

**SURREY COUNTY COUNCIL
THAMES YOUNG MARINERS,
SURREY OUTDOOR LEARNING & DEVELOPMENT CENTRE**

DESIGN & ACCESS STATEMENT

PART 5 - DESIGN DEVELOPMENT

ISSUE 02

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Contents

1 Introduction	05	3.6 Existing Landscape Analysis	30	6.2 Proposed Schedule of Areas	113	8 Proposed Visuals	143
1.1 Site Address	06	3.7 Existing Building Analysis	31	6.3 Existing & Proposed Area Comparison	115	8.1 Key Views	144
1.2 Project Overview	06			6.4 Proposed Drawings Building 1	116		
1.3 Statement of Need	07	4 Planning	50	6.5 Proposed Drawings Building 2	120	9 Sustainability & Energy Strategy	147
1.4 LBR & London Boroughs Strategic Requirement Statement	08	4.1 Planning History	51	6.6 Proposed Drawings Building 3	123	9.1 BREEAM Pre-Assessment	148
1.5 Greenbelt Statement	09	4.2 Planning List	52			9.2 SuDs Strategy	150
		4.3 National Planning Policy	53	7 Proposed Landscape	126	9.3 Energy Strategy	151
2 The Project	10	4.4 London Planning Policy	54	7.1 Local Site Block Plan Context	127	9.4 Material Sourcing	153
2.1 Key Objectives	11	4.5 Local Planning Policy	55	7.2 Precedents	128		
2.2 Project Vision	12	4.6 Neighborhood Planning Policy	56	7.3 Proposed Landscape Plan	129	10 Strategic Information	154
2.3 Core Values	13	4.7 Metropolitan Open Land Designation	57	7.4 Proposed Context Plan	130	10.1 Accessibility & Inclusivity	155
2.4 Surrey Outdoor Learning Development	14	4.8 Public Consultation & Community Engagement & Feedback	58	7.5 Existing Schedule of External Area	131	10.2 Fire Strategy & Statement	156
2.5 User Groups	15			7.6 Existing & Proposed External Area Comparison	132	10.3 Proposed Phasing Strategy	157
2.6 Site Activities	16	5 Design Development	59	7.7 Proposed Schedule of External Areas	133	10.4 Construction Transport Management Plan	158
2.7 Feasibility Study	17	5.0 Engagement Timeline	60	7.8 Proposed Landscape Vegetation Strategy	134	10.5 Outline Programme	159
2.8 Project Brief	19	5.1 Pre-App 01 Proposal	61	7.9 Proposed Materials	136		
		5.2 Pre-App 02 Proposal	66	7.10 Arboricultural Impact Assessment	137	11 Appendices	160
3 Site Analysis	20	5.3 Pre-App 03 Proposal	80	7.11 Biodiversity Net Gain	138	11.1 Planning Submission List	161
3.1 Site Location	21	5.4 Proposed Footprint, Massing & Form Analysis	96	7.12 Urban Greening Factor	139		
3.2 Aerial Views	22			7.13 Site Access Strategy	140		
3.3 Local Context	23	6 Architectural Proposals	111	7.14 Proposed Transport & Highways Strategy	141		
3.4 Site Context	24	6.1 Proposed Demolition Plan	112	7.15 Delivery & Servicing Strategy	142		
3.5 Site Constraints	25						

Design Development

Proposed Footprint, Massing & Form Analysis

5.4

5.4.1 Design Rationale and Governance Analysis

5.4.1.1 Proposed Site Plan

Boundary

The redline boundary for this development has been reduced from the full ownership boundary (now shown as a blue line boundary on site plans). Ecological surveys identified habitats within the dense woodland to the north bank of the lake and combined with the flood risk highlighted to the north-eastern area of the lake, all proposed developments have migrated into the larger area south of the lake.

For clarity, it seemed appropriate to apply a redline boundary that accurately reflected the scope of this planning application, which was verified during our pre-application consultations.

Impact

As demonstrated through the pre-application process, we have sought to distil the client's requirements down to an efficient solution that respects the setting and minimises the impact to Metropolitan Open Land (MOL). The design proposals consider the relationship to the wider Ham Lands Nature Reserve areas north and south of the site and the river Thames to the west.

The outcome of this design development is a re-provision of the existing facilities broadly within the same footprint, keeping construction on the 'brownfield' portion of the site. This enables the green open spaces, woodland, and habitat areas to remain, with enhancements wherever possible.



5.4.1 Design Rationale and Governance Analysis

5.4.1.2 Proposed Site Surface Treatment

Reacting to the client's brief, the initial design was over scaled. A review of the accommodation requirements took place to see what efficiencies could be achieved to improve the way the proposed scheme could be configured on the site. This included a reappraisal of the composition of buildings on site, with some functions brought into the main building to limit the overall number of buildings.

The following sections review the layout of each building in detail.

To minimise the amount of hardstanding (solid external surfaces) required to support the function of the proposed development, the method of access for vehicles was reconsidered. The first proposal included a gyratory, allowing vehicles to navigate a circular route around the buildings, which enabled a continuous forward movement and avoided reverse manoeuvres. By restricting general vehicular access to the eastern side of buildings, the design now proposes a hammerhead within the car park that allows a coach to reverse into a dedicated parking bay. Traffic management will be necessary to ensure safety and since arrivals are planned for each scheduled group activity this can be facilitated.

Hardstanding for the car park has been positioned in the location of the existing boat store where there is already a large extent of concrete yard. Overspill parking that currently happens in an ad-hoc manner on open grassed areas is to be formalised on reinforced grass parking bays alongside the access road, avoiding root protection zones of mature trees.

The existing access road is preserved in the proposed scheme. Passing bays are added and a widening at the site entrance included to improve visibility for drivers.

The route to the south and west of the guest residential blocks for service vehicles is proposed to be reinforced grass to achieve a permeable surface that is less intensively used than the visitor areas. This is another method to limit the impact of the proposals to this site.



5.4.1 Design Rationale and Governance Analysis

5.4.1.3 Massing Comparison

The overlay plan opposite shows how the proposed layout relates to the scale and location of existing development. Refinement of the design has contracted and consolidated the new buildings to fall within the areas occupied by the complex of existing buildings. The same has been considered for hardstanding areas.

Accounting for the lake being tidal, and flood risk potential to the low lying north-eastern side of the lake, the proposed buildings are set from the same finished ground level as the existing lower ground floor. This maintains the relationship to the water, via the slipway, from the changing spaces in the main building.



Key - Proposed

- Proposed Built Development Footprint
- Total Proposed Building & Structures GIA = 1,974sqm

Key - Existing

- Existing Built Development Footprint
- Existing Structures Footprint
- Total Existing Building & Structures GIA = 1,823sqm

Proposed Development GEA			
		GEA (sqm)	Count
B1_Main Building	B1_Main Building B1	216.653	1
	B1_Main Building 00	637.366	1
	B1_Main Building 01	266.294	1
	B1 Total GEA	1120.313	
B2_Guest Residential	B2_Guest Residential 00	281.121	3
	B2 Total GEA	843.363	
B3_Camping Changing	B3_Camping Changing 00	228.067	1
	B3 Total GEA	228.067	
	B1 Total GEA	1120.313	
	B2 Total GEA	843.363	
	B3 Total GEA	228.067	
	Grand Total GEA	2191.743	

5.4.1 Design Rationale and Governance Analysis

5.4.1.4 Proposed Building 1 - Main Building

We have challenged the client to reconsider their brief in an iterative process alongside the emerging design. Looking at the accommodation requirements subjectively, identifying ways of using space for multiple activities rather than dedicated rooms, considering diversity and time-tabling spaces for the various user groups, have all helped to condense the original requirements down to what is presented here in the final proposals.

Education space standards have been used to benchmark area provision for each space. Building Bulletin 103 published by the Department for Education (DfE) provides area guidelines for mainstream schools and includes equivalent spaces in most cases. These areas have been thoroughly evaluated by the DfE, schools, academies, and colleges to demonstrate the areas are appropriate for designated group sizes.

Through design development we have sought to rationalise the layout of each building. To do this for the main building we have focused on efficiencies in circulation areas to maintain sufficient activity space in each room (the only corridor being in the northern wing with other spaces accessed externally). The changing areas have been condensed into a compact layout of shower areas and changing booths sufficient for the group sizes (half a traditional class group) with adult supervision. Administrative spaces have been combined to consolidate an array of functions into efficient workstations and restroom, with a meeting room that can also be used as a classroom to brief groups embarking on various activities.

Staff residential accommodation has been scaled down from three residential blocks and dormitories (two of the residential blocks are detached bungalows) to a single apartment (three bedroom scaled to GLA space standards) and an overnight hotel style bedroom with ensuite.

This represents the minimum number of spaces in the most compact building form to suit the site constraints.

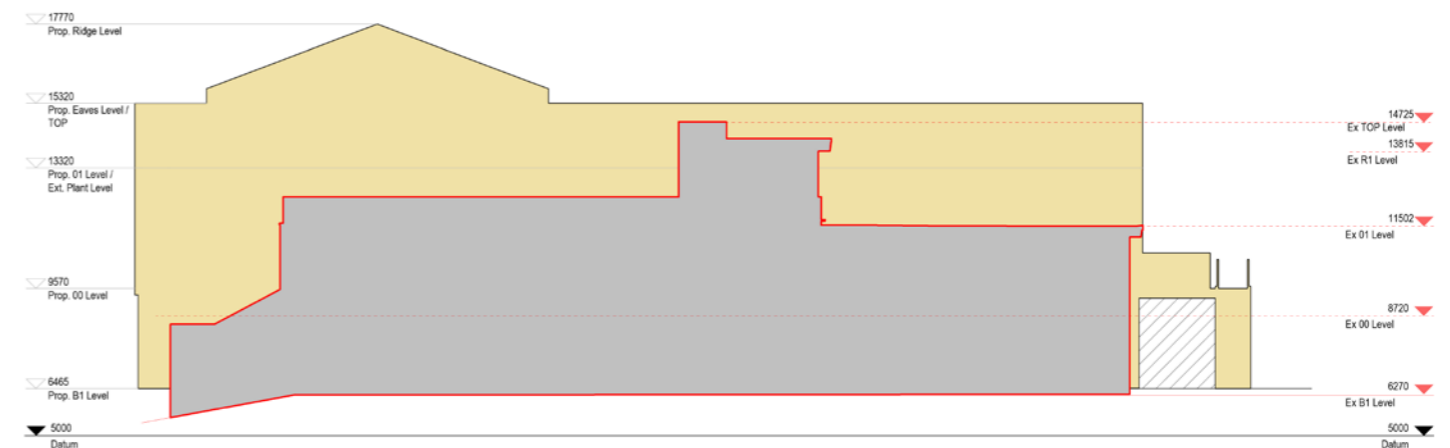
The original 1950s buildings have very low storey heights that cannot be retrofitted to modern standards. The construction excludes thermal insulation to control heat loss and there is insufficient height or ceiling void to incorporate ventilation systems. The reliance on openable windows and gas fired heating through radiators is no longer sustainable where heat recovery is essential. Inevitably, modern construction standards dictate increased storey heights to provide sufficient servicing zones and thermal insulation.

As seen in the comparison overlay elevations below, the proposed building is taller than the existing buildings. The proposed building is set at the existing finished floor level of the lower ground accommodation, but with this being low height storage, the upper ground level becomes elevated by 960mm.



Key - Proposed

- Proposed Elevation
- Existing Elevation
- Proposed Earth / Retaining Wall



Existing & Proposed Main Building North Elevation Overlay

5.4.1 Design Rationale and Governance Analysis

5.4.1.5 Proposed Building 2 - Guest Residential

There is no standard design guidance for this type of dormitory accommodation. A combination of youth hostel, domestic, and hotel space standards have been considered, compared to similar accommodation operated by the client on other sites around Surrey.

The schedule of accommodation includes four person dormitories with ensuite shower room, accessible bedroom and shower room, adult bedrooms with ensuite for guardians, plus a social area where groups can gather before or after activities. All dining will be provided in the main building, so kitchen facilities were excluded early in the design process.

The bedrooms are organised either side of a central corridor in a rectangular building footprint under a pitched roof volume, with a small flat roof canopy to the entrance that adds variety to the building volumes arranged around a social courtyard where campfires will enable groups to continue their outdoor experience.

PV arrays will be included on the pitched roofs for renewable energy generation. Space heating will be through underfloor heating supplied by air source heat pumps linked to the centralised plantroom of the main building. This strategy contributes towards the net zero carbon target and reduces the plant space necessary in this building. Hot water generation and storage is localised within each building to avoid heat losses from pipework between buildings.

5.4.1.6 Proposed Building 3 - Camping Block

Space standards defined in the Building Regulations have been applied to the sanitary spaces. Accessibility for all user groups has been considered.

Through consultation with the client, a layout has been achieved that provides diversity to the use of these facilities. Toilets are separated from the showers to maximise use and allow for cleaning operations to keep facilities available. Sub-division of the facilities is possible internally to enable use by different school groups. This allows the client to respond to differing needs of their customers.

A drying room is provided to allow camping equipment and land based activity personal protective equipment (PPE) to be securely dried and stored after use.

A multi-use room is available for classroom activities, or as a social space for groups to gather close to the campsite.



Existing Campsite Adjacent to Proposed Camping Block



Existing Campfire Provision within the Woods



Existing Campfire Provision within the Woods

5.4.2 Material & Form Development

Over the next pages precedent images show the types of materials and treatments proposed for the redeveloped Thames Young Mariners site. A natural palette of materials has been selected to respect the setting and to limit the visual impact the new buildings may present.

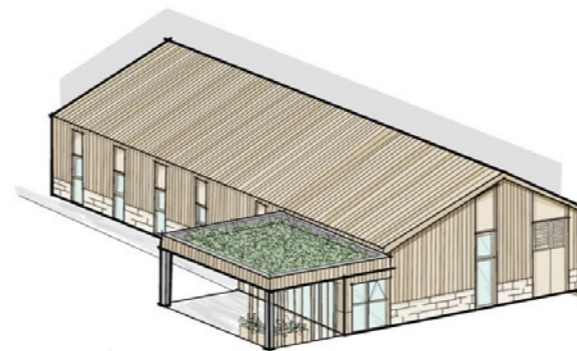
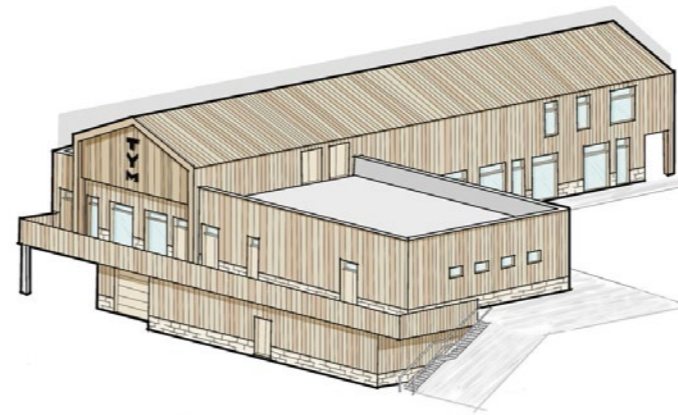
For the facades, timber cladding with vertical boards will be applied to each building type. The different exposure of each elevation will allow the untreated material to weather differently and gradually change to a silver grey colour. During this period, a range of tones will transition as the timber ages, creating a rich and diverse appearance.

Pitched roofs will continue the timber aesthetic with 'shingles' reflecting the format of a tiled roof. The shingles will be of the same species as the wall cladding to harmonise the surfaces. They will also be untreated and allowed to weather to a silver grey colour.

Pitched roofs will host the solar thermal and photovoltaic (PV) arrays generating renewable energy for use on the site and contribute towards the net zero carbon target. PV systems that set the face of the panels flush with the adjacent roof surface are intended to minimise the visual clutter often associated with retrofitted solutions.

The flat roof to the Main Building is designated an open plant deck for air source heat pump (ASHP) heat rejection equipment. ASHPs are another measure of low energy design making a significant step towards net zero carbon. Other air handling equipment for the hall, kitchen, and changing rooms will also be located on the roof. Indicative images of this equipment are included for reference. Our coordination with the engineers has sought to conceal this exposed equipment from sightlines around the site and from the Thames footpath to the west. The parapet walls surrounding this roof area will extend as far as practical for visual and acoustic screening.

Flat roofs to the other buildings will be covered by extensive green or self-seeding biodiverse roof treatments to create additional habitats to those existing at ground level or within mature trees. These roofscapes will define new habitats to additional species, based on the recommendations made by the ecologist, and help in creating food sources for birds and bats foraging around the site.



5.4.2.1 Roofscape Studies

Our strategy to respond to preserving the openness of MOL has been separate buildings that allow views through to other parts of the site.

Each building type is a different size, with a different form following a common architectural language. For the main building, the northern wing facing the lake has a pitched roof to exert prominence, with southern wing being lower in height with flat roof and parapet perimeter.

Following the principles defined for the main building at a lower scale, the guest residential blocks will have an equivalent pitched roof form, with a small flat roof canopy at the entrance.

Timber shingle roofing is proposed for a durable natural material that links the architectural treatment of timber wall cladding applied to all buildings. PV panels will be set flush to the roof surface to minimise their visual impact.

The flat roof will be covered by an extensive green roof of native species to provide a rich ecological area above ground level.

To keep the height of the camping block as low as possible we have applied a flat roof, which ties into the language of the southern block of the main building. The entrance canopy detail of the guest residential buildings is referenced in a covered space to the multi-use room at the north-west corner.

The roof of this building will be treated as a biodiverse roof. This will be allowed to self-seed with native species to harmonise with adjacent nature reserves. The proximity of mature tree canopies will create a different micro-environment to the extensive green roofs applied to the canopies of the guest residential buildings.

5.4.2 Material & Form Development

5.4.2.2 Pitched Roofscape Studies



Pedevilla Architects



Mackay Lyons Sweetapple Architects



Bureau De Change



Maryann Thompson Architects



Blee Halligen Architects



Mary Arnold Foster Architects



Bureau De Change

5.4.2 Material & Form Development

5.4.2.3 Green/Biodiverse Roofscape Studies



Alventosa Morell Arquitectes



Mapos Studio



Bergesen Arkitekter



Mark Merer



Line Architecture



KRADS



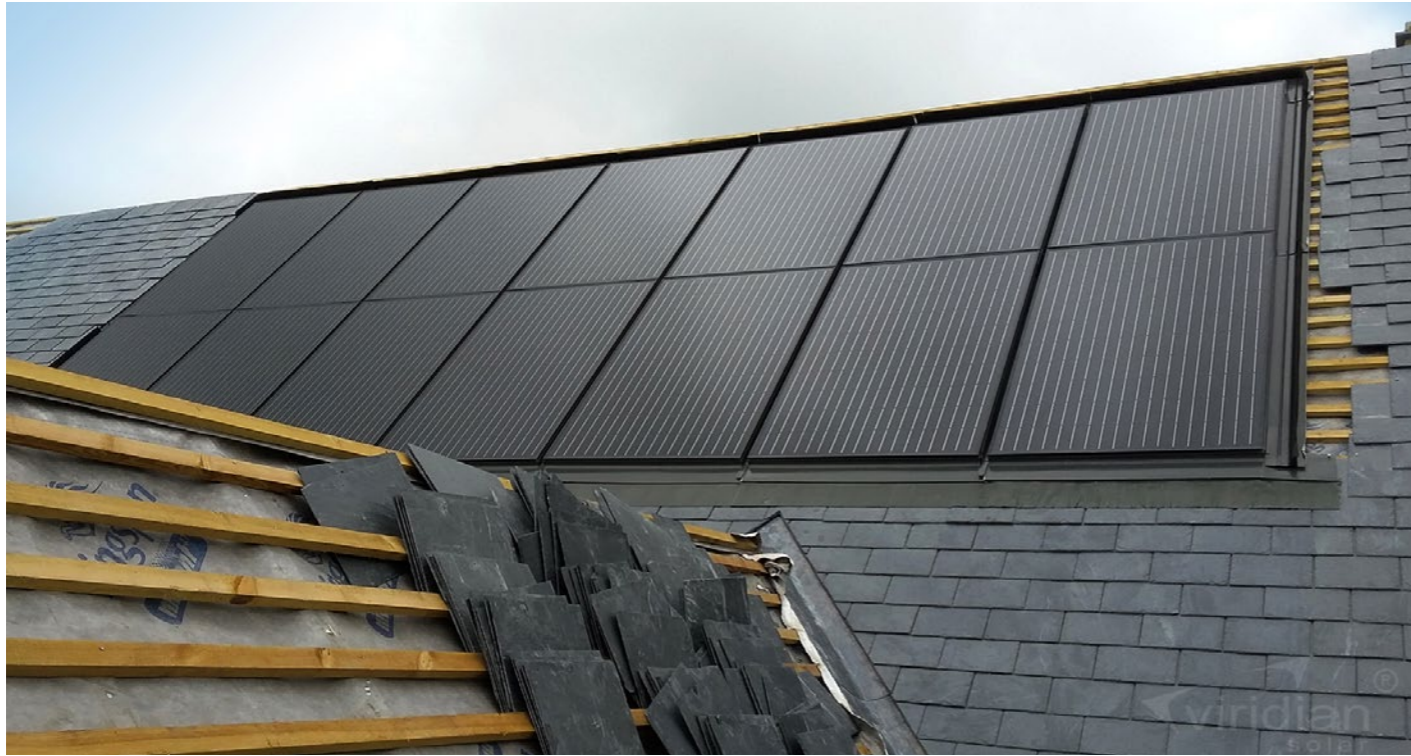
Guillaume Ramillien Architecture



Wallbarn

5.4.2 Material & Form Development

5.4.2.4 Plant Roofscape Studies



Viridian Solar



Deege Solar



Safesite



Viridian Solar

5.4.3 Proposed Buildings

5.4.3.1 Accommodation & Functionality

The existing buildings are typically single storey in a low volume commensurate with developments of the 1950s and 60s. To provide the required accommodation for the original facility, a complex of interconnected and detached buildings were organised around a central plaza that has more recently been used as a car park.

The functions replicated by the main building are highlighted on the plan in Section 3.7 for clarity.

The new Main Building is formed by interconnecting wings that relate to the orientation and position of the original main block. This has enabled the new hall to be in prime position for views over the lake, slipway, and dock area. The existing western terrace is recreated in the proposed scheme as an external dining area overlooking the water. Further external dining and gathering space is provided on the southern side of the building with freestanding canopies offering shelter.

Changing areas on the lower ground of the proposed building occupy the original space used for garages storing boats. Part of the existing retaining wall structure will be incorporated into the new construction to minimise impact on the site. Additional changing areas are included at upper ground level to address the level change on the site and allow sufficient provision for all the scheduled activities.

Administrative areas are contained in the eastern wing at upper ground level, with staff residential accommodation at first floor level. Whilst adding a floor level increases the overall height of the building this allows the footprint to be minimised. In our opinion, this is the right solution to minimise scale of development on MOL and gives definition to this being the prominent building for visitors arriving at the site.

The proposed plans show the comparison in scale of the existing building footprint with the proposed layout. A comparison of areas is provided in Section 6.3.

The guest residential accommodation is a new provision for Thames Young Mariners. This will allow school groups to embark on multi-day activity programmes throughout the year.

Camping has been an established over-night residential option but is less favourable through autumn and winter, or more generally during periods of cold, wet weather (common any season in the UK). The proposed buildings will provide heated sleeping accommodation with ensuite shower rooms, scaled to suit a school group with adult guardians.

The camping block is a new provision for Thames Young Mariners to provide appropriate sanitary facilities for children using the existing campsite.



5.4.3 Proposed Buildings

5.4.3.2 Proposed Building 1

The main building contains a mix of functions arranged within an 'L-shaped' footprint. This will be the reception point for visiting groups and individuals and has been designed to be the dominant building to visually represent the point of arrival.

Administrative spaces support the reception area and provide a base for the training staff (employees) between activities.

The hall is a multi-function space that is intended to provide an internal gathering area for the large groups and will operate as a dining hall for all visitors (supported by the adjacent kitchen), offering a range of hot and cold meals throughout the day. It may also be used for corporate style events in a conference setting and has a sliding screen to divide into two areas to further extend usability.

Changing areas are provided at upper and lower ground levels to relate to water and land based activity areas. A drying room is included at lower ground floor to store the safety equipment and wetsuits used for these activities.

On-site staff residential accommodation is included above the administrative areas. A three bedroom dwelling will be permanently occupied to maintain surveillance of the site 24 hours a day, 365 days per year. When holiday cover is necessary, a separate hotel style facility provides occasional overnight accommodation.

To benefit from efficiencies available from larger scale energy systems and renewable technologies, a centralised plantroom is included in the main building that connects to the guest residential blocks. The adjacent flat roof area will be used to locate heat rejection equipment associated with the air source heat pumps (ASHPs) and air handling plant for the kitchen.

PV arrays will be mounted on the pitched roofs in a frame that sets them flush with the roof finish for a less obtrusive appearance.



Building 1 Point Of Arrival

5.4.3 Proposed Buildings

5.4.3.3 Proposed Building 2

The operational model developed by the client for the site requires guest residential accommodation to facilitate year round provision. Each building will accommodate a school group, so separate buildings assist in managing the segregation of each group.

The dormitory style residential space is based on youth hostel space standards, with four children sharing each bedroom with en-suite shower provision. Adult bedrooms are included for guardians to supervise the groups. A fully accessible bedroom and shower room enables inclusion of all abilities within an activity group.

This is a single storey building with all accommodation accessible from the ground floor.

We have responded to the brief by creating a single layout that can be constructed using off-site manufacture in a modular form that will significantly improve construction time. This approach reduces waste during fabrication, increases precision and quality, and allows for efficient repeatability using digital technology, all in line with the Government's drive for implementation of modern methods of construction (MMC).

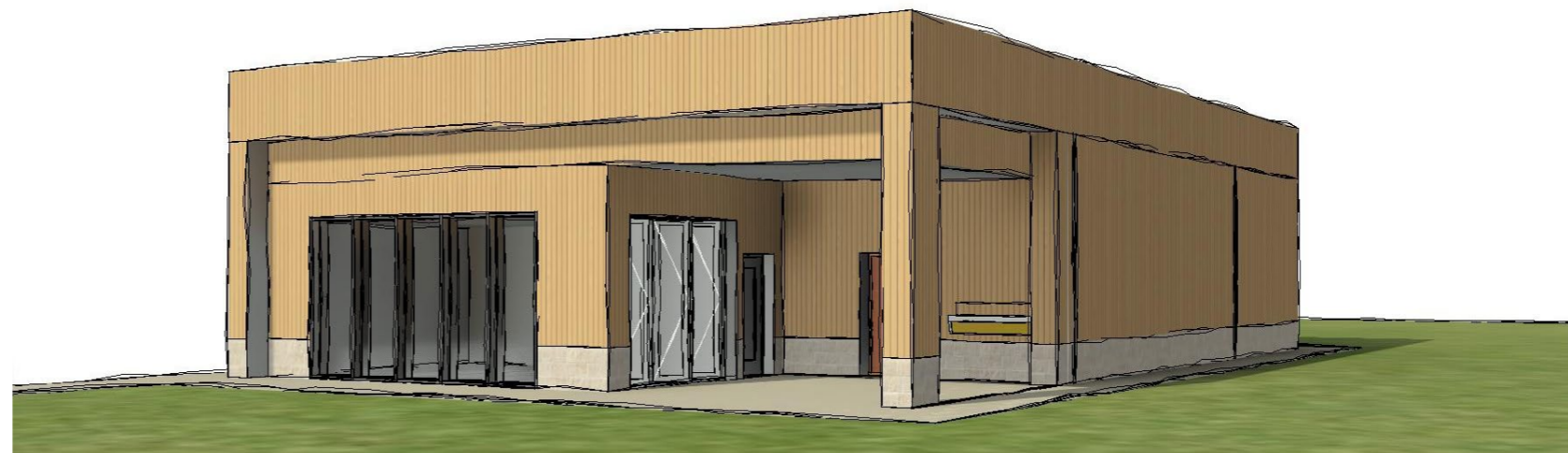


Building 2 Point Of Arrival

5.4.3.4 Proposed Building 3

The style of this building continues the architectural language of the larger blocks it is associated with. An entrance canopy shelters the multi-use social space, as applied to the guest residential building, and the flat roof with parapet walls mimicks the main building.

Locating the new sanitary provision close to the campsite improves safeguarding of children within the large site (with lake), especially at night when external lighting is to be controlled to a minimum to avoid polluting the relative dark sky over the nature reserve.



Building 3 Point Of Arrival

5.4.4 Elevation Design

5.4.4.1 Material Studies

Through the design process we have considered material options that may be appropriate to the site. The existing 1950s buildings are brick with flat roofs now covered by bitumen felt.

The proposals show a unified timber finish to external walls and roofs that will be allowed to silver naturally. Timber species is likely to be western red cedar and UK grown woods are being investigated to minimise embodied carbon from transportation and to support local forestry operations.

External walls will utilise planks configured vertically, with pitched roofs having shingles (rectangular timber 'tiles'). These will form part of a breathing fabric with high levels of thermal insulation to ensure heat loss is minimised.

A variety of timber plank widths is being considered within bays on each façade to create rhythm and interest to the natural material. Some precedent images are included that show how a playful approach to the detailing can change the appearance.

Palette



Timber Window Reveals



Stone 'Effect' Block Plinths and Upstands



Timber Rainscreen Cladding

Combination



Timber Rainscreen Cladding with Stone Effect Block Upstand



Weathering Process of Timber Rainscreen Cladding

5.4.4 Elevation Design

5.4.4.2 Precedents



Archio



Tate + Co



Bureau De Change



Innauer Matt



Francois Verhoeven Architects



31/34 Architects



Alventosa Morrell Arquitectes



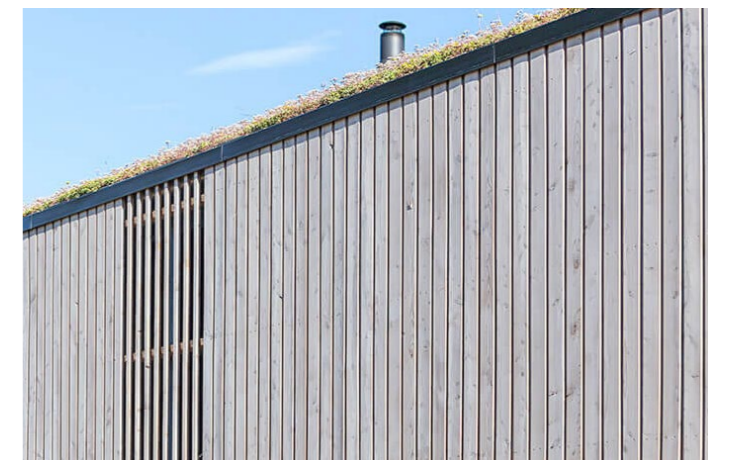
Russell Jones



Dualchas Architects



Fergus Perdie Architects



Line Architecture