resource ; / manpower / material issues within supply chain create delay ability to commence works	Programme / Cost	2	4	8	SCP	Strategic /Cost/Programme	Quantified		36	Review with SCP post procurement and during CA validation	SCP	As req'd	100	0.25	36
91	Approvals ; FBC WG approval delays ability to commence main works	Programme / Cost / Operational	3	5	15	UHB	Strategic /Cost/Programme	Unquantified	Unquantified	Unquantified	Review risk profile with UHB once FBC is submitted and consider options available to UHB	UHB/PM	Once FBC submitted	Unquantified	0.50	Unquantified
92	Temporary Works ; Any unforeseen temporary works that become apparent post mobilisation	Programme / Cost / Operational Programme	2	3	6	SCP	Strategic /Cost/Programme	Quantified		3.2	Ensure sufficient number of surveys are undertaken within Power House Hub and review topic prior to submitting FBC - CMB review test systems	UHB	Prior to FBC being signed off	10	0.25	3.2
93	Consents ; Absence of all necessary consents to commence, which are UHB (legal; e.g. land, lease, licence)	Cost /Quality / Operational	2	4	8	UHB	Strategic /Cost/Programme	Unquantified		Unquantified	PM to review with SCP & UHB to ensure all necessary consents are known, understood and identified on programme. PM to report monthly on status to UHB	UHB/SCP/PM	Continuous	Unquantified	0.25	Unquantified
94	Weather ; Delays impact ground works programme	Cost /Quality / Operational	2	4	8	SCP	Strategic /Cost/Programme	Quantified		12.0	Anything under 1:10 event will be a SCP risk and is included in TC	SCP	As required	25	0.25	12.0
95	Logistical issues ; not identified during planning stage and consequently disrupt/impact and/or delay the works.	Cost /Quality / Operational	1	3	3	SCP	Strategic /Cost/Programme	Quantified		0	PM & SCP to regularly review construction methodology proposals	SCP/PM	Monthly	25	0.05	
96	Poor workmanship /Defects ; creates quality issues that take additional time to rectify	Programme / Cost Quality	1	3	3	SCP	Strategic /Cost/Programme	Unquantified		0	UHB to appoint a qualified Supervisor to report / react to any quality issues.	UHB	Continuous	Unquantified	0.05	
97	Site Security ; Vandalism / Theft impacting operations / programmed works	Cost/Programme	3	4	12	SCP	Strategic /Cost/Programme	Quantified		7.2	SCP to review construction methodology with PM and prelim allowances with CA to ensure suitable provisions are safeguarded against. - prior to TC agreement	SCP	Prior to FBC being submitted	15	0.50	7.2
98	Design co-ordination inconsistencies	Cost/Programme	2	2	4	SCP	/Cost/Programme	Quantified		4.8	SCP risk included in TC	SCP	DTM	30	0.25	4.8
99	Changes ; to the Works Information during construction either by UHB or other stakeholders.	Programme / Cost	3	4	12	UHB	Strategic /Cost/Programme	Quantified	25		All changes to be managed via the PEP process and must be signed off by project director before ibeing included into project scope.	UHB	Continuous	50	0.50	25
100	Design Changes ; to Works Information during construction either by UHB or other stakeholders.	Programme / Cost	2	3	6	UHB	Strategic /Cost/Programme	Quantified	13		All changes to be managed via the PEP process and must be signed off by project director before ibeing included into project scope.	UHB	Continuous	50	0.25	13
101	SCP failure to achieve BREEAM 'Excellent' rating	Operational / Quality	2	3	6	SCP	Strategic	Quantified		3.6	SCP to manage and report status monthly	SCP	Continuous	15	0.25	3.6
102	Disruption ; to adjoining businesses / residents inc noise, working hours	Programme / Cost	2	4	8	SCP	Strategic /Cost/Programme	Unquantified		Unquantified	SCP risk included in TC	SCP	Continuous	Unquantified	0.25	Unquantified
103	Parking issues ; during construction works created by high volume of construction operatives	Operational	2	2	4	SCP	Strategic /Cost/Programme	Unquantified		Unquantified	SCP methodolgy plans to be agreed with PH Hub & CCC, UHB to lead	SCP/PM	As Req'd	Unquantified	0.25	Unquantified
104	Failure to comply with CDM/H&SAW	Programme / Cost	2	3	6	SCP	Programme/Cost	Unquantified		Unquantified	SCP risk included in TC	SCP	Continuous	Unquantified	0.25	Unquantified

Wellbeing Hub @ Maelfa

No	Risk Description	Risk Consequence: Time Cost Quality Operational	Probability	Impact	Score	Risk Allocation	Category	Quantified Unquantified	Estimated cost impact UHB	Estimated cost impact SCP	Management Actions	Action Owner	Review Date	Cost if it happens £,000's	Likelihood Factor	Expected Value £k
105	Other construction works; in close proximity to Maelfa Wellbeing Hub	Programme / Cost	1	3	3	SCP/UHB	Strategic /Cost/Programme	Unquantified	Unquantified		SCP to consult with CCC REGen team to understand DCP and programmed works	UHB		Unquantified	0.05	Unquantified
106	Main Contractor Insolvency; impacts the delivery programme	Programme / Cost	1	5	5	UHB	Strategic /Cost/Programme	Unquantified	Unquantified		Monitor Construction news and take advice from Treasury Office as required.	UHB/PM/CA	Continuous	Unquantified	0.05	Unquantified
107	Sub-Contractor Insolvency; impacts delivery programme	Programme / Cost	3	4	12	SCP	Strategic /Cost/Programme	quantified		28.8	Monitor Construction news and take advice from Treasury Office as required. Greater risk given / economic conditions COVID 19	SCP	Continuous	60	0.50	28.8
108	Land Ownership / Boundary Issues; that may arise during works	Programme / Cost	1	4	4	UHB	Strategic /Cost/Programme	Unquantified	Unquantified		HoT to be shared with SCP team to ensure any risk is mitigated	UHB	Prior to SoS	Unquantified	0.05	Unquantified
109	Key Dates; that a are a requirement but were not identified at commencement	Programme / Cost	2	5	10	UHB	Strategic /Cost/Programme	Quantified	13		UHB to consider and Key Dates before agreeing TC. If post TC then undertake cost benefit analysis before instructing.	UHB	Prior to FBC being submitted	50	0.25	13
110	BREEAM accreditation; late UHB changes to works make accreditation difficult to achieve	Programme / Cost	2	2	4	UHB	Strategic /Cost/Programme	Unquantified	Unquantified		Any proposed change must be evaluated by SCP prior to being instructed to determine full impact.	SCP		Unquantified	0.25	Unquantified
111	Asbestos; identified during the works that was not foreseen and impinges on the works programme.	Programme / Cost	2	4	8	UHB	Strategic /Cost/Programme	Quantified	15		SCP to gain written confirmation that building built with no ACM. (built relatively recently so low risk for PWH) redundant heating pipes possible insulated with ACM - SCP to avoid, ACM known to be present in exsisting medical Centre and R&D survey programmed prior to demolition	UHB/SCP	during works	60	0.25	15
112	Site Working Hours; have to be varied from those stated in Planning Consent and required due to reasons beyond the control of SCP	Programme / Cost	1	4	4	UHB	Strategic /Cost/Programme	Quantified	1		Defined by planning consent to be disuccsed / agreed between UHB & SCP prior to any changeswere discussed with LPA.	UHB/SCP	Continuous	25	0.05	1
113	Programme Delays; experienced by the SCP which are deemed SCP risk and are not compensation events (EoT).	Programme / Cost	2	3	6	SCP	Strategic /Cost/Programme	Quantified		28.6	Subject to EWN/CE process and PM assessment and project PEP protocols	SCP	Continuous	59.6	0.25	28.6
114	Market Conditions; experienced by the SCP due to availability of trades and/or supplier issues or issues with contract terms.	Programme / Cost	2	4	8	SCP	Strategic /Cost/Programme	Quantified		21.6	SCP progress report to provide detailed status of programmed works	SCP	Monthly	60	0.25	21.6
115	Early Take Over; requests received late in delivery programme or opportunity becomes apparent	Programme / Cost	2	3	6	UHB	Strategic /Cost/Programme	Quantified	5		If SCP deem works ready and can be handed over early UHB to consider benefits to Take Over the team will review	UHB/SCP	As required	20	0.25	5
116	Change in Constraints; and/or programme methodology that is enforced upon SCP.	Programme / Cost	2	5	10	UHB	Strategic /Cost/Programme	Quantified	13		SCP to raise via EWN/CE process PM to evaluate with mitigation the primary desire.	UHB	Continuous	50	0.25	13
117	Equipment ; late delivery of group 2 equipment by UHB.	Programme / Cost	2	4	8	UHB	Strategic /Cost/Programme	Quantified	6		SCP to identify in the Accepted Programme all UHB equipment required dates.	SCP/UHB	Continuous	25	0.25	6
118	Town Planning; any requirement to vary conditions of consent	Programme	2	2	4	UHB	Strategic /Cost/Programme	Quantified	3		Project Team to review and agree and requirements before submitted any request	UHB	Continuous	12	0.25	3
119	LABC; any issues that LABC may identify with the works	Programme / Cost	1	4	4	SCP	Strategic /Cost/Programme	Unquantified		Unquantified	SCP to ensure a good working relationship is established with LABC from commencement of works.	SCP	Continuous	Unquantified	0.05	Unquantified
120	Changes in key personnel	Programme	2	4	8	UHB/PM	Strategic/Program me	Unquantified	Unquantified		Ensure transition plans are in place to ensure knowledge transfer procedures are in place if personnel leave the team	PM	Continuous	Unquantified	0.25	Unquantified
															Total £	557

640

Total £308250

Achieving Excellence Design Evaluation Toolkit (AEDET Evolution)

Project details:	Title
	Maelfa Health & Wellbeing Centre

Workshop details:	Location	Date (dd.mm.yy)
	Woodland House	27/02/2020

Completed by:	First name	Last name	Organisation	Job title	Email address
	1: Geoff	Walsh	Cardiff & Vale UHB		
	2: Jeremy	Holifield	Cardiff & Vale UHB		
	3: David	Taylor	Cardiff & Vale UHB		
	4: Nicola	Jones	Cardiff & Vale UHB		
	5: Lynne	Topham	Cardiff & Vale UHB		
	6: Sion	Powell	Cardiff & Vale UHB		
	7: Robert	Wilkinson	Cardiff & Vale UHB		
	8: Hannah	Derry	Cardiff & Vale UHB		
	9: Beverley	Rosser	Cardiff & Vale UHB		
	10: Rebecca	Hooper	Cardiff Council		
	11: Thoria	Mohamed	Cardiff Third Sector Council		
	12: Jon	Brown	South Wales Police		
	13: Cain	Thomas	Gardiner & Theobold		
	14: Chris	Weston	Willmott Dixon Construction		
	15: Daniel	Jones	Willmott Dixon Construction		
	16: Paul	Gooderson	Roberts Limbrick Architects		
	17: Nathan	McDonald	Roberts Limbrick Architects		
	18: Ben	Whyman	Cambria Consulting		
	19: Anne	Sharp	Troup Bywater & Anders		
	20: Kevin	Searle	Troup Bywater & Anders		
	21: Mark	Farrar			
	22: Ceri	Jones	NWSSP Specialist Estates Services		
	23: Caroline	Lewis	NWSSP Specialist Estates Services		
	24: Andrew	Waddington	NWSSP Specialist Estates Services		
	25:				
	26:				
	27:				
	28:				
	29:				
	30:				
	31:				
	32:				

IMPACT: Character and innovation

Average score: 5.0

The four IMPACT sections deal with the extent to which the building creates a sense of place and contributes positively to the lives of those who use it and are its neighbours.

Section A deals with the overall feeling of the building. It asks whether the building has clarity of design intention, and whether this is appropriate to its purpose. A building that scores well under this heading is likely to lift the spirits and to be seen as an exemplar of good architecture of its kind.

ID	Description	Weighting	Score	Notes
A.01	There are clear ideas behind the design of the building	Normal (1) ▼	Strong agreement (5) ▼	
A.02	The building is interesting to look at and move around in	Normal (1) ▼	Strong agreement (5) ▼	
A.03	The building projects a caring and reassuring atmosphere	Normal (1) ▼	Strong agreement (5) ▼	
A.04	The building appropriately expresses the values of the NHS	Normal (1) ▼	Strong agreement (5) ▼	
A.05	The building is likely to influence future designs	Normal (1) ▼	Strong agreement (5) ▼	

The design should be of its time. It should use and express the current best practice in terms of form and technology. The building should clearly reflect new and appropriate models of healthcare provision. It should be a building that clients, developers and designers would wish to visit to learn from when working on future projects.

IMPACT: Form and materials

Average score: 5.0

Section B deals with the nature of the building in terms of its overall form and materials. It is primarily concerned with how the building presents itself to the outside world in terms of its appearance and organisation. Although it deals with the materials from which the building is constructed it is not concerned with these in a technical sense but rather the way they will appear and feel throughout the life of the building.

ID	Description	Weighting	Score	Notes
B.01	The building has a human scale and feels welcoming	Normal (1) ▼	Virtually total agreement (6) ▼	
B.02	The design takes advantage of available sunlight and provides shelter from prevailing winds	Normal (1) ▼	Strong agreement (5) ▼	
B.03	Entrances are obvious and logically positioned in relation to likely points of arrival on site	Normal (1) ▼	Strong agreement (5) ▼	
B.04	The external materials and detailing appear to be of high quality	Normal (1) ▼	Fair agreement (4) ▼	
B.05	The external colours and textures seem appropriate and attractive	Normal (1) ▼	Strong agreement (5) ▼	

IMPACT: Staff and patient environment

Average score: 5.4

Section C deals with how well an environment complies with best practice as indicated by the research evidence.

ID	Description	Weighting	Score	Notes
C.01	The building respects the dignity of patients and allows for appropriate levels of privacy and dignity	High (2) ▼	Strong agreement (5) ▼	
C.02	There are good views inside and out of the building	Normal (1) ▼	Virtually total agreement (6) ▼	
C.03	Patients and staff have good access to outdoors	Normal (1) ▼	Virtually total agreement (6) ▼	
C.04	There are high levels of both comfort and control of comfort	Normal (1) ▼	Virtually total agreement (6) ▼	
C.05	The building is clearly understandable	Normal (1) ▼	Strong agreement (5) ▼	
C.06	The interior of the building is attractive in appearance	Normal (1) ▼	Strong agreement (5) ▼	
C.07	There are good bath/toilet and other facilities for patients	Normal (1) ▼	Virtually total agreement (6) ▼	
C.08	There are good facilities for staff, including convenient places to work and relax without being on demand	Normal (1) ▼	Strong agreement (5) ▼	

IMPACT: Urban and social integration

Average score: 5.5

Section D deals with the way the building relates to its surroundings. It asks whether the building plays a positive role in the neighbourhood whether that is urban, suburban or rural. A building that scores well is likely to improve its neighbourhood rather than detract from it.

ID	Description	Weighting	Score	Notes
D.01	The height, volume and skyline of the building relate well to the surrounding environment	Normal (1) ▼	Strong agreement (5) ▼	
D.02	The building contributes positively to its locality	Normal (1) ▼	Strong agreement (5) ▼	
D.03	The hard and soft landscape around the building contribute positively to the locality	Normal (1) ▼	Virtually total agreement (6) ▼	
D.04	The building is sensitive to neighbours and passers-by	Normal (1) ▼	Virtually total agreement (6) ▼	

◀ Staff and patient environment

▶▶ Results summary

Performance ▶

BUILD QUALITY: Performance

Average score: 5.0

The three BUILD QUALITY sections deal with the physical components of the building rather than the spaces. This is therefore what might be thought of as the more technical and engineering aspects of the building. It asks whether the building is soundly built, will be reliable and easy to operate, last well and is sustainable. It is also concerned with the actual process of construction and the extent to which any disruption caused is minimised.

Section E is concerned with the technical performance of the building during its lifetime. It asks whether the components of the building are of high quality and fit for their purpose. However we are not concerned here with how well the building functions in relation to the human use of it which belongs in another section.

ID	Description	Weighting	Score	Notes
E.01	The building is easy to operate	Normal (1) ▼	Strong agreement (5) ▼	
E.02	The building is easy to clean	Normal (1) ▼	Strong agreement (5) ▼	
E.03	The building has appropriately durable finishes	Normal (1) ▼	Strong agreement (5) ▼	
E.04	The building will weather and age well	Normal (1) ▼	Strong agreement (5) ▼	
◀ Urban and social integration ▶▶ Results summary Engineering ▶				

BUILD QUALITY: Engineering

Average score: 5.0

Section F is concerned with those parts of the building that are engineering systems as opposed to the main architectural features. It asks whether the engineering systems are of high quality and fit for their purpose, will be easy to operate and if they are efficient and sustainable.

ID	Description	Weighting	Score	Notes
F.01	The engineering systems are well designed, flexible and efficient in use	Normal (1) ▼	Strong agreement (5) ▼	
F.02	The engineering systems exploit any benefits from standardisation and prefabrication where relevant	Normal (1) ▼	Strong agreement (5) ▼	
F.03	The engineering systems are energy efficient	Normal (1) ▼	Strong agreement (5) ▼	Separate sub metering to be considered
F.04	There are emergency backup systems that are designed to minimise disruption	Normal (1) ▼	Strong agreement (5) ▼	UPS on the IP system.
F.05	During construction disruption to essential services is minimised	Normal (1) ▼	Strong agreement (5) ▼	
◀ Performance ▶▶ Results summary Construction ▶				

BUILD QUALITY: Construction

Average score: 5.1

Section G is concerned with the technical issues of actually constructing the building and with the performance of the main components. A building that scores well is likely to be constructed as quickly and easily as possible under the circumstances of the site and to offer a robust and easily maintained solution.

ID	Description	Weighting	Score	Notes
G.01	If phased planning and construction are necessary the various stages are well organised	Normal (1) ▼	Strong agreement (5) ▼	
G.02	Temporary construction work is minimised	Normal (1) ▼	Strong agreement (5) ▼	Temp car parking onlyt
G.03	The impact of the building process on continuing healthcare provision is minimised	Normal (1) ▼	Virtually total agreement (6) ▼	
G.04	The building can be readily maintained	Normal (1) ▼	Strong agreement (5) ▼	
G.05	The construction is robust	Normal (1) ▼	Strong agreement (5) ▼	
G.06	The construction allows easy access to engineering systems for maintenance, replacement and expansion	Normal (1) ▼	Strong agreement (5) ▼	
G.07	The construction exploits any benefits from standardisation and prefabrication where relevant	Normal (1) ▼	Strong agreement (5) ▼	

◀ Engineering

▶▶ Results summary

Use ▶

FUNCTIONALITY: Use

Average score: 4.7

The three FUNCTIONALITY sections deal with all those issues to do with the primary purpose or function of the building. It deals with how well the building serves these primary purposes and the extent to which it facilitates or inhibits the activities of the people who carry out the functions inside and around the building.

Section H is concerned with the way the building enables the users to perform their duties and operate the healthcare systems and facilities housed in the building. To get a good score the building will be highly functional and efficient, enabling people to have enough space for their activities and to move around economically and easily in a way that relates well to the policies and objective of the Trust. A high scoring building is also likely to have some flexibility in use.

ID	Description	Weighting	Score	Notes
H.01	The prime functional requirements of the brief are satisfied	Normal (1) ▼	Strong agreement (5) ▼	Holistic aspiration not quite achieved with existing building
H.02	The design facilitates the vision of the development.	Normal (1) ▼	Little agreement (3) ▼	
H.03	Overall the building is capable of handling the projected throughput	Normal (1) ▼	Strong agreement (5) ▼	
H.04	Work flows and logistics are arranged optimally	Normal (1) ▼	Strong agreement (5) ▼	
H.05	The building is sufficiently adaptable to respond to change and to enable expansion	Normal (1) ▼	Strong agreement (5) ▼	
H.06	Where possible spaces are standardised and flexible in use patterns	Normal (1) ▼	Strong agreement (5) ▼	
H.07	The layout facilitates both security and supervision	Normal (1) ▼	Strong agreement (5) ▼	

FUNCTIONALITY: Access

Average score: 5.0

Section I focuses on the way the users of the building can come and go. It asks whether people can easily and efficiently get onto and off the site using a variety of means of transport and whether they can logically, easily and safely get into and out of the building.

ID	Description	Weighting	Score	Notes
I.01	There is good access from available public transport including any on-site roads	Normal (1) ▼	Strong agreement (5) ▼	
I.02	There is adequate parking for visitors and staff cars with appropriate provision for disabled people	Normal (1) ▼	Strong agreement (5) ▼	Ducting for electric charging points included
I.03	The approach and access for ambulances is appropriately provided	Normal (1) ▼	Strong agreement (5) ▼	
I.04	Goods and waste disposal vehicle circulation is good and segregated from public and staff access where appropriate	Normal (1) ▼	Strong agreement (5) ▼	
I.05	Pedestrian access routes are obvious, pleasant and suitable for wheelchair users and people with other disabilities / impaired sight	Normal (1) ▼	Strong agreement (5) ▼	
I.06	Outdoor spaces are provided with appropriate and safe lighting indicating paths, ramps and steps	Normal (1) ▼	Strong agreement (5) ▼	
I.07	The fire planning strategy allows for ready access and egress	Normal (1) ▼	Strong agreement (5) ▼	

FUNCTIONALITY: Space

 Average score: 5.0

Section J concentrates on the amount of space in the building in relation to its purpose. It asks if this space is well located and efficient and whether people can move around in it efficiently and with dignity.

ID	Description	Weighting	Score	Notes
J.01	The design achieves appropriate space standards	Normal (1) ▼	Strong agreement (5) ▼	
J.02	The ratio of usable space to the total area is good	Normal (1) ▼	Strong agreement (5) ▼	
J.03	The circulation distances travelled by staff, patients and visitors are minimised by the layout	Normal (1) ▼	Strong agreement (5) ▼	
J.04	Any necessary isolation and segregation of spaces is achieved	Normal (1) ▼	Strong agreement (5) ▼	
J.05	The design makes appropriate provision for gender segregation	Normal (1) ▼	Strong agreement (5) ▼	
J.06	There is adequate storage space	Normal (1) ▼	Strong agreement (5) ▼	

◀ Access

▶▶ Results summary

Achieving Excellence Design Evaluation Toolkit (AEDET Evolution)



<u>Project details:</u>	<u>Title</u>
-------------------------	--------------

Maelfa Health & Wellbeing Centre

Workshop details: Location

Woodland House

Date

27/02/2020

Results summary:

Category	1	2	3	4	5	6	Score	Scoring Detail
A: ▶ Character and innovation					5		5.0	5 of 5 scored
B: ▶ Form and materials					5		5.0	5 of 5 scored
C: ▶ Staff and patient environment					5	5.4	5.4	9 of 8 scored
D: ▶ Urban and social integration					5	5.5	5.5	4 of 4 scored
E: ▶ Performance					5		5.0	4 of 4 scored
F: ▶ Engineering					5		5.0	5 of 5 scored
G: ▶ Construction					5	5.1	5.1	7 of 7 scored
H: ▶ Use				4.7			4.7	7 of 7 scored
I: ▶ Access					5		5.0	7 of 7 scored
J: ▶ Space					5		5.0	6 of 6 scored

NOTE: A filled traffic light dot [●] in the table above indicates a valid average score, a hollow dot [○] indicates that one or more statements have been marked as 'unable to score'.

Wellbeing Hub @ Maelfa

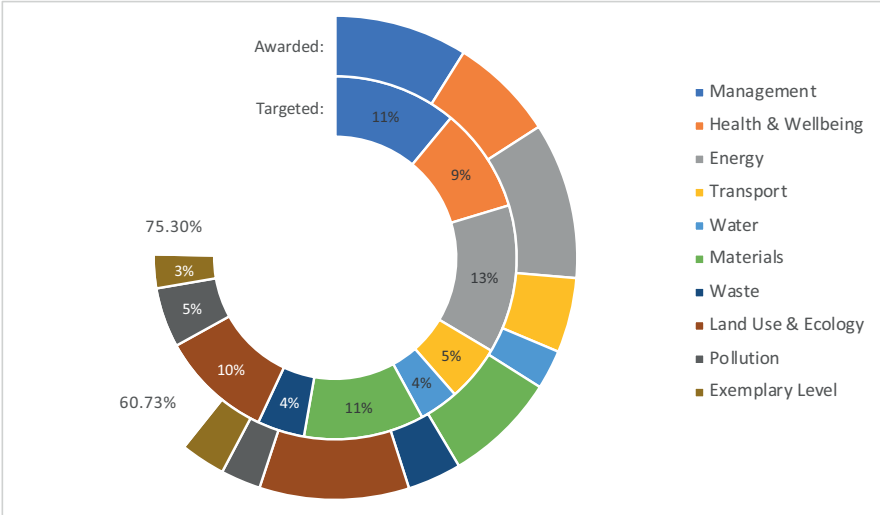
Maelfa Wellbeing Centre - BREEAM 2018 Summary Tracker v13

Assessment: BREEAM 2018 Healthcare
Client: Cardiff & Vale University Health Board / Willmott Dixon Construction
Date: 27.05.2020



Overview

Credit	Available	Targeted	Achieved
Man	11%	11%	9%
Hea	14%	9%	7%
Ene	16%	13%	10%
Tra	10%	5%	5%
Wat	7%	4%	3%
Mat	15%	11%	8%
Wst	6%	4%	4%
LE	13%	10%	10%
Pol	8%	5%	3%
Exe	1%	3%	3%
Total	100%	75.30%	60.73%
Rating	-	Excellent	Very Good



Assessment Summary

Credit	Credit Name	Available	Targeted	Achieved	RIBA Stage	Cardiff & Vale	Roberts Limbrick	TB&A	CAMBRIA	WDC	Gleeds	Formant	RPS	MMSD
Management (Credit Value 0.52%)														
Man 01	Project Delivery Planning	1	1	1	2									
	Stakeholder Consultation	1	1	1	2									
	BREEAM AP (Concept Design)	1	1	1	2									
	BREEAM AP (Developed Design)	1	1	1	3									
Man 02	Elemental Life Cycle Cost	2	2		2						■			
	Component Level LCC Plan	1	1		4						■			
	Capital Cost Reporting	1	1		4						■			
Man 03	Environmental Management	1	1	1	4									
	BREEAM AP (Site)	1	1	1	4									
	Responsible Construction Management	2	2	2	4									
	Monitoring of Construction Site Impacts	2	2	2	4									
Man 04	Commissioning - Schedule & Responsibilities	1	1	1	4									
	Commissioning - Design & Preparation	1	1	1	4									
	Testing & Inspecting Building Fabric	1	1	1	4									
	Handover	1	1	1	4									
Man 05	Aftercare Support	1	1	1	4									
	Commissioning - Implementation	1	1	1	4									
	Post Occupancy Evaluation	1	1	1	4									
Total Management Credits		21	21	17										
Total Addition to Overall Score (%)		11%	11%	9%										

Credit	Credit Name	Available	Targeted	Achieved	RIBA Stage	Cardiff & Vale	Roberts Limbrick	TB&A	CAMBRIA	WDC	Gleeds	Formant	RPS	MMSD
Health & Wellbeing (Credit Value 0.78%)														
Hea 01	Control of Glare from Sunlight	1	1	1	3									
	Daylighting	2	0	0	2									
	View Out	1	0	0	2									
	Internal & External Lighting	1	1	1	3									
Hea 02	Indoor Air Quality Plan	-	-	-	2									
	Ventilation	1	0	0	3									
	Emissions from Construction Products	2	2		4		■							■
	Post Construction Indoor Air Quality Measurement	1	1	1	4									
Hea 04	Thermal Modelling	1	1	1	3									
	Design for Future Thermal Comfort	1	0	0	3									
	Thermal Zoning & Controls	1	1	1	3									
Hea 05	Sound Insulation	1	1	1	3									
	Indoor Ambient Noise Level	1	1	1	3									
	Room Acoustics	1	1	1	3									
Hea 06	Security of Site & Building	1	1		2		■							
Hea 07	Safe Access	1	0	0	3									
	Outside Space	1	1	1	3									
Total Health & Wellbeing Credits		18	12	9										
Total Addition to Overall Score (%)		14%	9%	7%										

Energy (Credit Value 0.7%)														
Ene 01	Energy Performance (M)	9	8	8	-									
	Prediction of Operational Energy Consumption	4	4		2			■						
Ene 02	Sub Metering of End Use Categories	1	1	1	3									
	Sub Metering of High Energy Load	1	1	1	3									
Ene 03	External Lighting	1	1	1	3									
Ene 04	Passive Design Analysis	1	1	1	2									
	Free Cooling	1	0	0	2									
	Low & Zero Carbon Feasibility Study	1	1	1	2									
Ene 06	Energy Consumption - Lifts	1	1	1	2									
	Energy Efficient Features - Lifts	1	1	1	4									
Ene 08	Energy Efficient Equipment	2	0	0	3			■						
Total Energy Credits		23	19	15										
Total Addition to Overall Score (%)		16%	13%	10%										

Transport (Credit Value 0.83%)														
Tra 01	Travel Plan	2	2	2	2									
Tra 02	Sustainable Transport Measures	10	4	4	3									
Total Transport Credits		12	6	6										
Total Addition to Overall Score (%)		10%	5%	5%										

Wellbeing Hub @ Maelfa

Credit	Credit Name	Available	Targeted	Achieved	RIBA Stage	Cardiff & Vale	Roberts Limbrick	T&A	CAMBRIA	WDC	Gleeds	Fornant	RPS	MMSD
Water (Credit Value 0.88%)														
Wat 01	Water Consumption	5	2	1	4		■							
Wat 02	Water Monitoring	1	1	1	4									
Wat 03	Leak Detection System	1	1	1	3									
	Flow Control Devices	1	0	0	3									
Total Water Credits		8	4	3										
Total Addition to Overall Score (%)		7%	4%	3%										

Materials (Credit Value 1.07%)													
Mat 01	LCA - Superstructure (Concept Design)	4	4	4	2								
	LCA - Superstructure (Technical Design)	2	2		4								■
	LCA - Substructure & Hard Landscaping	1	1	1	2								
Mat 02	Environmental Product Declarations	1	0	0	4								
Mat 03	Enabling Sustainable Procurement	1	1	1	1								
	Measuring Responsible Sourcing	3	1		4				■				
Mat 05	Designing for Durability and Resilience	1	1	1	3								
Mat 06	Material Efficiency	1	0	0	1								
Total Materials Credits		14	10	7									
Total Addition to Overall Score (%)		15%	11%	8%									

Waste (Credit Value 0.6%)													
Wst 01	Pre-Demolition Audit	1	1	1	2								
	Construction Resource Efficiency	3	1	1	4								
	Diversion of Resources from Landfill	1	1	1	4								
Wst 02	Use of Recycled & Sustainably Sourced Aggregate	1	0	0	4								
Wst 03	Operational Waste	1	1		3	■							
Wst 05	Adaptation to Climate Change	1	1	1	2								
Wst 06	Disassembly & Adaptability - Recommendation	1	1	1	2								
	Disassembly & Adaptability - Implementation	1	1	1	4								
Total Waste Credits		10	7	6									
Total Addition to Overall Score (%)		6%	4%	4%									

Landuse & Ecology (Credit Value 1%)	
LE 01	Previously Occuied Land
	Contaminated Land
LE 02	Survey & Evaluation
	Determining Ecological Outcomes
LE 03	Planning, Liaison, Implementation & Data
	Managing Negative Impacts of the Project
LE 04	Liaison, Implementation & Data Collection
	Enhancement of Ecology
LE 05	Long Term Ecological Management & Maintena
Total Land Use & Ecology Credits	
Total Addition to Overall Score (%)	

Credit	Credit Name	Available	Targeted	Achieved	RIBA Stage	Cardiff & Vale	Roberts Limbrick	TB&A	CAMBRIA	WDC	Gleeds	Formant	RPS	MMSD
Pollution (Credit Value 0.67%)														
Pol 01	Impact of Refrigerants	2	2	2	4									
	Leak Detection	1	0	0	4									
Pol 02	Local Air Quality	2	0	0	3									
Pol 03	Flood Resilience	2	2		2				■					
	Surface Water Run Off - Rate	1	1		3				■					
	Surface Water Run Off - Volume	1	1		3				■					
	Minimising Watercourse Pollution	1	0	0	3				■					
Pol 04	Reduction of Night Time Light Pollution	1	1	1	3									
Pol 05	Reduction of Noise Pollution	1	1	1	4									
Total Pollution Credits		12	8	4										
Total Addition to Overall Score (%)		8%	5%	3%										

Exemplary Credits (Credit Value 1%)													
Man 03	Responsible Construction Management	1	0	0	5								
Hea 02	Emissions from Construction Products	1	0	0	2								
Hea 06	Security	1	0	0	2								
Ene 01	Beyond Zero Net Regulated Carbon	2	0	0	4								
	Carbon Negative	1	0	0	4								
	Post Occupancy Stage	2	2	2	4								
Wat 01	Water Consumption	1	0	0	4								
Mat 01	LCA - Core Building Services (Concept Design)	1	1	1	2								
	LCA and LCC Alignment	1	0	0	2								
	LCA - Third Party Verification	1	0	0	2								
Mat 03	Responsible Sourcing of Construction Products	1	0	0	5								
Wst 02	Use of Recycled & Sustainably Sourced Aggregates	1	0	0	4								
Wst 05	Adaptation to Climate Change	1	0	0	2								
LE 02	Determining Ecological Outcomes	1	0	0	4								
LE 04	Change and Enhancement of Ecology	1	0	0	4								
		19	3	3									
		1%	3%	3%									

To be provided by WDC

Appendix 7

Logistical Phasing Plans



Wellbeing Hub @ Maelfa



Wellbeing Hub @ Maelfa



