

OFFICERS BUILDING
LONGFORD | COUNTY LONGFORD
ARCHITECT'S DESIGN REPORT



ROBIN LEE ARCHITECTURE
JANUARY 2025

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1.0 INTRODUCTION

1.1 PROJECT CONTEXT

Longford County Council “The Client” incorporates the Municipal Districts of Ballymahon, Granard and Longford and is responsible for providing an extensive range of services which impacts directly or indirectly on the well-being of everybody who resides, works or visits Co. Longford.

The Council was successful in securing funding to progress the Part 8 planning and detailed design of a community/cultural space including county museum and community creative space within Connolly Barracks under the THRIVE funding scheme. THRIVE was developed by the Southern Regional Assembly and Northern and Western Regional Assembly working in close partnership with the Department of Housing, Local Government and Heritage. It aims to allow Local Authorities and citizens to reimagine and revitalise town centres through the renovation and reuse of publicly owned vacant or derelict heritage buildings. The THRIVE funding promotes the values and working principles of the New European Bauhaus to ensure that projects are sustainable, aesthetically pleasing, inclusive and accessible..

Targeting NPF and RSES designated settlements – the regions’ key towns, strategic growth centres and cities – THRIVE will support local authorities and their citizens to re-imagine town centres and to transform publicly-owned vacant or derelict heritage buildings within those town centres through renovation, renewal, and adaptive reuse. THRIVE supports locally developed plans that take an integrated strategic approach to the regeneration of our towns and locally selected projects that assist in creating town centres that function as viable, vibrant and attractive locations for people to live, work and visit while also functioning as the business, service, social, cultural and recreational hub for the local community. THRIVE promotes a citizen-centred community-led approach to planning and design under the Town Centre First framework and will fund projects that embrace the core values of the New European Bauhaus – sustainability, aesthetics, and inclusion.

1.2 BACKGROUND TO THE PROJECT

The project site is located within the former Connolly Barracks within Longford Town. Connolly Barracks ceased operations in 2009 when all remaining staff transferred to Athlone. Longford County Council purchased part of the site, including the former Officer’s Mess building and the parade square. Despite numerous ideas generated in the intervening years for the use of the building, it has lain empty since its closure. Many of the buildings within the Connolly Barracks complex, including the former Officer’s Mess that is the subject of the current proposal, are included in the Record of Protected Structures.

Since the closure of the Barracks in 2009 and the loss of approximately 200 jobs in this area of the town, the northern end of Longford Town has slowly closed down. The poor urban fabric and lack of activity around this end of the town has greatly impacted on the presentation and perception of the town. Longford County Council is now seeking to redevelop Connolly Barracks building as a community/cultural space to revitalise this area and also to act as a regenerative catalyst for the wider regeneration of the northern end of the town. It is proposed that the Barracks will form the centre of a new cultural quarter within the town of Longford. It is envisioned that the redeveloped Officer’s Mess building will include a county museum and cultural/community space and a creative ‘making’ space.

1.3 PART 8 APPLICATION

Planning and Development Acts 2000 (As Amended) Part 8 - Planning and Development Regulations 2001 (As Amended)

In accordance with the requirements of the above regulations that Longford County Council proposes to undertake the following works:

Re-development of the former Officers Building, Abbeycarton, Longford, Co. Longford, to a multi-purpose community facility, a Protected Structure, situated within the grounds of Sean Connolly Barracks.

The proposed development will consist of:

- Refurbishment with internal alterations, external alterations, repairs and upgrades to the Protected Structure (former Officers Building).
- New single storey extension to the rear (west) of the Officers Building.
- Demolition of rear boundary wall and utilitarian buildings to the west of the Officers Building.
- Public realm enhancements comprised of permeable hard landscaping to facilitate universal access.
- Installation of feature lighting to former Officers Building building.
- Provision of car parking including accessible parking spaces, EV charging point and bicycle parking.

1.4 APPLICATION DOCUMENTS

The Architect’s Design Statement details the site, design brief and the other design considerations in the development of the proposal, and should be read in conjunction with the documents and drawings that accompany the Part 8 application.

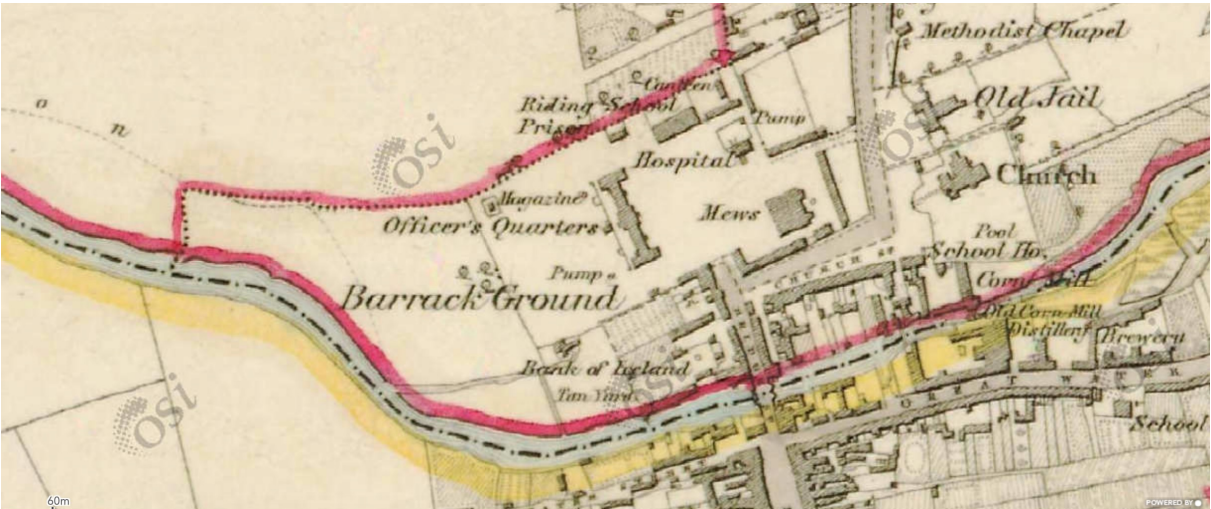
It should be read in conjunction with the following, as submitted with the application:

- Architectural Heritage Impact Assessment
- Appropriate Assessment Screening Report
- Preliminary EIA Screening Report
- Archaeological Assessment Report

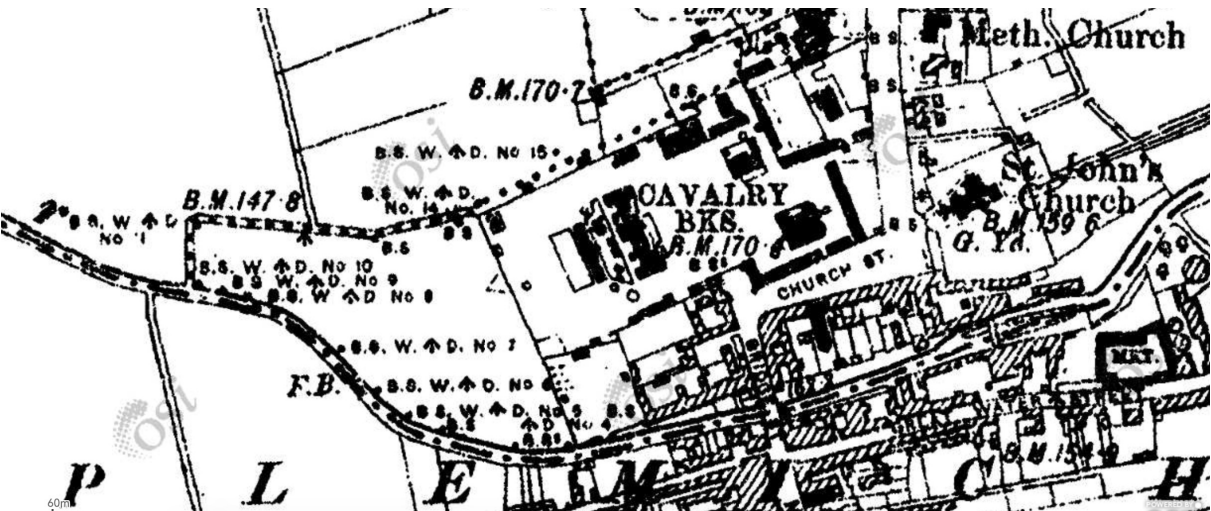
2.0 SITE

2.1 LOCATION - HISTORIC CONTEXT

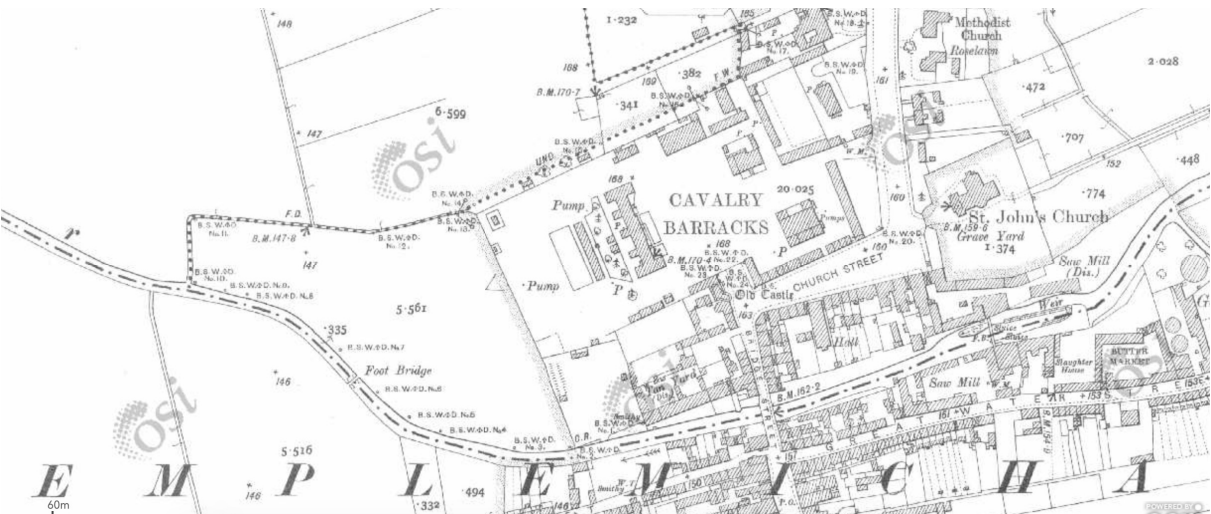
The application site is situated at the former Sean Connolly Barracks, Longford, Co. Longford and the associated lands to the south west of the existing building. Historic mapping shows the development of the area as illustrated below:



Excerpt from the 1st Edition 6 inch Ordnance Survey map. Surveyed 1829-1834.



Excerpt from the last Edition 6 inch Ordnance Survey map. Surveyed 1830's - 1930's..



Excerpt from the 25 inch Ordnance Survey map. Surveyed 1863-1924.

2.2 SITE & CONTEXT

The former Sean Connolly Barracks is a Protected Structure.

It is appraised and described by the Buildings of Ireland website as:

Description:
Detached nineteen-bay barracks on H-shaped plan, built 1815. Originally in use as main military accommodation building and officers’ mess. Composed of a central five-bay three-storey block, flanked to either side (north and south) by six-bay two-storey ranges, and with advanced single-bay two-storey gable-fronted end blocks. Two-storey returns and single-storey extensions to rear (west). Single-storey extension to north elevation. Porch extension to front elevation (east) of south flanking range. Auxiliary buildings to rear (west). Hipped and pitched slate roofs with cast-iron rainwater goods, rendered and dressed coursed limestone chimneystacks. Roughcast rendered walls with rusticated coursed limestone to ground floor to central and advanced end blocks. Dressed limestone plinth and raised dressed limestone quoins. Dressed limestone string courses, sills and sill courses. Square-headed window openings having timber frame windows with hinged panes. Wyatt windows to front elevation of end blocks at first floor level, now with timber casement windows. Square-headed main entrance opening to centre of main block with replacement glazed timber door, accessed via concrete steps. Situated within the grounds of Sean Connolly Barracks, to the west side of the parade ground and barrack complex, and located to the north of Longford Town centre. Rubble stone boundary wall and complex of single-storey outbuildings to the rear (west).

Appraisal:
This monumental, classically-inspired former cavalry barrack building forms the principal element of the Sean Connolly Barrack complex (13008016 – 20). It retains its early character, form, massing and much of its important early fabric. Fine craftsmanship and attention to detailing are evident throughout. It was built to designs by John Behan and was built to provide accommodation for 9 officers and 222 non-commissioned officers and privates. The impressive scale of the building and the repetition of simple, well-proportioned elements create a powerful and striking architectural effect. Its form, with classical proportions, is very typical of the military architecture of the time and similar buildings are to be found at Custume Barracks, Athlone, and at Columb Barracks, Mullingar, dating to the same period. The complex of single-storey outbuildings and the rubble stone boundary wall to the rear complete the setting and add to this fine composition. This building forms the centrepiece of a group of related structures within the Sean Connolly Barracks complex (13008016 - 20) that together represents an important element of the architectural heritage of the area and is of considerable social and historical importance to County Longford. Sean Connolly Barracks is named after Brigadier Sean Connolly, of the Longford Brigade, who was fatally wounded in action in 1921 by British forces during the War of Independence.

Categories of Special Interest: Architectural, Artistic, Historical, Social

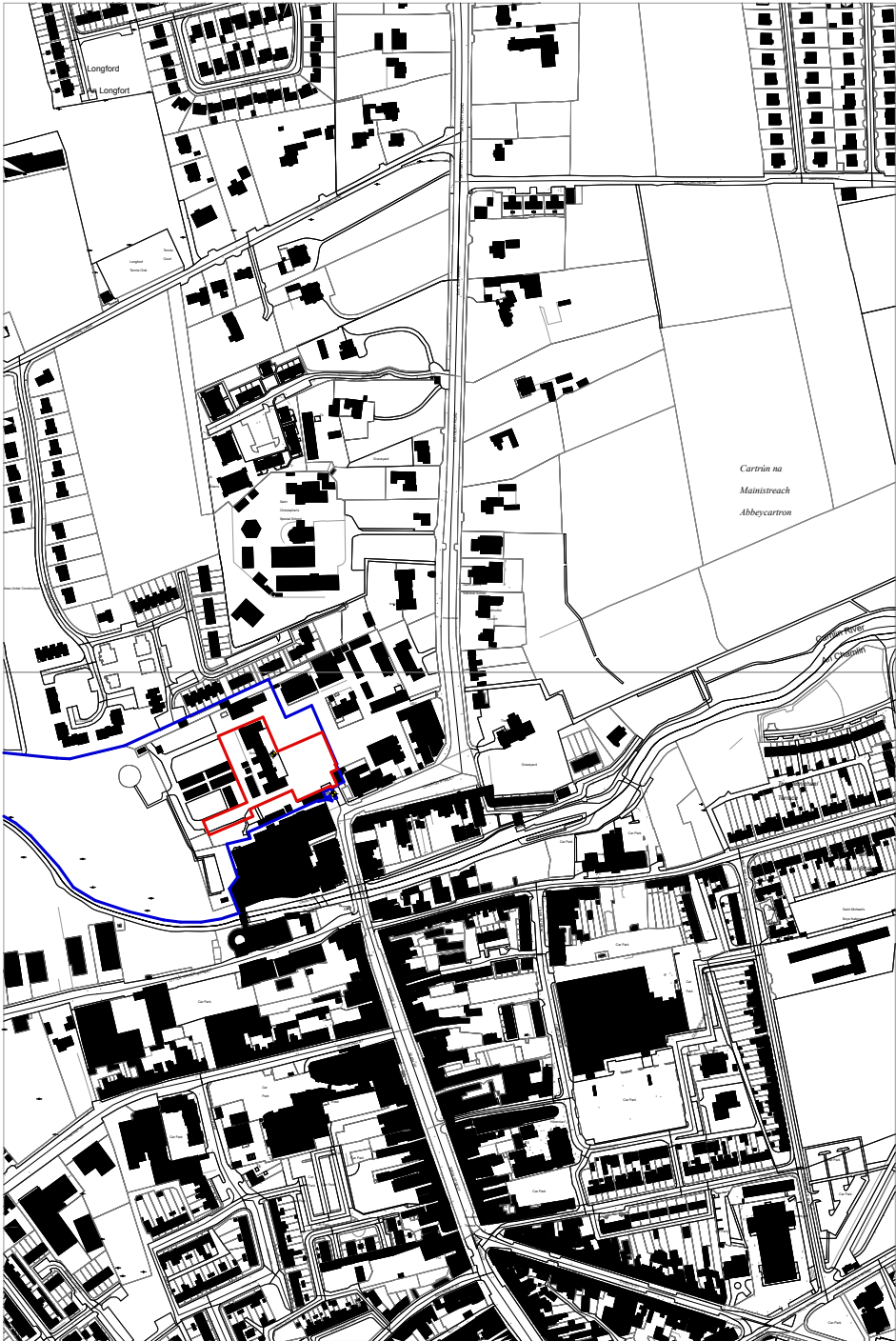
Reg No: 13008020
Rating: Regional
Previous Name: Longford Cavalry Barracks
Original Use: Barracks
In Use As: Barracks
Date: 1810 - 1820
Date Recorded: 08/09/2005
Coordinates: 213006, 275708

<https://www.buildingsofireland.ie/buildings-search/building/13008020/sean-connolly-barracks-church-street-battery-road-abbeycartron-longford-longford>

With the former barrack building now vacated the building is now an important development opportunity site at the northern end of Longford.

2.3 LOCATION PLAN

The plans below shows the location of the application site within the urban context of Longford town



LOCATION PLAN
1:2500
0 50 100 150 200 250m
Scale



SITE LOCATION PLAN
1:1000
0 20 40 60 80 100m
Scale

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LEAD CONSULTANT / ARCHITECT:	ROBIN LEE ARCHITECTURE
QUANTITY SURVEYOR:	NOLAN CONSTRUCTION CONSULTANTS
STRUCTURAL & CIVIL ENGINEER:	MPA
MECHANICAL & ELECTRICAL ENGINEER:	DELAP & WALLER

Issue	Description	Date	Drawn	Check
P1	PRELIMINARY	11/10/2024	OC	RL

PART 8	
ROBIN LEE ARCHITECTURE	Project No. 24011
3 Stukeloy Street Longford WCOB 5L8	Client LONGFORD COUNTY COUNCIL
T: 020 3368 6724 E: info@robinleearchitecture.com W: www.robinleearchitecture.com	Date: Oct 2024 Scale / Format: 1:2500 & 1:1000/A1 Drawn / Checked: OC / RL Drawing Name: Site Location Plans Issue: P1

2.4.4 SITE & CONTEXT _ PHOTOGRAPHIC RECORD



Selected exterior views of existing building. Complete photographic survey of exterior and interior is included within the accompanying Architectural Heritage Impact Assessment.

3.0 BRIEF

3.1 PRELIMINARY PROJECT BRIEF

The Preliminary Brief as set out by Longford CoCo is as follows:

This project is for the redevelopment of the former Officers Building into a community/cultural space incorporating a county museum and community creative space. The project will be managed by Longford County Council upon completion. The community creative space will allow community groups to prepare and make elements for community arts events. It will also be a space that will be accessible to different groups across the community for meeting and interacting. Due to the nature of the space that will be created and the location alongside the museum, this space will create opportunities for increased engagement with the new communities and integration among all sectors of the community. The revenue generated through the admission to the museum and the hire of the creative space will be put back into the facility for maintenance and ongoing promotion of the facility.

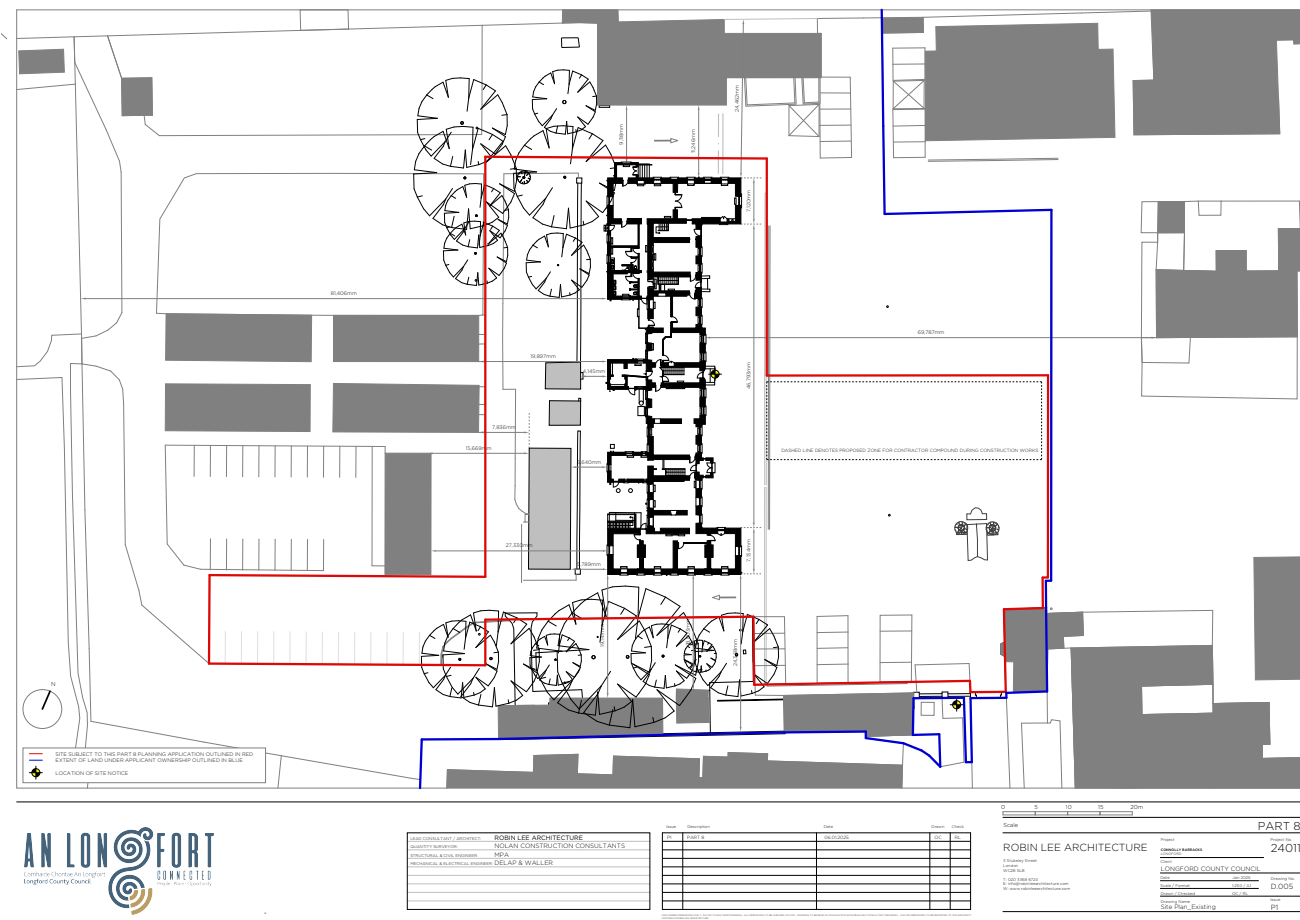
3.2 SITE OWNERSHIP

The application site comprising of the Officers Building and immediately adjacent lands sits within a wider extent of lands under the ownership of Longford CoCo as illustrated below (outlined in BLUE). Site plan below illustrates the application Red Line containing an area of 5,687m2 (0.5687 hectares).



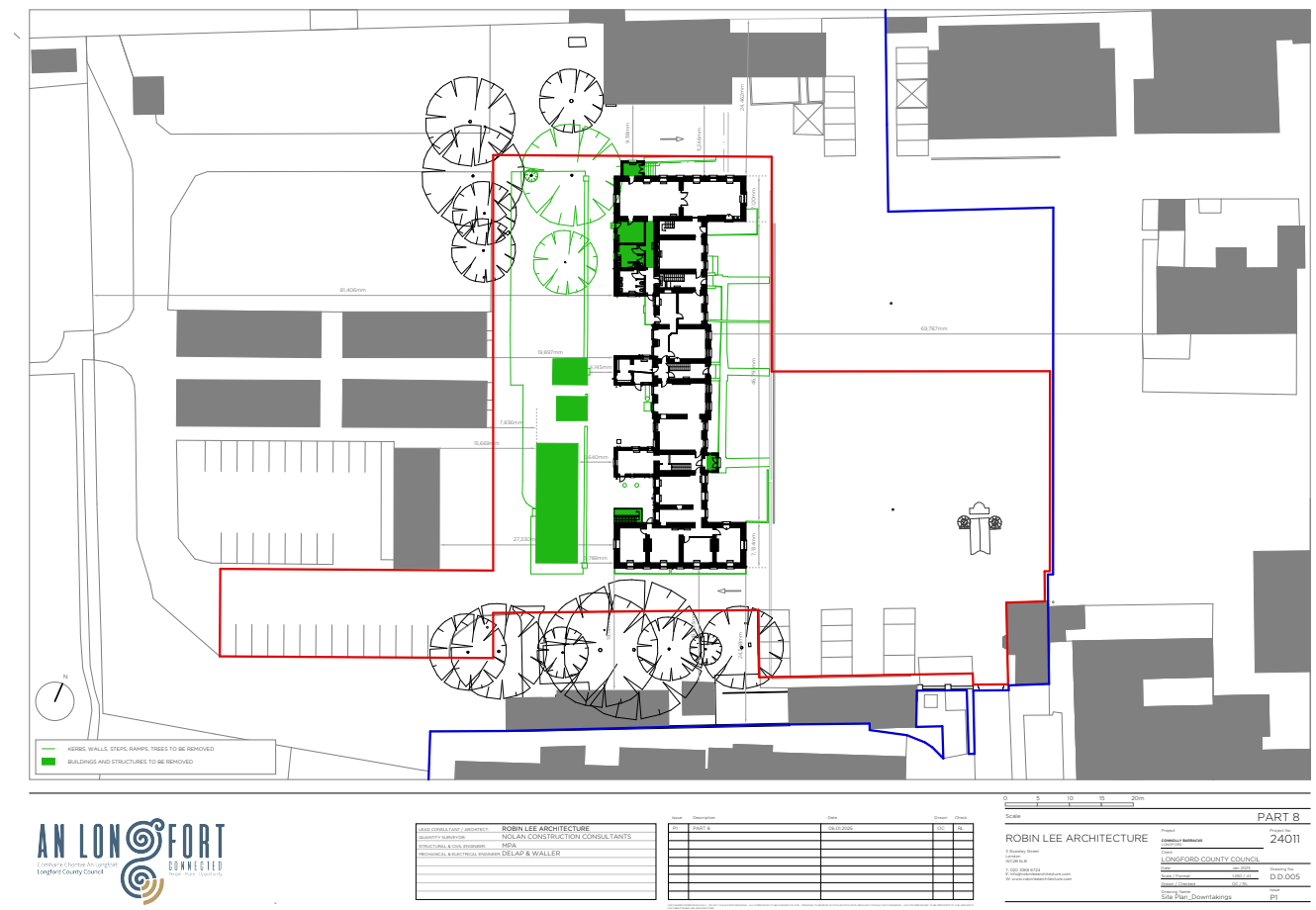
3.3 DEVELOPABLE SITE

Selective removal of structures and extensions attached and detached from the Protected Structure to de-clutter the existing building facades and to enable the development of the proposed rear extension. Opportunities for new extensions to the west of the former Officers Building were identified in order to enhance the rear elevation of the existing building and to allow its development for new multi-purpose use.



Existing Plan

The Red Line illustrates the extent of the application site encompassing the former Officers Building along with attendant lands to the west of the Protected Structure. The Red Line extends to the west to encompass a zone identified for car parking and to the east to allow for a vehicular route into the Connolly Barracks site from Bridge Street in the south and for compound for use during the construction phase.



Downtakings Plan

This plan illustrates the buildings, structures and site features to be removed (in Green). These consist structures such as porches, extensions, buildings and fire escape stairs have been added for utilitarian purposes or other utilitarian structures such as walls and outbuildings that although are of an earlier date are of significantly lower historic value than the H-form Officers Building. Therefore their removal is considered appropriate in the context of the wider benefits to the rear elevation building, the creation of a new 'frontage' to the existing building opening onto the western lands of Connolly Barracks and to the future economic viability of the building as a multi-purpose community building which are made available by their removal.

3.4 HERITAGE CONTEXT

The former Officers Building at Connolly Barracks is a Protected Structure.

It is appraised and described by the National Inventory of Architectural Heritage (NIAH) as:

Description:
Detached nineteen-bay barracks on H-shaped plan, built 1815. Originally in use as main military accommodation building and officers’ mess. Composed of a central five-bay three-storey block, flanked to either side (north and south) by six-bay two-storey ranges, and with advanced single-bay two-storey gable-fronted end blocks. Two-storey returns and single-storey extensions to rear (west). Single-storey extension to north elevation. Porch extension to front elevation (east) of south flanking range. Auxiliary buildings to rear (west). Hipped and pitched slate roofs with cast-iron rainwater goods, rendered and dressed coursed limestone chimneystacks. Roughcast rendered walls with rusticated coursed limestone to ground floor to central and advanced end blocks. Dressed limestone plinth and raised dressed limestone quoins. Dressed limestone string courses, sills and sill courses. Square-headed window openings having timber frame windows with hinged panes. Wyatt windows to front elevation of end blocks at first floor level, now with timber casement windows. Square-headed main entrance opening to centre of main block with replacement glazed timber door, accessed via concrete steps. Situated within the grounds of Sean Connolly Barracks, to the west side of the parade ground and barrack complex, and located to the north of Longford Town centre. Rubble stone boundary wall and complex of single-storey outbuildings to the rear (west).

Appraisal:
This monumental, classically-inspired former cavalry barrack building forms the principal element of the Sean Connolly Barrack complex (13008016 – 20). It retains its early character, form, massing and much of its important early fabric. Fine craftsmanship and attention to detailing are evident throughout. It was built to designs by John Behan and was built to provide accommodation for 9 officers and 222 non-commissioned officers and privates. The impressive scale of the building and the repetition of simple, well-proportioned elements create a powerful and striking architectural effect. Its form, with classical proportions, is very typical of the military architecture of the time and similar buildings are to be found at Custume Barracks, Athlone, and at Columb Barracks, Mullingar, dating to the same period. The complex of single-storey outbuildings and the rubble stone boundary wall to the rear complete the setting and add to this fine composition. This building forms the centrepiece of a group of related structures within the Sean Connolly Barracks complex (13008016 - 20) that together represents an important element of the architectural heritage of the area and is of considerable social and historical importance to County Longford. Sean Connolly Barracks is named after Brigadier Sean Connolly, of the Longford Brigade, who was fatally wounded in action in 1921 by British forces during the War of Independence.

Reg No: 13008020

Rating: Regional

Date: 1810 - 1820

Date Recorded: 08/09/2005

Coordinates: 213006, 275708

<https://www.buildingsofireland.ie/buildings-search/building/13008020/sean-connolly-barracks-church-street-battery-road-abbeycartron-longford-longford>

Refer also to Architectural Heritage Impact Assessment, accompanying this application.

3.5 DEFINITIVE PROJECT BRIEF

Based on the Preliminary Project Brief, the Design Team engaged in consultations with the Longford CoCo Project Steering Group. In tandem specialist business consultants AAB Group were engaged in the design process to a strategy for incorporation of appropriate uses for spaces within the existing building and potential new extension that would address community aims while ensuring that the proposed facilities would generate sufficient revenue for future viability purposes. As such AAB Group developed the Preliminary Business Plan that was appropriately benchmarked against example facilities across the country and developing designs were responsive to commercial needs to ensure viability in line with the aims of the business plan.

The Initial Project Brief was therefore developed and refined during the design process and a Definitive Project Brief evolved that was tested and verified against the potential to repurpose the existing building and the potential of the site to accommodate new structures.

Test-fit layouts for the rooms within the former Officer’s Building building were prepared to evaluate the viability of the Preliminary Project Brief, This resulted in the conclusion that the key requirements of the Brief could be accommodated with comprehensive yet sensitive restructuring of the existing building allowing the design proposals to proceed.

3.6 PRE-PLANNING CONSULTATIONS

Pre-Application Consultations took place on an ongoing basis with an Longford CoCo Project Steering Group and identified community and local-area stakeholders between November 2024 and January 2025 with comments incorporated into the developing proposals throughout this period.

On Thursday 12th December 2024 an open public consultation event was held at the Officer’s Mess at Connolly Barracks with formal presentation of the proposed designs. Comments and feedback was incorporated into the developing proposals throughout the following period.

Pre-Application Consultation was undertaken with Longford CoCo planning team on Monday 23rd December 2024 via a formal presentation of the proposed designs.



Public Consultation Event, December 2024

4.0 PROPOSAL

4.1 OVERALL AIMS & OBJECTIVES

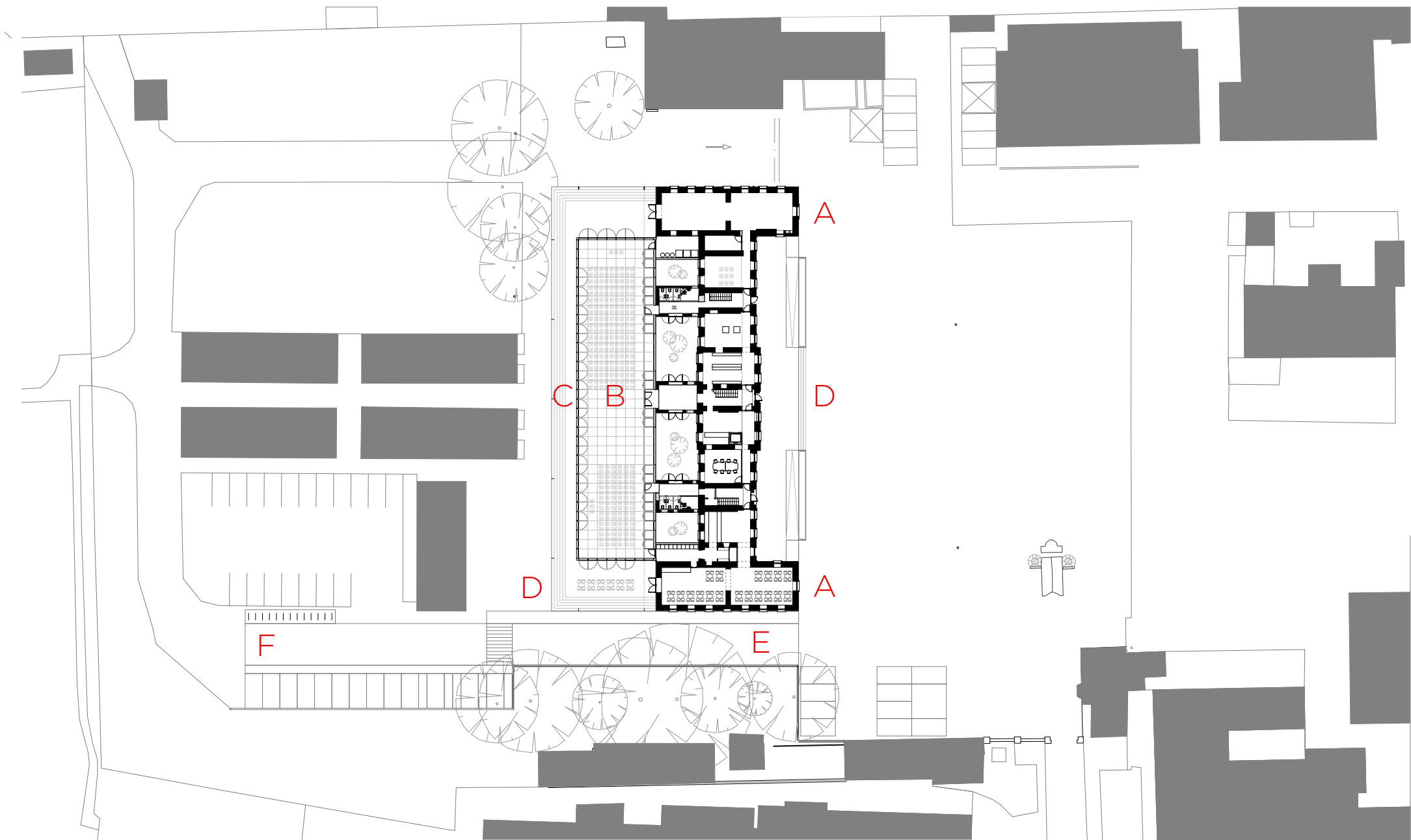
In addition to the project requirements set out in the Preliminary Project Brief the consultations carried out with the Project Team Partners led to the definition of overall aims and objectives for the development, which can be summarised as follows:

- To repurpose the existing historic building on site, namely the former Officer’s Mess for use in support of the creation of multi-use community activities.
- To consider a new-build extension to the existing building to provide for the varying activity needs for the facility as identified through stakeholder consultation.
- To deliver fit-for-purpose spaces to enable the proposed activities.
- To create a new public frontages that gives identity to the new facility as an active and welcoming community-focussed place.
- To enable clear wayfinding for users of the facility and visitors along with universal access to all spaces within the complex.
- To ensure order and appropriate hierarchy to the historic setting so that the retained structures can be appreciated for their quality and historic value.
- To apply conservation principles to the restoration and upgrades of the historic building.
- To de-clutter the site to improve legibility of the historic buildings and setting.
- To develop design strategies and solutions for an energy efficient building to an NZEB standard, using renewables and other low energy strategies.

4.2 SITE STRATEGY

The former Officer's Building is prominent Protected Structure which is a centre piece of the historic Connolly Barracks within Longford town centre. The diagram below illustrates our analysis and design approach:

- A The frontage of the former Officers Building is restored in order to consolidate the building as a key component of the historic core of Longford town.
- B A single storey rear extension is proposed to the western side of the existing building. This is intended to create active frontage to this elevation and provide a flexible hall to support the future use of the building and its financial viability.
- C A generous canopy attached to the rear extension providing solar shading and shelter for outdoor activities..
- D Ramp and stair accesses to raised entrance terraces at the eastern and western frontages allowing a universally accessible entrance route to the existing building and new extension.
- E Enhanced pedestrian route to the main entrance and to the proposed extension.for the car park zone along with resurfacing of road.
- F A dedicated car park zone to the west of the building to accommodate a total of 12no. car parking spaces plus 1no. EV charging bay.



Site Strategy Diagram

4.3 MATERIALS & FINISHES

A refined yet robust palette of exterior and interior finishes is proposed for the new extension as illustrated below.

1.

Exterior Cladding

Anodised aluminium in a dark bronze finish is proposed for new external facades and cladding the exterior of the new-build extension giving a highly durable and high quality finish to these performance components.
2.

Door and Window Framing

Anodised aluminium in a dark bronze finish is proposed for new door and window assemblies to the exterior of the new-build extension giving a highly durable and high quality finish to these performance components.
3.

Internal Floors

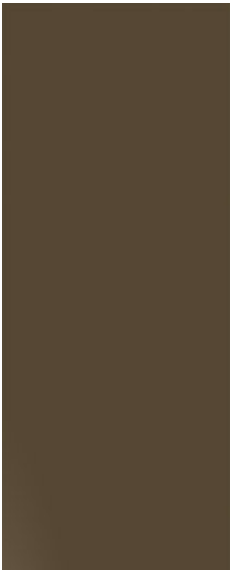
Polished terrazzo with natural stone aggregates is proposed for the floor of the new-build extension with a suitable slip-rating specified. This hard floor finish is highly durable and able to withstand the varied activities that will be catered for.
4.

Internal Structure and Linings

The need for a relatively large clear span for the flexible multi-purpose extension combined with the requirement to create a low carbon building solution leads to a timber framed structural solution as outlined on the following pages. The proposal is for the structural elements (combined with steel for larger spans) to be exposed in timber and for matching timber finishes to be selected for internal linings. Timber from certified and sustainable sources will be selected as part of an overall sustainable building strategy.



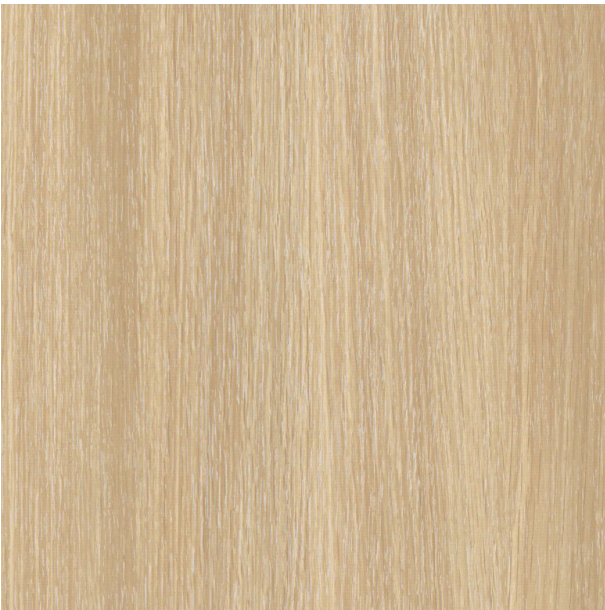
1



2



3



4

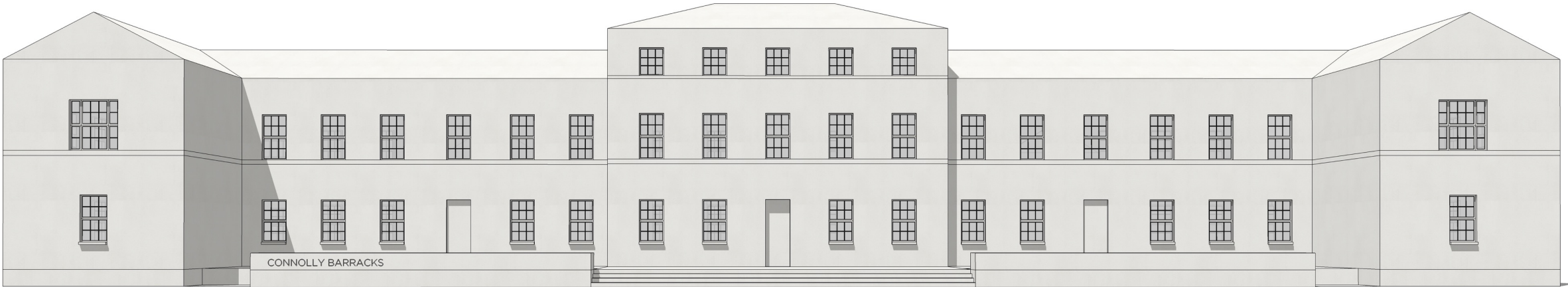
4.4 ELEVATION TREATMENTS



View of proposed elevation of the eastern and western frontages.

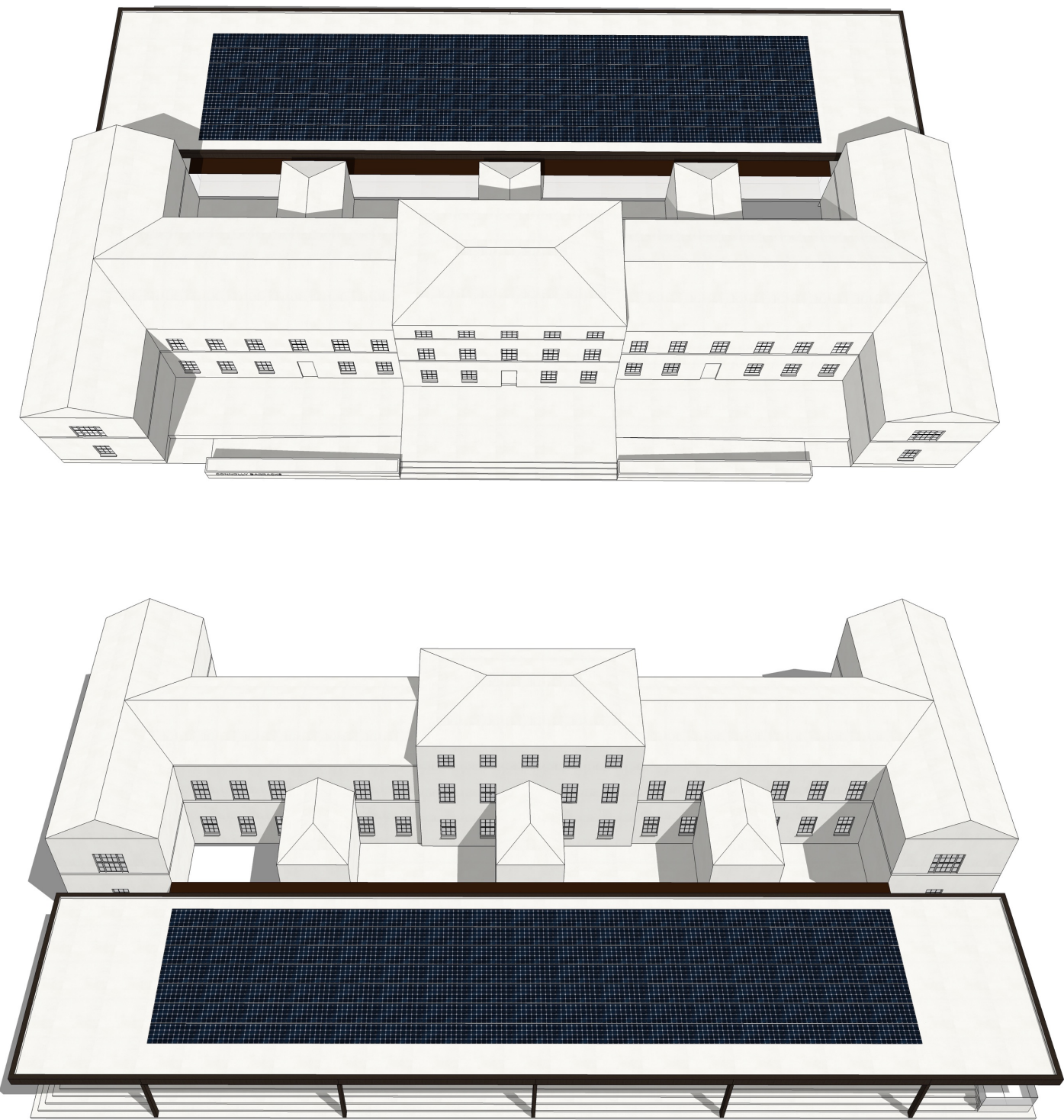
Application of conservation principles will be applied to the east elevation with window assembly refurbishment and reinstatement, removal of material not contributing to the significance of the building and new entrance forecourt. The proposed western extension is comprised of singular and legible building form that is deferential in height and massing to the existing building with a generous canopy set below the string course of the existing building shading extents of glazing that are in counterpoint to the enclosed solidity of the existing building. The canopy extends the full width of the existing west elevation giving unity to facade otherwise composed of a collection of projecting wings and annexes. The height of the extension does however allow these built forms along with the central range of the Officers Building to be visible above the proposed roof line datum. A raised activity terrace is provided with stepped and ramped links to the existing site levels to the west contributing to a welcoming and inclusive identity and accessibility to the new extension and thereby to the facility as a whole.

4.5.1 BUILT FORM IN CONTEXT _ 3D VIEWS



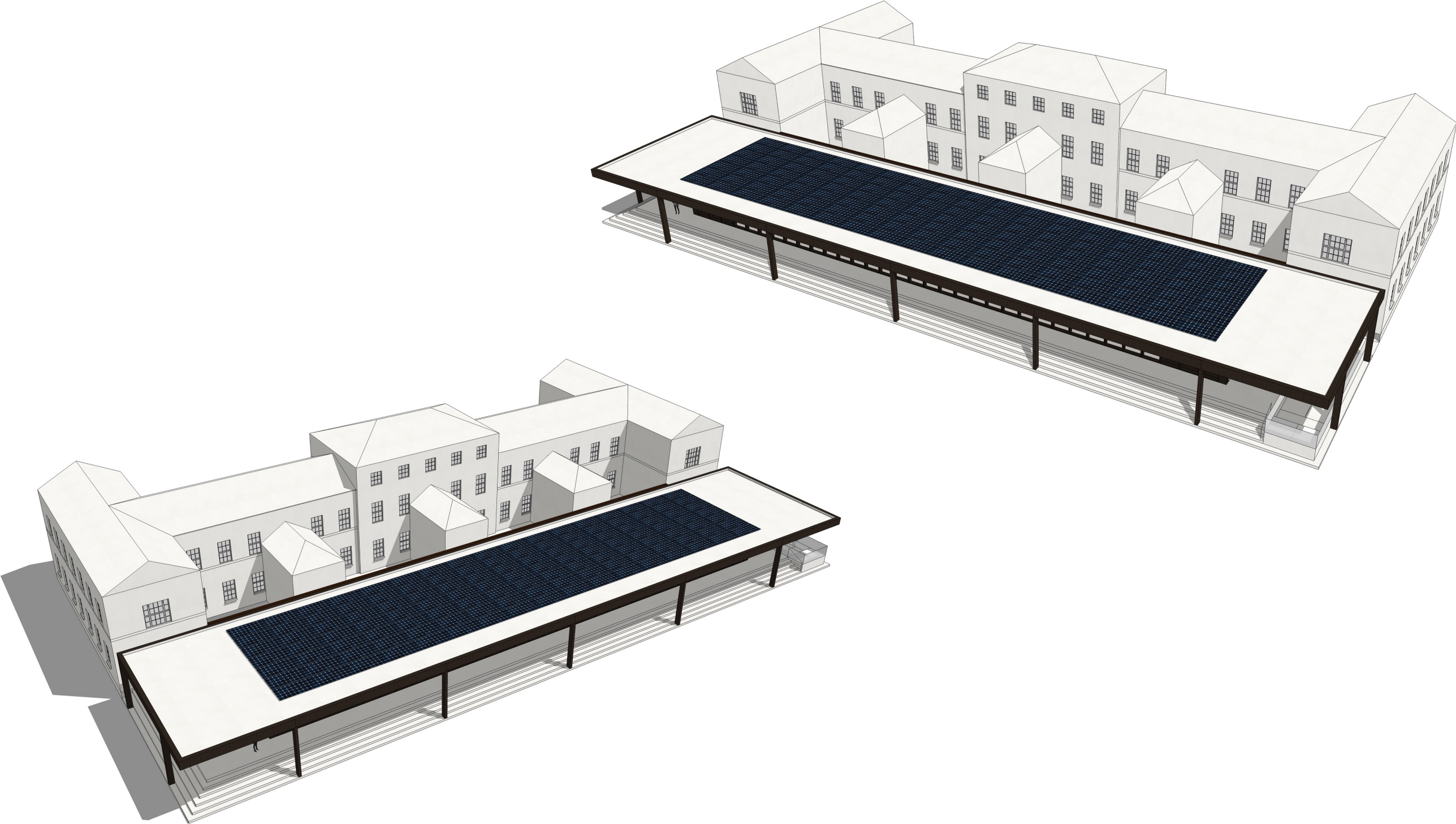
3D view from east showing proposed new entrance terrace with steps and ramps to provide universal access to the existing building and outdoor activity space.

4.5.2 BUILT FORM IN CONTEXT _ 3D VIEWS



3D aerial view from east and west showing relationship of proposed extension to existing building. Note solar photovoltaic panels provided on roof of extension for passive energy generation strategy.

4.5.3 BUILT FORM IN CONTEXT _ 3D VIEWS



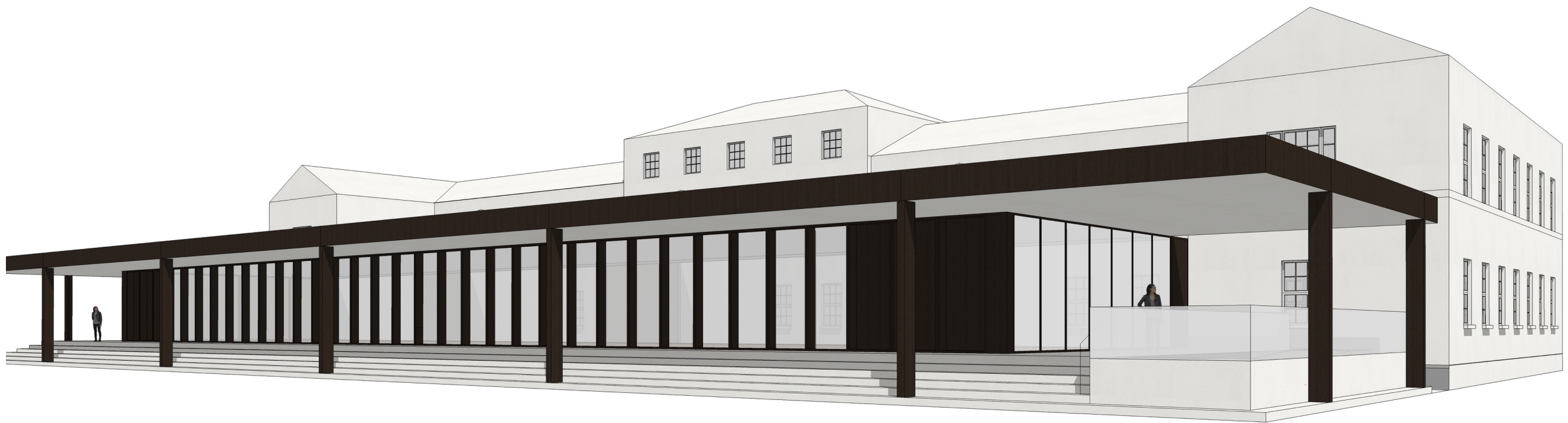
3D aerial views from south west and north west showing proposed new-build extension and former Officers Building in background. Generous canopy provides solar shading and shelter for outdoor activities.

4.5.4 BUILT FORM IN CONTEXT _ 3D VIEWS



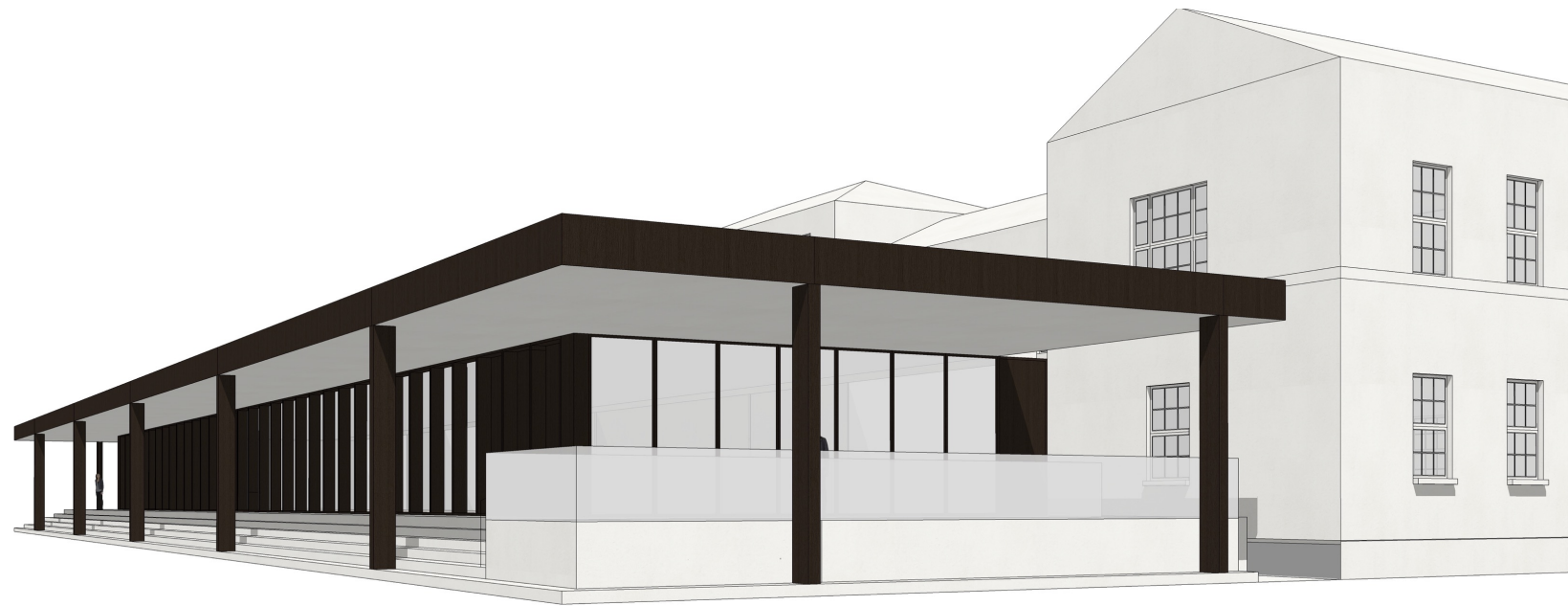
3D view from west showing proposed new-build extension and former Officers Building in background. Stepped and ramped access is provided address site levels allowing for elevated outdoor activity spaces. Generous extents of glazing allow views into and out from the flexible multi-purpose spaces within while the canopy allows for solar shading and covered outdoor activity spaces.

4.5.5 BUILT FORM IN CONTEXT _ 3D VIEWS



3D view from west showing proposed new-build extension and former Officers Building in background.
Ramped access is provided at the south west corner for ease of access and movement supporting the step-free entrance strategy to the building.

4.5.6 BUILT FORM IN CONTEXT _ 3D VIEWS



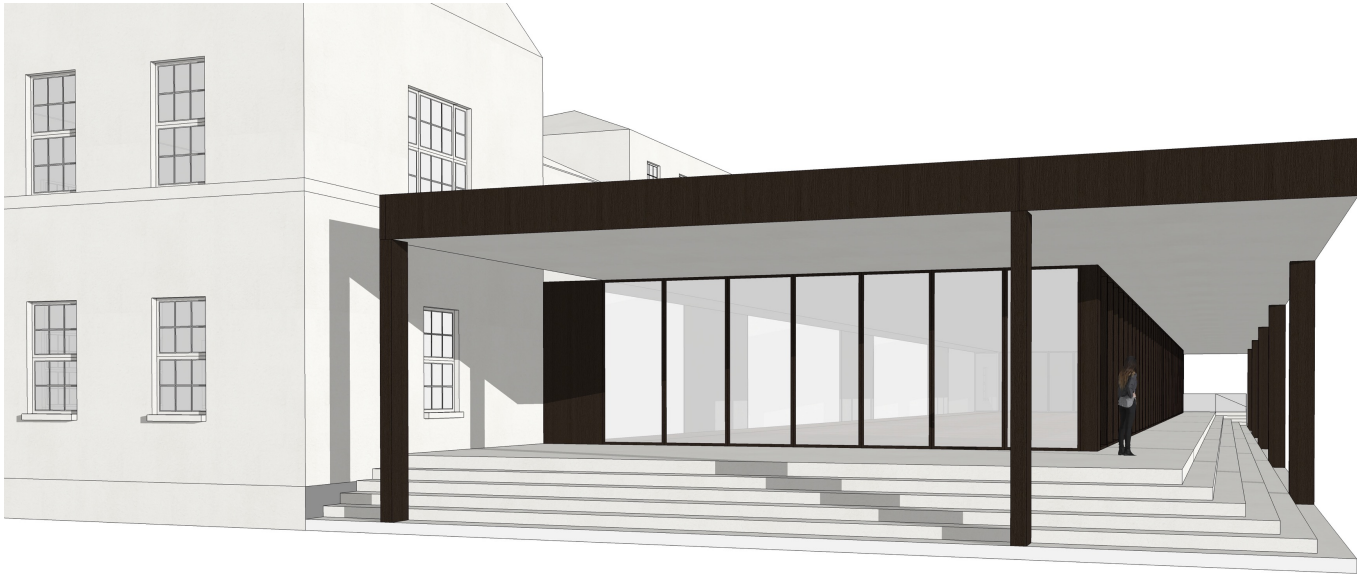
3D view from west showing proposed new-build extension and former Officers Building in background.
Ramped access is provided at the south west corner for ease of access and movement supporting the step-free entrance strategy to the building.

4.5.7 BUILT FORM IN CONTEXT _ 3D VIEWS



3D view from west showing proposed new-build extension and former Officers Building in background.
A large covered outdoor activity space is provided at the north west corner with steps leading down to the existing site levels to the west.

4.5.8 BUILT FORM IN CONTEXT _ 3D VIEWS



3D view from west showing proposed new-build extension and former Officers Building in background
A large covered outdoor activity space is provided at the north west corner with steps leading down to the existing site levels to the west.

4.6 SUSTAINABLE LANDSCAPE STRATEGY

Sustainable drainage systems (SuDS) are drainage solutions that provide an alternative to the direct channelling of surface water through networks of pipes and sewers to nearby watercourses. By mimicking natural drainage regimes, SuDS aim to reduce surface water flooding, improve water quality and enhance the amenity and biodiversity value of the environment. SuDS achieve this by lowering flow rates, increasing water storage capacity and reducing the transport of pollution to the water environment. The need for alternative drainage such as SuDS is likely to increase to meet environmental challenges such as climate change and population growth.

In natural environments, rain falls on permeable surfaces and soaks into the ground; this process is called infiltration. In urban areas, where many surfaces are sealed by buildings and paving, natural infiltration is limited. Instead, drainage networks consisting of pipes and culverts divert surface water to local watercourses. In some cases, this has resulted in downstream flooding and deterioration in river water quality. This is caused when foul sewers are overwhelmed by surface water, leading to a release of dirty water into rivers.

SuDS aim to alleviate these problems by:

- storing or re-using surface water at source
- decreasing flow rates to watercourses
- improving water quality

SuDS use a sequence of techniques that together form a management train. As surface water flows through the system, flow velocity is controlled and pollutants are removed. The management train may include the following stages:

- source control methods that decrease the volume of water entering the drainage/river network by intercepting run-off water on roofs for subsequent re-use (e.g. for irrigation) or for storage and subsequent evapotranspiration (e.g. green roofs)
- pre-treatment steps, such as vegetated swales or filter trenches, that remove pollutants from surface water prior to discharge to watercourses or aquifers
- retention systems that delay the discharge of surface water to watercourses by providing storage within ponds, retention basins or wetlands, for example
- infiltration systems, such as infiltration trenches and soakaways, that mimic natural recharge, allowing water to soak into the ground

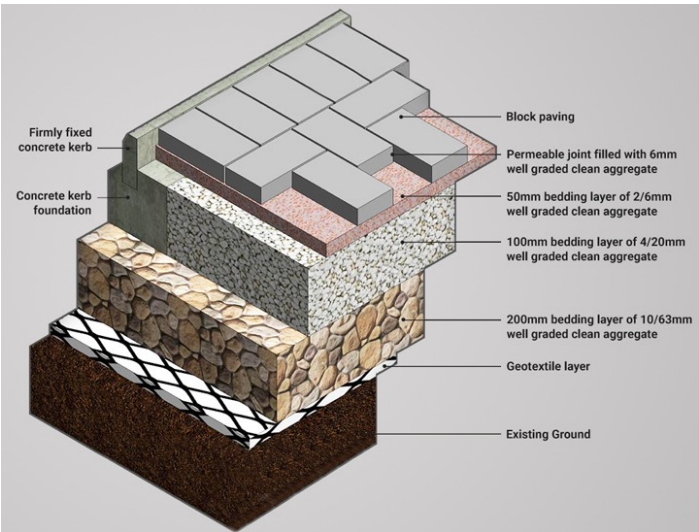
British Geological Society

The proposed SuDS system within the raised forecourt of the former Officer’s Mess building will utilise the following strategy:

Replacement of hard impermeable surfacing to vehicular areas, namely the large extents of tarmac to the front of the existing with permeable surfacing which are suitable for service vehicle r traffic yet allow surface water to percolate through the surface layers. This has the benefit of reducing the amount of water to be managed by the surface water drainage system. Open jointed natural stone paving is proposed as a high-performance SUDS compliant system utilising a porous jointing mortar and a porous aggregate base.



Natural stone paving combined with permeable mortar and bedding.



4.7 NZEB STRATEGY

INTRODUCTION

At Stage (ii) a Part L assessment and BER report to show NZEB compliance will be prepared based on the following:
The proposed building fabric thermal performance will be based on the current best practice, TGD Part L compliance and is also aligned with the NZEB (Nearly Zero Energy Buildings) recommended fabric performance.

The glazing performance will be based on the current best practice to comply with all aspects of TGD (Technical Guidance Document) Part L (2017) of the building regulations and also aligned with the NZEB (Nearly Zero Energy Buildings) recommended glazing performance guidelines.

The M&E services in particular the HVAC (Heating, Ventilation and Air Conditioning) and lighting performance parameters will be based on “Best Practice” and the plant efficiency values are “Best in Class”. This will achieve significant improvements within the overall Building Energy Rating.

The BER model will assume Photovoltaic (PV) renewable technologies with the addition of Air to Water Heat Pumps which is defined as a renewable technology in TGD Part L.

Energy efficiency shall be a critical part of the design, therefore in conjunction to the energy efficient façade, intelligent HVAC and lighting systems shall also be specified for this project.

NEW BUILDING FABRIC PERFORMANCE - OPAQUE BUILDING ELEMENTS
For new build elements the following U-values have been determined for the project:
External Walls: 0.18 W/m2K
Roof: 0.1 W/m2K
Floor: 0.13 W/m2K

The U-values specified above are in line with the Building Specification for NZEB. These improved building fabric performance parameters are used to aid compliance with the TGD Part L 2017 Standard for non- Domestic Buildings.

GLAZED ELEMENTS
Curtain Walling Glazing: 1.3 W/m2K

The glazing performance specified in the table above is line with the Specification for NZEB as well as current industry best practice. The glazing thermal and solar performance for the building is to comply with the TGD Part L 2017 Standard for Non-Domestic Buildings.

BUILDING AIR PERMEABILITY
Building will be assumed to have an air tightness target of 3m3/h/m2. It is deemed good practice to achieve this for NZEB compliant new builds.

MECHANICAL PLANT PERFORMANCE
An Air/ Water Split-Style Heat Pump is proposed as the primary central heating source.
This will be designed on the basis the central heating is a wet system using underfloor heating pipework with a high level of efficient zonal control on the system.

Instantaneous Electric Water Heating is proposed. This would be on the basis that hot water will be available locally & instantly at the point of use for all hot water outlets.

An Air Conditioning System using VRF would be included to allow additional cooling if required to the building. The Air Conditioning System could also be set to heating mode if required.

To aid compliance with the NZEB requirement for the building the HVAC systems are to be sub-metered. The sub-metering of HVAC systems is a recommended strategy in achieving compliance

Air Supply and Extract systems would use a specified Ventilation Unit with Heat Recovery (MVHR). This system will supply and extract air from the building via wall louvres making up part of the building façade. To aid efficiency the heat recovery side of the ventilation unit will add to the heating requirement for the building. This will save on the overall heating costs.

Ductwork & AHU Leakage will be tested & certified to CEN Standards. Minimum heat recovery efficiency required to satisfy the Eco Design Directive.

ELECTRICAL PLANT PERFORMANCE
To aid NZEB compliance for the building electrical systems will be selected to help improve the building efficiency. Efficient LED Lighting & intelligent controls such as photoelectric controls and occupancy sensing would be applied to all areas of the building.

To further aid efficiency sub-metering of the lighting might be considered.

To achieve final NZEB compliance in relation to EPC, CPC & RER values a PV Panel array is proposed.

4.8 ACCESS & PARKING

12no. dedicated car parking spaces are provided within the application site. These spaces include 2no. accessible parking spaces and additionally 1no. EV charging point / parking space.

The designated parking zone is to the west of the existing building within an area of existing hard-standing. An enhanced route from this zone will be provided via resurfacing existing hard-standing leading directly to a stepped and ramped access route to a raised western terrace as part of the proposed extension and a continuation of this route to a stepped and ramped access route to a raised eastern terrace in the form of a forecourt to the frontage of the Officer's Mess building.

The town centre location of the Connolly Barracks complex is such that the Officers Building is accessible to existing public transport networks including bus and train infrastructure. Additionally Longford town accommodates a significant number of public and semi-public car parking spaces within car parks within the town centre and all within walking distance of the Connolly Barracks complex, as illustrated below.



4.9 ACCESSIBILITY STRATEGY

The design proposal has been developed in consultation with MJP as the Access Consultants for the Design Team. This process has included an assessment of the proposed layout plans for the building and the public realm proposals.

The design has been developed according to the principles of universal access and the provisions of the Building Regulations TGD Part M Access for people with Disabilities (2010). It is noted that the existing building as a Protected Structure will have certain limitations to compliance with all requirements included in the Building Regulations TGD Part M. A Disability Access Certificate application will be submitted to Longford County Council following the conclusion of the Part 8 process.

Key elements within the accessibility strategy include:

- Ramp access from the former parade yard levels to a raised entrance forecourt / terrace which in turn is level with the existing building finished floor level (FFL). This allows a universally accessible entrance route to the original entrance doors on the east elevation of the building.
- Ramp access from the existing levels at the south west of the building to a raised secondary entrance forecourt / terrace which in turn is level with the existing building finished floor level (FFL). This allows a universally accessible entrance route to the proposed new extension on the west elevation of the building.
- Lift access communicating with each of the three principle floor levels in the building allowing a universally accessible route to all principle spaces within the existing building. The only exception to this provision will be access to the upper level the rear annexes to the rear of the building which are accessed from the half-landings of the historic internal stairs. Consequently these are designated as storage / archive rooms associated with the museum offerings which will due to their function will not be publicly accessed.

4.10 FIRE SAFETY STRATEGY

The design proposal has been developed in consultation with MJP as the Fire Safety Consultants for the Design Team. This process has included an assessment of building occupancy, stair locations and arrangements including provision of protected corridors, compartmentation, refuges, escape route and width criteria, final exit provisions and travel distances.

The design has been developed according to the principles of universal access and the provisions of the Building Regulations TGD Part B. It is noted that the existing building as a Protected Structure will have certain limitations to compliance with all requirements included in the Building Regulations TGD Part B. A Fire Safety Certificate application will be submitted to Longford County Council following the conclusion of the Part 8 process.

4.11 MAINTENANCE

Existing facades will be stripped of existing cement-based render and re-rendered in lime render to allow the external walls to 'breathe' avoiding deleterious moisture build up within the building fabric. Combined with breathable internal thermal insulation, membranes and linings these fabric improvements will result in minimal future maintenance being required to the building envelope.

Existing windows and doors throughout the existing building will be refurbished throughout to extend their lifespan with while reducing maintenance requirements. Natural oil wood stains will be used which offer the following maintenance benefits:

- Extremely weather and UV resistant
- Very water and dirt resistant
- Resistant to mould, algae, mildew and fungi
- Reduces wood swelling and shrinkage
- Natural wood grain remains visible
- Microporous, breathable finish which does not crack, peel or flake
- No sanding necessary for future applications

Extents of clear glass are proposed on each elevation. To minimise the maintenance regime self-cleaning glass specifications will be considered at detail design stage. Self-cleaning glass has a thin layer of titanium dioxide which breaks down organic dirt in two stages. The first stage of cleaning is photocatalytic (light activating) and occurs via reaction between UV light and the titanium dioxide coating. Electrons generated convert water molecules from the air into hydroxyl radicals which break down organic dirt into tiny pieces which are washed away by rainwater. The second stage of cleaning is hydrophilic (water activating) and occurs as rainwater hitting the glass spreads out in an even sheet that removes dirt evenly across the whole surface without leaving streaks.

Roof access to the proposed extension is provided via a dedicated access stair from the ground floor plant room. A proprietary weatherproof roof hatch combined an interior ship ladder will give safe and secure access to the roof for service and maintenance personnel.

In relation to the flat roof areas Fall Prevention Cables will be installed set back 2.5m from all exposed roof edges. These cables will allow restrained access to all roof edges for general maintenance (gutter cleaning, roof inspections etc.) while wearing a standard 2m lanyard and prevent operatives getting into a position where they could fall. As the support posts would be set back 2.5m from the exposed roof edge along the perimeter of the roof, the posts will not be visible when viewing the building elevation.

4.12 MATERIAL PERFORMANCE

Bronze anodised aluminium is selected as the external finish of the proposed extension for its long service life and minimal maintenance across its lifespan as summarised below:

- No possibility of fading
Anodised finishes contain no organic elements. No colour fading is possible during the service life of these finishes. Organic powder coatings, on the other hand, are always subject to fading in varying degrees over the lifetime of a building.

- Over 40 years Proven long-term on-site durability
The technology of anodising has been established for almost 100 years. Whilst the process has been continuously refined, especially in terms of quality, the chemical and technological fundamentals remain unchanged. The on-site behaviour of the anodised surfaces produced today is fully predictable, based on the proven, long term, service experience. Independent inspection commissioned by United Anodisers has confirmed that the anodic protection remains undiminished after more than 40 years. The chemistry of organic coating is much more recent and, further, due to legal and environmental constraints, has been subject to continuing modifications. As a result, the long term, on-site behaviour of these modern coatings is not proven. Indeed, even some landmark buildings completed in the last 15 years with organic coatings are already showing signs of surface failure.

- Authentic metallic sheen, lustre and feel
The anodic layer is transparent and integrated in the surface of the metal; the natural metallic appearance and feel of the aluminium are fully preserved. The anodised finish will enhance and reinforce the natural beauty of aluminium to create a living surface constantly interacting with the natural or artificial light playing across its surface. Regardless of the substrate material - aluminium, steel, plastic - a painted surface always has the same, flat appearance. In trying to achieve the authentic metallic lustre of anodised aluminium, painted aluminium uses multi-layer systems with metallic pigments with the risk of creation of colour variations, including metamerism failure.

- Excellent Corrosion Resistance
Even in its natural state, aluminium does not corrode in the same, destructive, way as iron or steel. On the contrary, its natural oxide layer provides a self defence against corrosion. Anodising creates a perfectly formed and scientifically controlled oxide layer, which ensures a surface of unparalleled corrosion resistance and locks in the pure and natural metallic aspect of the metal. It has been used for external building applications for over 60 years. With an appropriate anodic layer thickness for external use, anodised aluminium will perform without problem, even in the most severe environments. In particular, anodised finishes are highly durable in city and marine environments, due to their resistance to chlorides and sulphates.

- Abrasion Resistance
Aluminium oxide is a very hard compound, which is second only to diamond, on the Mohs scale of mineral hardness. Anodised aluminium surfaces therefore offer superior scratch and abrasion resistance than coated surfaces. No risk of adhesion failure

- No risk of adhesion failure
Anodising is an electrolytic process, which transforms the surface of the metal into an oxide layer integral with the metal itself. It is not a coating applied to the surface of the metal. There is, therefore, no risk of adhesion failure such as peeling, blistering, cracking, splitting or chipping which may occur with surface coatings, such as painting. There will be no adhesion failure, even on cut edges or joints.

- No possibility of fading or chalking
Anodised finishes contain no organic elements. No colour fading is possible during the service life of these finishes. Organic powder coatings are always subject to fading in varying degrees over the lifetime of a building. Chalking is the formation of a fine powder on the surface of the paint film during weathering. It can cause significant deterioration in surface appearance, with a reduction in the gloss level, surface lustre and colour. Anodised aluminium does not suffer from this disfiguring condition, even when exposed to difficult exterior environmental conditions, such as marine locations or very sunny and/or humid climates.

- No possibility of filiform corrosion
Filiform corrosion is an attack on the hidden inter-layer between the aluminium and the surface finish which results in the propagation of corrosion under the surface finish. With anodising, the oxide (anodic) layer is integral with the aluminium. There is no inter-layer between the metal and this protective oxide layer. As a result, the finish will remain free from filiform corrosion. If the surface is punctured or damaged, the aluminium will simply repair itself through natural oxidation. The absence of an inter-layer zone ensures that there can be no corrosion as found with painted products.

- Optimal Coverage
Anodising, as an immersion process, achieves a more uniform surface coverage, especially for extruded sections. With spray paint processes and, especially with powder-coating, the non-visible surface is often not coated.

- Highly impermeable anodic layer
A properly sealed anodic layer is impermeable. Furthermore, when severe environmental temperature fluctuations occur, the anodic layer is not subject to damaging physical changes and consequential embrittlement. With an organic coating, these changes may occur when the coating is subjected to temperature cycles above and below its glass transition temperature.

- Environmental benefits of pure anodised aluminium - 100% recyclable
One of the key advantages of aluminium over other materials is that it can be recycled repeatedly through simple re-melting with minimal loss on each cycle. In Europe, more than 30% of aluminium consumption is satisfied with recycled aluminium and over 90% of the aluminium used in buildings is recycled at the end of the building's life. The recycling process requires only 5% of the energy required for the production of primary aluminium - a significant contribution to environmental sustainability. Anodised aluminium is unique, comprising only pure aluminium, its alloying elements and oxygen. As pure aluminium, it is fully recyclable without intervening chemical processes and emissions. Because of this and the ready market for quality aluminium scrap, the anodised aluminium will have a cash value to offset the cost of demolition at the end of the useful life of the building.

- Environmentally friendly production process in accordance with latest environmental standards
Modern architectural anodising plants are capable of responding to the most stringent environmental standards with full chemical recycling and a large recovery of waste water. Anodising does not require environmentally sensitive pre-treatment like chromating. The anodising process does not produce CO2 or solvent emissions.

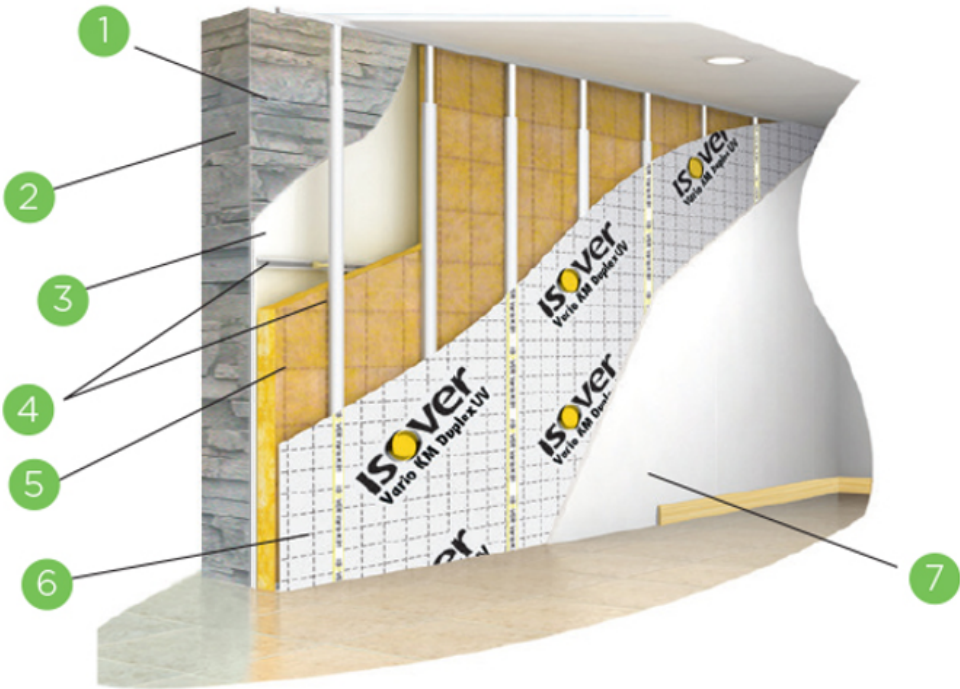
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4.13 THERMAL UPGRADE

The adaption and upgrade of Protected Structures can present conflicting demands in terms of the protection of historic material and the desire to create well performing energy efficient buildings. The upgrade strategy for the Officer's Mess building is to thermally insulate the existing building on the inside of the external walls. this strategy is made possible by the absence of historic features within the existing building that are typically evident within early 19th century buildings such as ornamental plasterwork including cornices, decorative skirting boards, architraves and dado rails. The absence of these features within the building can be attributed in part to its origin as robust and functional military building and in part to the physical transformation of the building over time with associated loss of some original building fabric. The plan and unadorned interiors are evidenced in the photographic documentation contained within the Architectural Heritage Impact Assessment and can be referred to in conjunction with this Report.

Mineral wool insulation is a high performance insulation type that can be combined with breathable membranes to allow external wall upgrades to solid stone walls that are breathable thereby avoiding moisture being trapped in the building fabric. This principle is proposed at the Officer's Mess building coupled with the replacement of cement-based exterior render with lime render. The diagram and in-progress installation photograph below illustrate the elements that make up this thermal upgrade system.

- 1. Lime render to external face of stone wall.
- 2. 600mm stone wall.
- 3. Lime render to internal face of stone wall.
- 4. Metal studs and fixings.
- 5. Mineral wool insulation.
- 6. Breather membrane and tapes.
- 7. Plasterboard



4.14 ACCOMMODATION SCHEDULE

The proposed multi-purpose community facility will occupy the former Officers Building, arranged across three floors:

The developed building as proposed will have a gross internal area of **1,662m²**.

- A ground floor will have a gross internal area of **1,038m²**. 538m² of this area is comprised of the existing building and 500m² comprised of the proposed new-build extension.

- A first floor will have a gross internal area of **538m2**.

- A part second floor will have a gross internal area of **86m²**.

<u>Location.:</u>	<u>Number:</u>	<u>Title:</u>	<u>Total Net (Useable) Room Area:</u>
Ground Floor (Existing Building)	1	Main Entrance	40m2
Ground Floor	1	Cafe	98m2
Ground Floor	1	Kitchen	25m2
Ground Floor	1	Flexible-Use Room	26m2
Ground Floor	1	Reception	33m2
Ground Floor	1	Retail	35m2
Ground Floor	1	Exhibition Room	325m2
Ground Floor	1	Audio Visual Room	30m2
Ground Floor	1	Museum Display Room	34m2
Ground Floor	1	WCs	11m2
Ground Floor	1	WCs	11m2
Ground Floor	1	Store	11m2
Ground Floor	1	Plant Room	20m2
Ground Floor (Proposed Extension)	1	Multi-Purpose Space	500m2
First Floor (Existing Building)	1	Museum Display Room	106m2
First Floor	1	Flexible-Use Room	23m2
First Floor	1	Flexible-Use Room	25m2
First Floor	1	Flexible-Use Room	23m2
First Floor	1	Flexible-Use Room	26m2
First Floor	1	Flexible-Use Room	26m2
First Floor	1	Flexible-Use Room	24m2
First Floor	1	Making Space	103m2
First Floor	1	Store	11m2
First Floor	1	Store	11m2
First Floor	1	Store / Archive	20m2
First Floor	1	Store / Archive	20m2
First Floor	1	Store / Archive	23m2
Second Floor (Existing Building)	1	Technology Suite	29m2
Second Floor	1	Technology Suite	33m2

Western Car Park Area	12no. Car Park spaces (including 2no. Accessible spaces) and 1no. EV Charging space
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ROBIN LEE ARCHITECTURE is the author of this report, except where noted otherwise.
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