



**AN TRIANTÁN,
at STATION ROAD, KILDARE TOWN, CO. KILDARE**

for KILDARE COUNTY COUNCIL
January 2025

REFURBISHMENT FEASIBILITY STUDY



**Comhairle Contae Chill Dara
Kildare County Council**

1.0 Introduction

1.1 Background to this Report

1.1.1 Shay Cleary Architects have assessed the feasibility and technical challenges of refurbishing the derelict cottages.

1.1.2 This assessment includes:

- layout studies for refurbishment and extension,
- impacts of retention on the site layout
- technical interventions needed to return the cottages to a habitable state and to improve the performance of the building envelope

1.1.3 It is shown in this report that retention, refurbishment and retention of the existing cottages would result in a lesser provision of much needed housing, would provide housing of a lesser quality and would not preserve significant heritage value owing to the interventions made of the cottages since their initial construction.

1.1.4 This report is accompanied by an embodied carbon assessment by Cundall, a Built Heritage Assessment by David Slattery Conservation Architects and an Asbestos Survey undertaken by Phoenix Environmental.



Fig. 1. Aerial Photo

2.0 Existing Building Assessment

2.1 Assessment of Existing Accommodation

- 2.1.1 Derelict, formerly habitable area: **87.1m²**
- 2.1.2 Asbestos Containing Materials (ACMs) have been detected in the roof slates.
- 2.1.3 Poor standard of insulation. The wall buildup appears to be rubble construction with no insulation. External insulation is not deemed appropriate due to the proximity of the street facing external wall to the public footpath and legal site boundary.
- 2.1.4 Internal configuration has been significantly altered to amalgamate the cottages into a single dwelling. It is likely that there were three cottages originally.
- 2.1.5 Internal suspended floors have been largely replaced with poured concrete slabs. Remaining suspended timber floors are decayed to a dangerous state.
- 2.1.6 Leaks are apparent in the roof, causing partial collapses in the living area and kitchen. Roof covering require replacement and roof structure likely requires same pending inspection.
- 2.1.7 Damp is evident in most rooms. It is likely that the replacement of suspended floors with poured concrete slabs has contributed to rising damp. Building age indicates there is no barrier to rising or penetrating damp.
- 2.1.8 Room sizes and disposition do not cater for wheelchair users or residents with limited mobility.
- 2.1.9 Rear extensions, outbuildings and adjoining shed are assessed to be later additions, either new additions or replacing historic fabric, and as such are not deemed to be of heritage value. These appear to be of a more modern construction with blockwork walls and bitumen coated flat roofs.

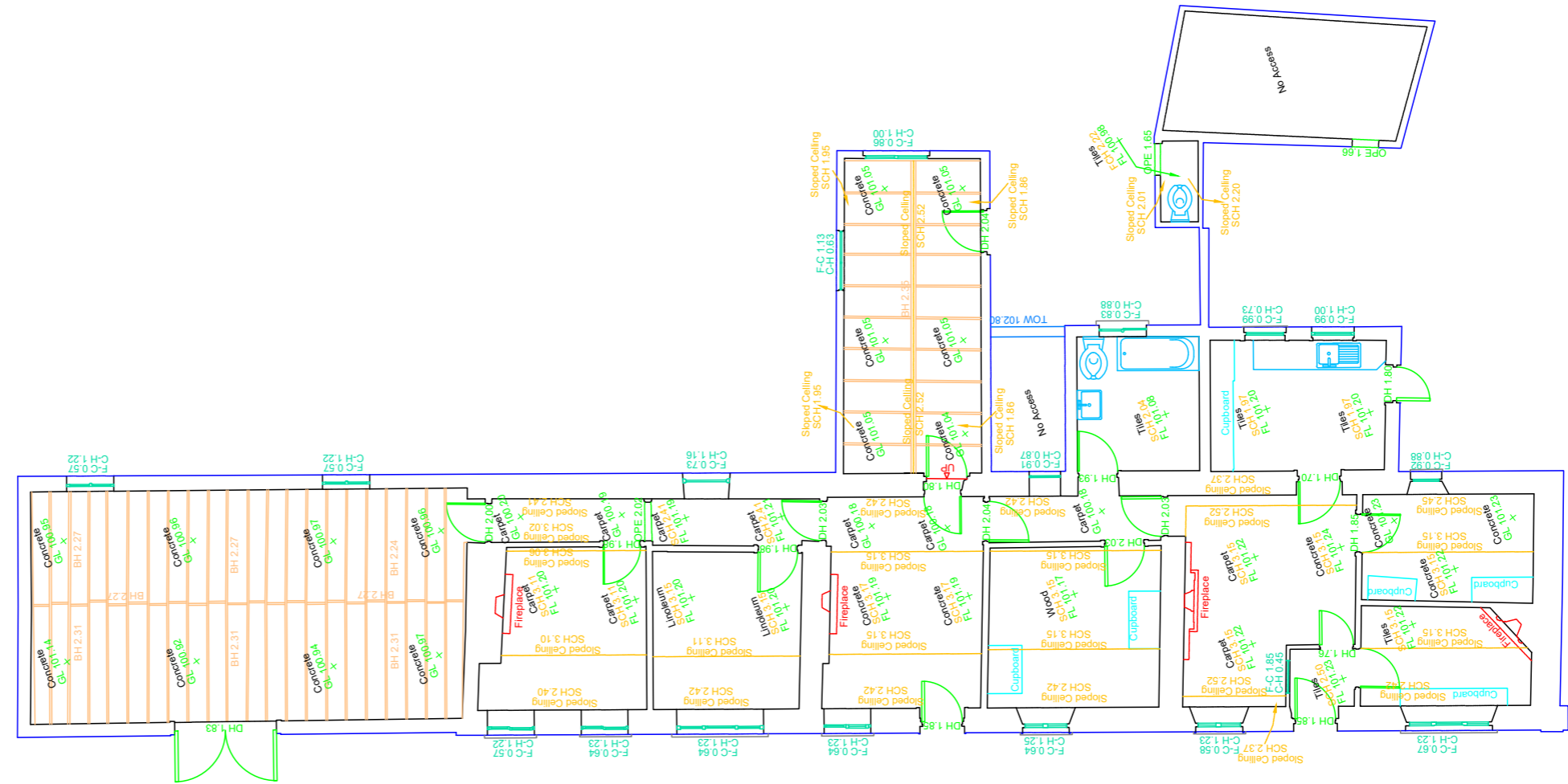


Fig. 2. Measured Building Survey Plan by Apex Surveys

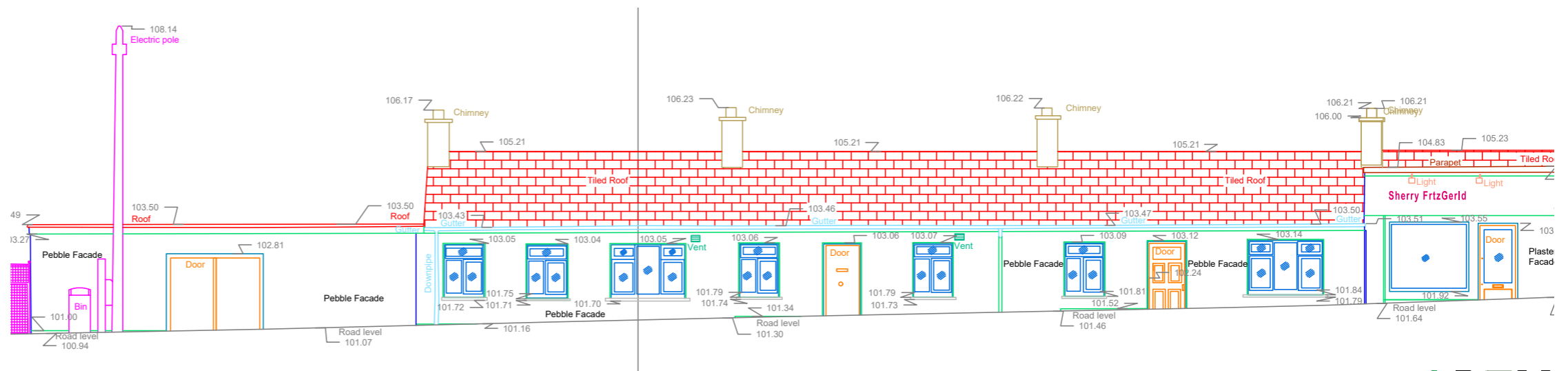
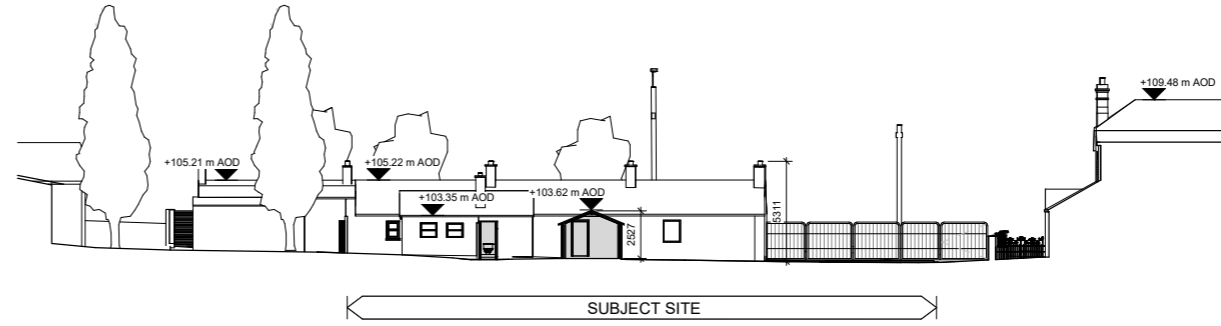


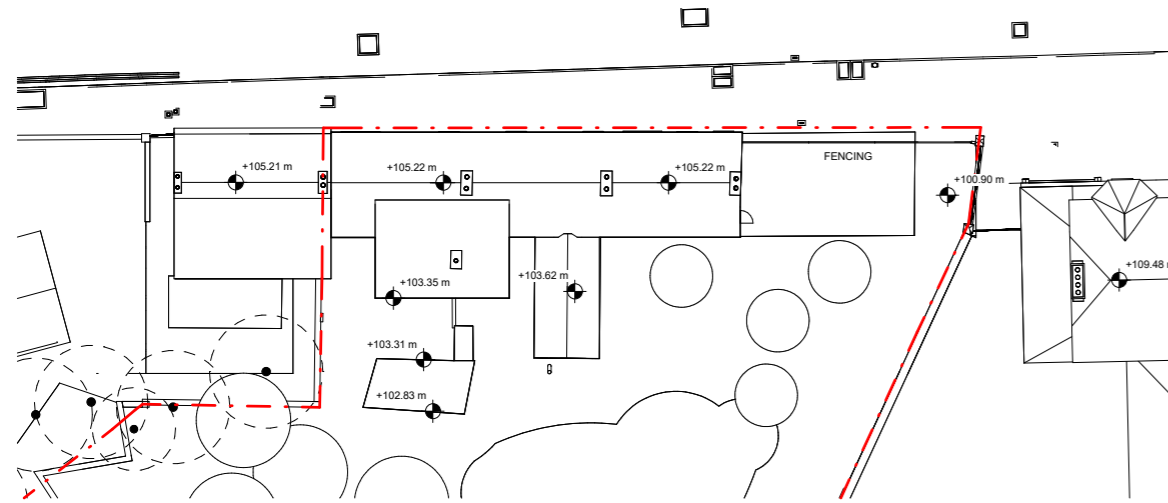
Fig. 3. Measured Building Survey Elevation by Apex Surveys



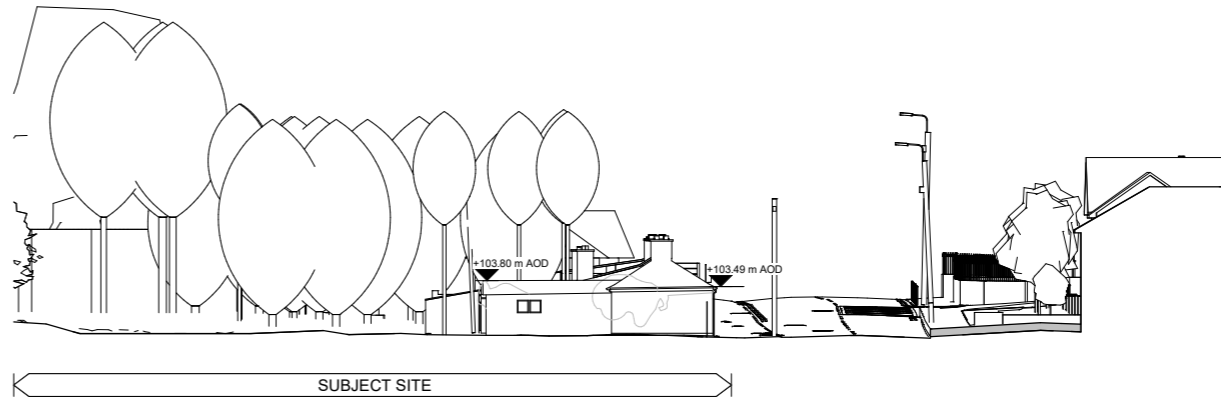
1 Planning - Existing Cottages Ground Floor Plan
1:200



4 Planning - Existing Cottages Rear Elevation
1:200



2 Planning - Existing Cottages Roof Plan
1:200



5 Planning - Existing Cottages Side Elevation
1:200

--- Site Boundary

Approximate extent of Japanese Knotweed infestation as per survey carried out by LK Remediate on behalf of KCC
Approximate Area Above Ground: 466m²
Approximate Volume: 1,239m³

Arborist Survey - Approximate crown area of tree.
Numbering refers to Tree Numbering convention employed in Appendix A: Tree Survey Schedule-Station Road Kildare appended to Impact Assessment Report carried out by Arbor-Care on behalf of KCC

Indicative location of tree not surveyed.

For further information on existing cottages, refer to:

- "Report on the Architectural/Historic Significance of Derelict Cottages on Station Road, Kildare, County Kildare and Associated Lands to the Rear & Observations on the Heritage Value of the Existing Roadside Structures" by David Slattery Conservation Architects

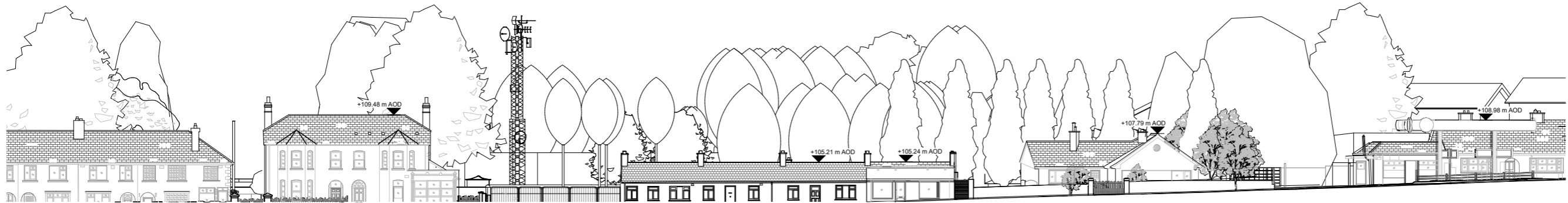




Fig. 4. Photo of suspended timber floor



Fig. 5. Photo of living room ceiling



Fig. 6. Photo of bedroom

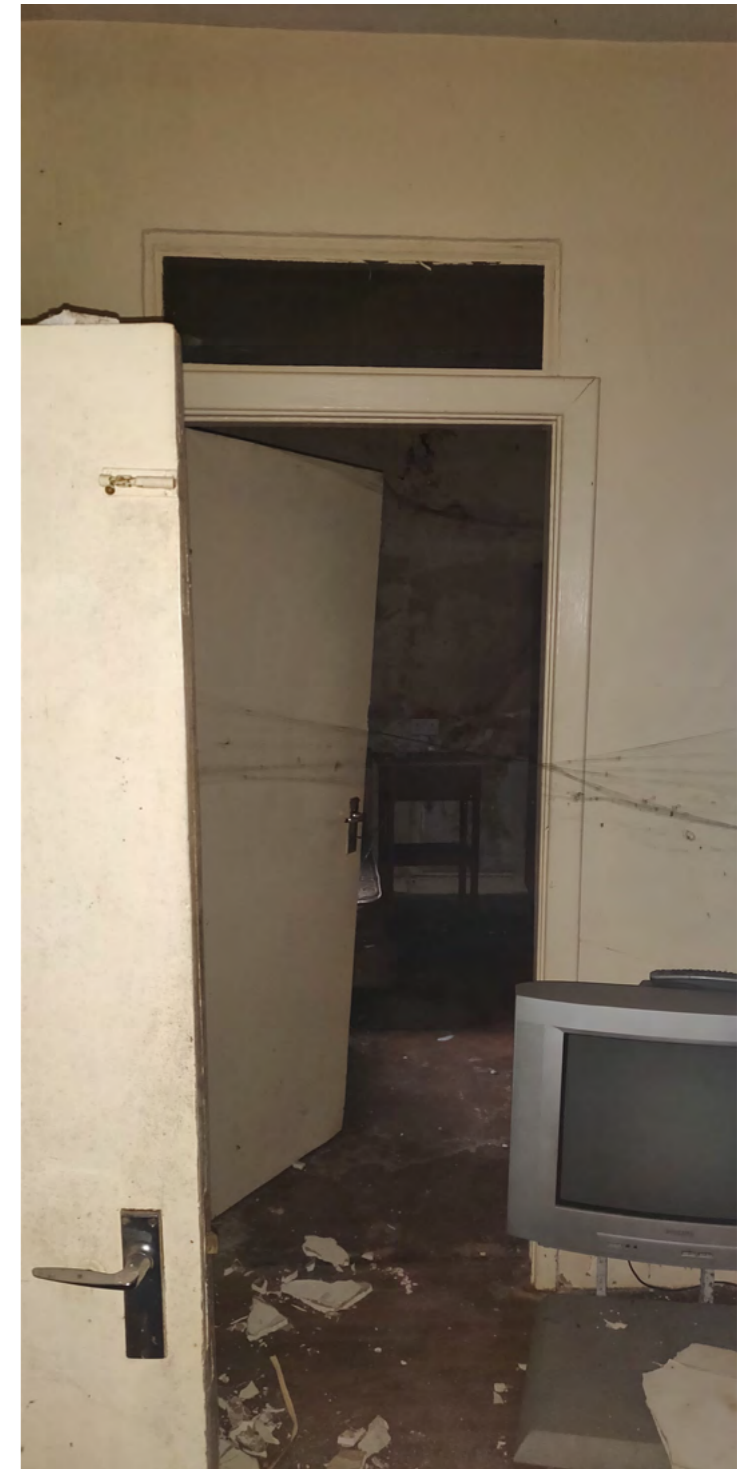


Fig. 7. Photo of bedroom

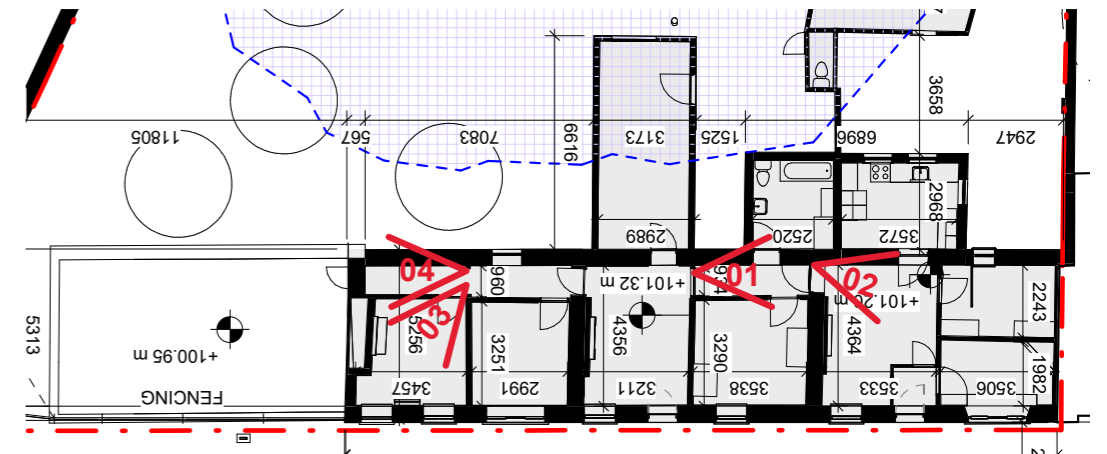




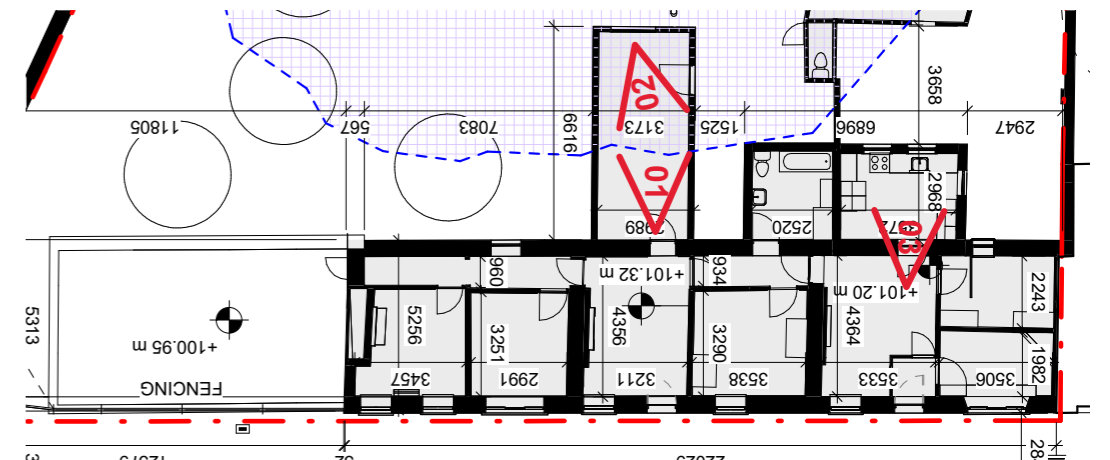
Fig. 8. Workshop view



Fig. 9. Workshop view



Fig. 10. Photo of rear kitchen annex



AN TRIANTÁN, STATION ROAD, KILDARE

3.0 Refurbishment Feasibility

3.1 Assessment of Refurbishment Feasibility

- 3.1.1 The impediments to reuse of the existing cottages are summarized as follows;
- 3.1.2 The existing cottages, formerly in use as a residence and a cobbler's workshop, were originally laid out as three terraces cottages. Following alterations to date, the current layout is a single interconnected dwelling comprising 5 bedrooms, 2 living areas, a kitchen and bathroom extension to the rear and a workshop annex to the rear. There are two entrances onto Station Road to the front.
- 3.1.3 The dwellings cannot be adapted to accord with modern spatial requirements, and their adaptation to retrofitted accommodation would not result in an adequate quality of residential amenity.
- 3.1.4 The adjoining shed, rear extensions and outbuildings are of a poor quality and/or are not suitable for refurbishment, requiring a significant portion of demolition in all cases.
- 3.1.5 Environmental upgrades to the existing structure and systems are possible, but would result in loss of floor area, exacerbating the issues with lack of appropriately sized units and adequate residential amenity.
- 3.1.6 The retention and unsatisfactory adaptation of the existing cottages would compromise the ability of the site to provide a larger number of housing units of a higher standard of quality and amenity, on a site which can support further housing quantum.
- 3.1.7 Furthermore, retention of these buildings would require the redesign of pedestrian and vehicular accessways. This would require vehicles to access adjacent to the neighbouring house, impacting on their residential amenity but also incorporate a limited visibility corner into the access route. As it is intended that this development cater for older

residents or residents with additional needs, this creates a clear safety risk.

- 3.1.8 With the above insurmountable issues thoroughly reviewed and investigated, it is clear that the correct course of action in this case is to pursue the careful demolition of the existing structure and provide new housing, sensitively designed to the highest environmental and qualitative standards.
- 3.1.9 Existing building materials will be incorporated and utilized in the new design proposals where feasible, and a clear strategy for the reuse and disposal of the materials will form a part of the later construction waste management plan at enabling works and construction stage.
- 3.1.10 The existing cottages and the Sherry Fitzgerald offices adjacent appear to have been built as a single terrace of two room cottages. Outbuildings and annexes are likely to be later additions and/or rebuilt historic fabric.
- 3.1.11 The roof structure and covering has been replaced with asbestos slates and the interiors altered to amalgamate the dwellings into a single building. The bay width varies across the 4 individual dwellings, with the Sherry FitzGerald office and directly adjacent cottage the widest at 7.6m approximately.

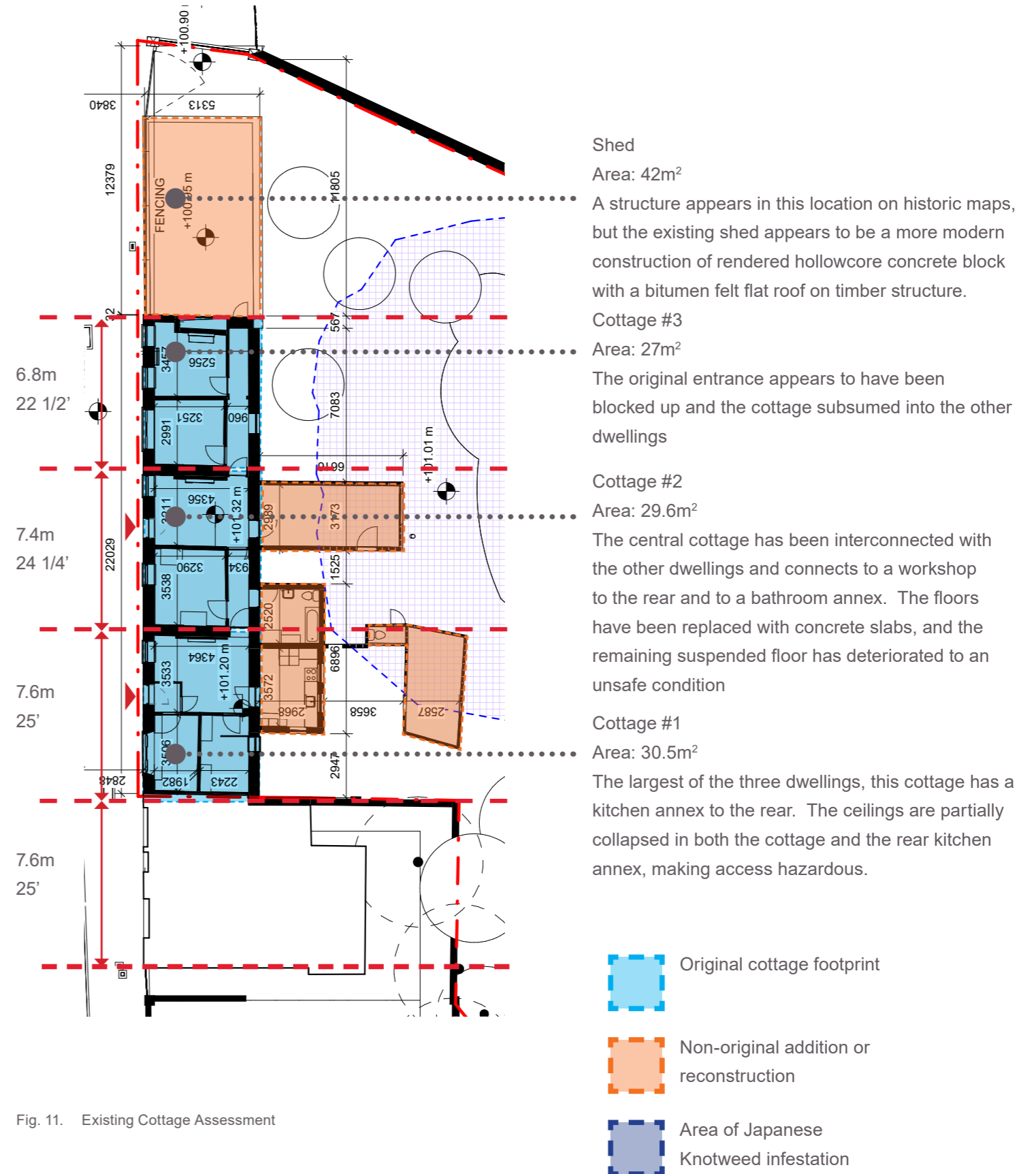


Fig. 11. Existing Cottage Assessment

3.2 Refurbishment Option:

3.2.1 3no. 1 bedroom houses are considered feasible for refurbishment of existing building fabric. This would require omitting 4no. 2 bedroom units from the proposed scheme.

3.2.2 To feasibly refurbish the cottages, a new build extension to the rear of each would be required. The private open space requirement of 48m² and the redesign of site access would impact the overall quantum of housing feasible for the site.

3.2.3 Internal drylining would be required to insulate external walls, reducing available areas. Additional wall vents would be required. Cold bridges would remain at existing party wall locations and floor slab junctions.

3.2.4 Existing floor slabs would need to be excavated to insulate and remediate the damp issues. The roof structure would need to be entirely replaced. Chimney breasts would need to be demolished in places to provide suitably sized rooms.

3.2.5 The technical approach for houses of this form of construction would be to employ breathable natural materials such as insulating lime render, gecell underfloor insulation, limecrete slabs, etc, necessitating additional trades on site, extending working times, and allowing for much longer curing times in materials. This would be best practice for renovation and would impact on both project budget and programme.

3.2.6 Relocation of services routes would be required to accommodate new kitchen & bathroom layouts. New underground service connections required.

3.2.7 Works required to existing walls and roof structure to remove identified ACMs.

3.2.8 Renovated units would not be wheelchair accessible.

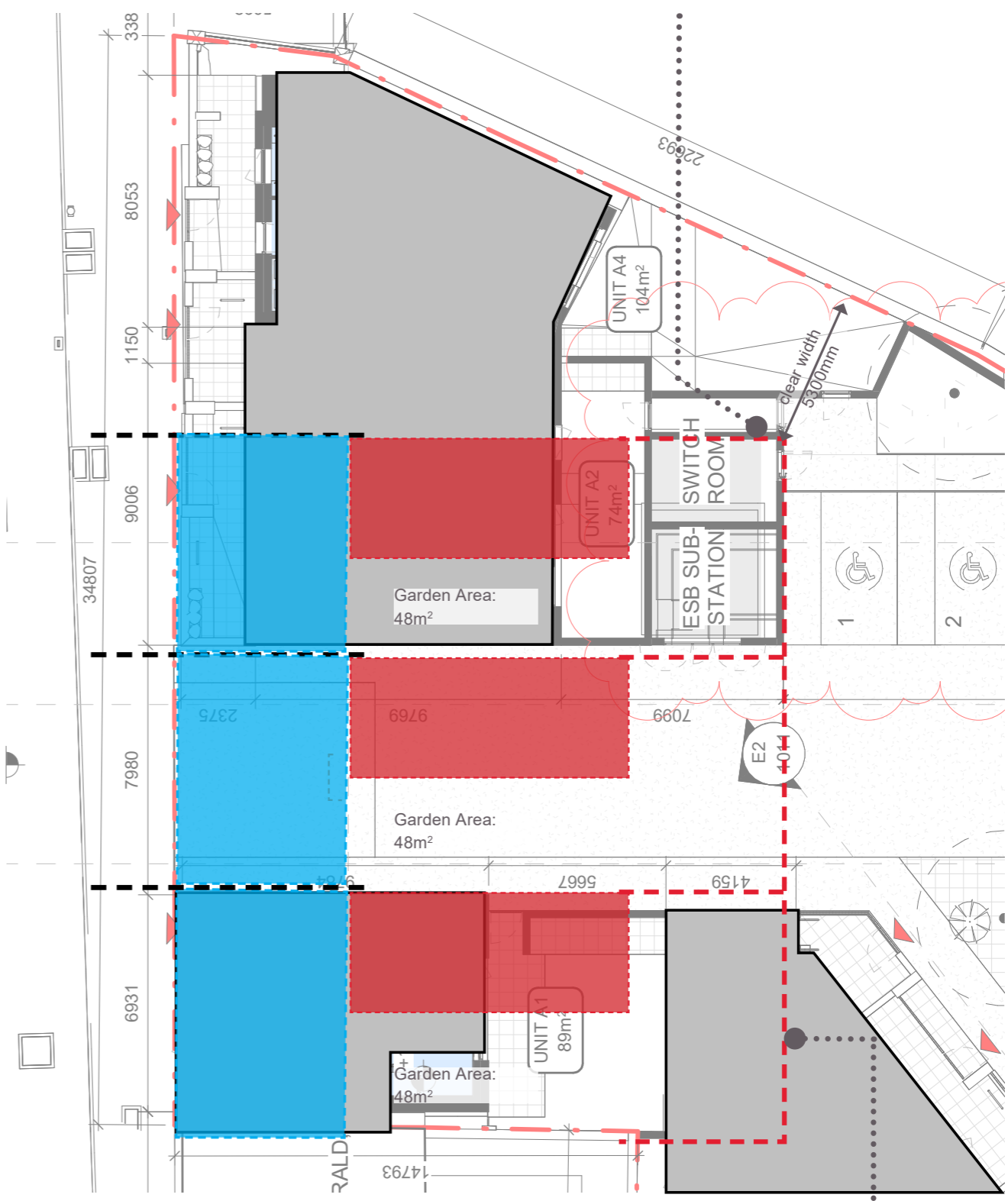
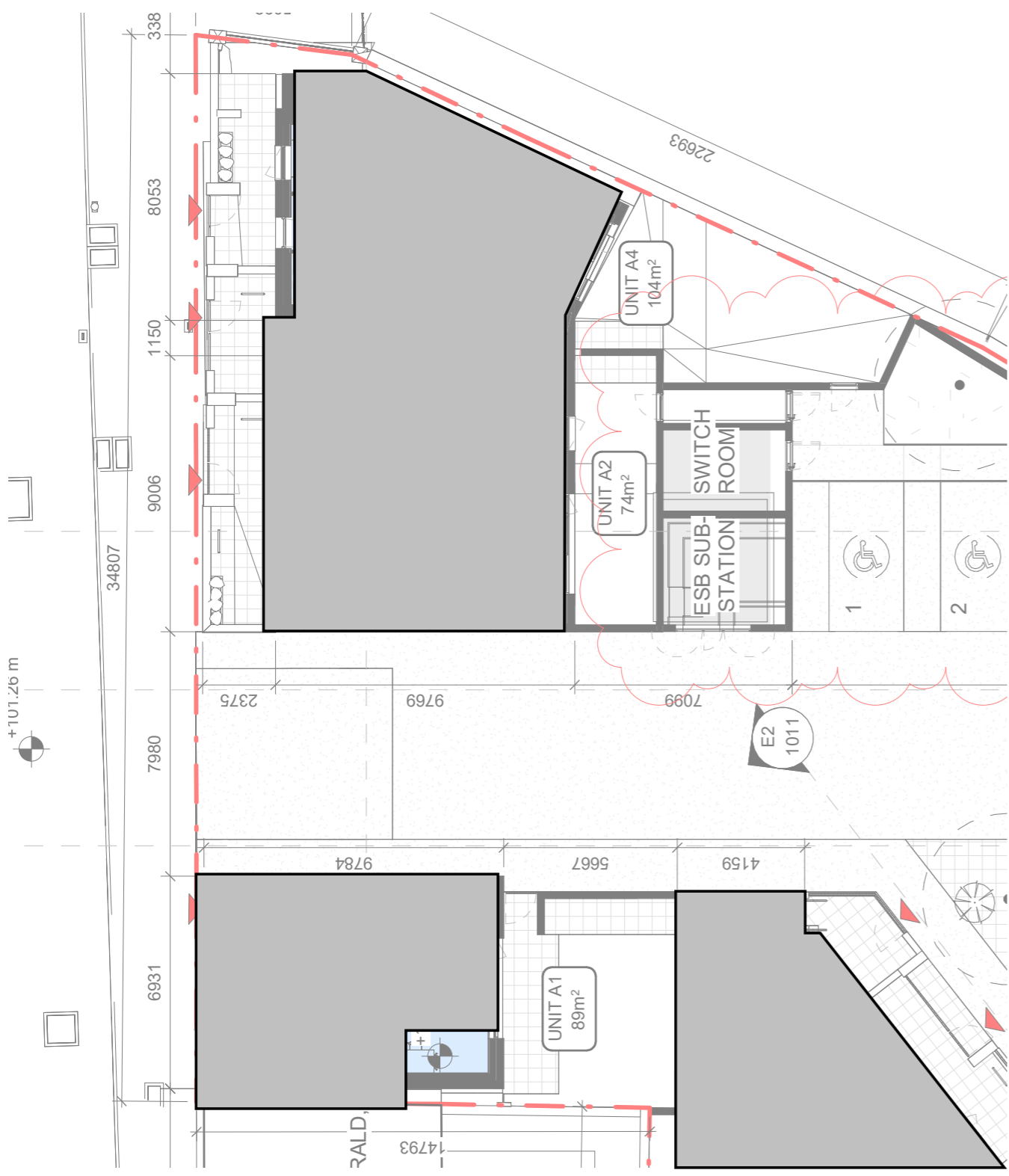


New extension of approx 30m² required to achieve minimum 1 bedroom unit area - 55m² as per the Kildare County Development Plan 2023-2029.

Orange line indicates extent of required dry lining, minimum thickness 160mm comprising 2no. 70mm breathable insulation boards fully bonded to external walls and finish coat of breathable lime plaster. Approximate loss of habitable area is 2-3m² per unit.

Redesigned entrance required - available clear width of 5300mm is not DMURS compliant and makes no allowance for pedestrian access.

Access involves a blind corner creating a safety hazard for all residents



Minimum garden size would require redesign of the corner duplex unit and central public open space

4.0 Embodied Carbon Assessment

4.2.1 The design team have prepared an Embodied Carbon Assessment

1.0 Summary

1.1 Summary

An embodied carbon assessment has been requested for Kildare County Council to assess the feasibility of maintaining the existing cottages on Station Road in Kildare. These cottages may require partial demolition to provide access to the site of the proposed new development, An Triantán. Following a brief, non-intrusive site inspection on 4th October 2023 it was observed that the condition of the existing cottages is very poor with ceilings collapsing, suspended floors rotten, and widespread damp issues.

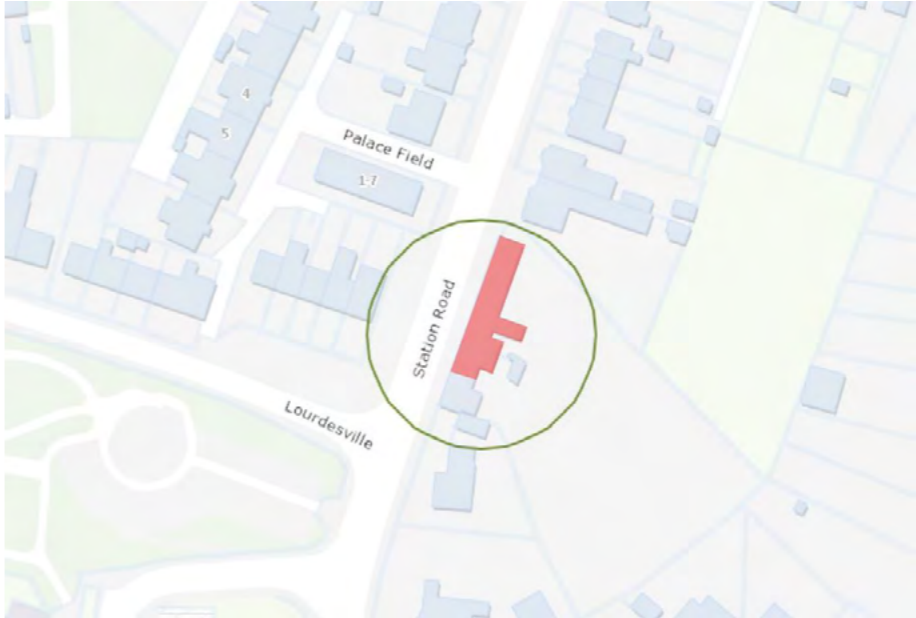


Figure 1: Hatched polygon showing the location of the proposed demolition of cottages on Station Road.

The embodied carbon assessment has been conducted using the IStructE’s Structural Carbon Tool Excel workbook. A "Material Inventory" worksheet has been added to this workbook, which calculates the volumes of material. This calculation is very high level, as the material inventory has been assumed based on observations from the site inspection and typical build-ups for cottages of this era. Dimensions are assumed or measured from the aerial view of the site. This inventory and dimensions can be updated as more information becomes available about the existing cottages and the results of the dimensional survey. The cells are linked to the quantities in the "Scheme" worksheets.

For the purpose of categorising the materials in the building, the zones of the building have been categorised by the following dwelling types:

- 1 No. flat roof shed to the north of the site
- 2 No. original cottages
- 2 No. extensions to rear

An estate agents’ office to the south of the building is not included in this assessment but it appears to have been built at a similar time to the original cottages and if demolition is undertaken, consideration will need to be given to the stability of this building.

Design Note – Embodied Carbon Assessment

Project	Project No.	Date
An Triantán, Kildare	1040805	20/11/2023
Purpose of note	Document No.	Revision
Planning - Further Information	Embodied Carbon Assessment	DRAFT

Document validation (latest issue)

X	X	X
Principal author	Checked by	Verified by

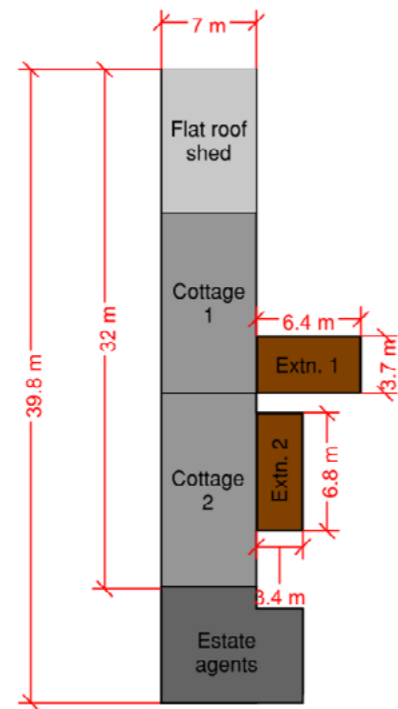


Figure 2: Approximate dimensions of the building to be assessed, excluding the estate agents' office. (TBC following survey information.)

1.2 Scope of Assessment

The scope of this embodied carbon assessment includes elements that cannot be removed and directly reused before demolition e.g., furniture, finishes, building services, etc. These elements are listed in Figure 3. The volumised quantities of each element used in the calculation can be found in the "Material Inventory" worksheet of the workbook.

The embodied carbon factors have been assumed based on tabular values from the IStructE and Institute of Carbon and Energy database.

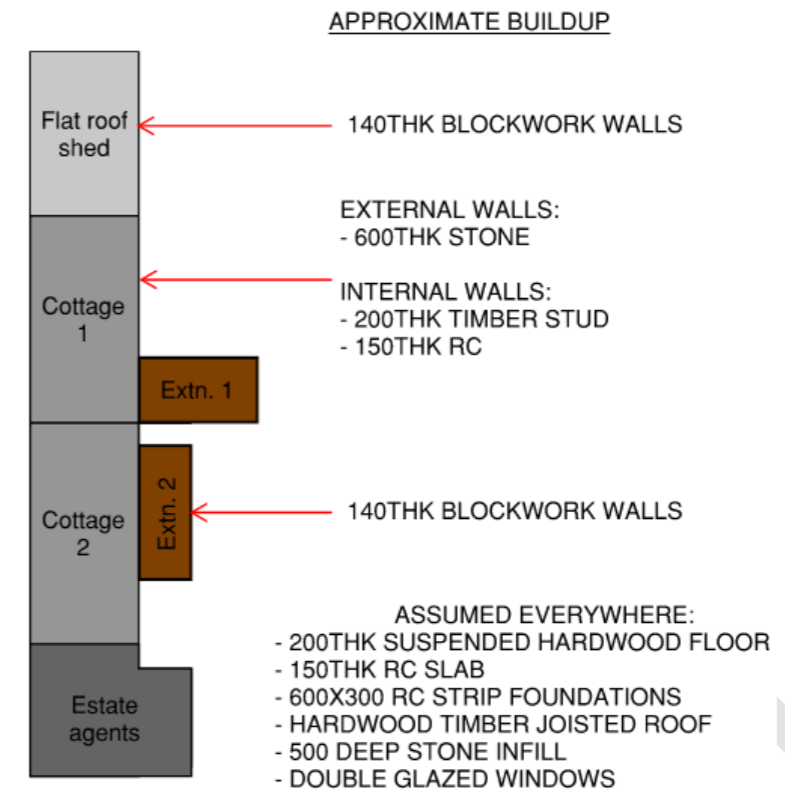


Figure 3: Approximate buildup of the different dwelling types. (TBC)

2.0 Embodied Carbon Assessment

TSCT v2

Scheme name: Stage 2 Existing Cottages

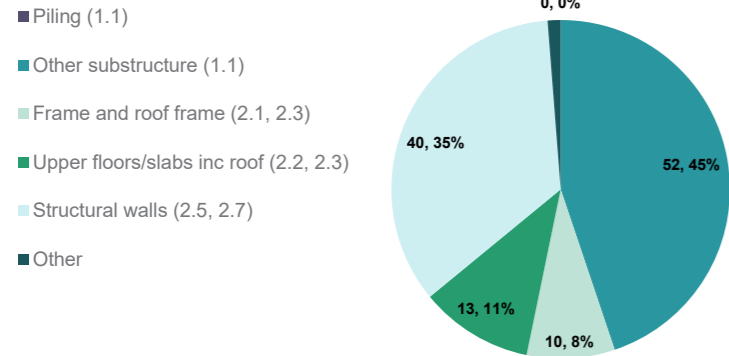
The Institution of Structural Engineers

Material	Material Type	Material Specification	Structural Element	Description	Component Lifespan [years]	Temporary Works	% of Temp Works Wasted	Volume [m³] or Mass [kg]?	Material Quantity [m³, kg]	Reinforcement [kg/m³]	Element Embodied Carbon [tCO ₂ e]	A1-A3	A4	A5w	B4	C2-C4	D	Biogenic Carbon
Other	Stone	Limestone	2.5 Structural ext. walls	600THK STONE WALLS 70% limest	60	No		Volume [m3]	74		25	15	5	3		3		
Concrete	Mortar_screed	1:4 cement:sand mix CEM I	2.5 Structural ext. walls	600THK STONE WALLS 30% mortar	60	No		Volume [m3]	32	Mass Concrete (0)	14	11	0	1		1		
Other	Blockwork	PCC Dense blocks	2.5 Structural ext. walls	140THK BLOCKWORK WALLS	60	No		Volume [m3]	12		4	2	0	1		0		
Concrete	Insitu	Global Avg C32/40 ±10% (Excludes China)	2.7 Structural int. walls	150THK RC WALLS	60	No		Volume [m3]	3	General Wall (65)	2	2	0	0		0	0	
Custom_EPD	Timber_EPD	Hardwood - NO BIOGENIC	2.1 Frame	200THK TIMBER STUD WALLS	60	No		Volume [m3]	11		19	2	1	2		13	-4	
Concrete	Insitu	Global Avg C32/40 ±10% (Excludes China)	1.1 Foundations (incl. pile caps)	600x300 RC STRIP FOUNDATIONS	60	No		Volume [m3]	18	Precast Plank (80)	13	11	0	1		1	-1	
Concrete	Insitu	Global Avg C32/40 ±10% (Excludes China)	1.1 Lowest floor/slab	RC 150THK SLABS	60	No		Volume [m3]	26	General Slab (110)	21	18	1	1		1	-2	
Custom_EPD	Timber_EPD	Hardwood - NO BIOGENIC	1.1 Lowest floor/slab	200THK SUSPENDED TIMBER FLO	60	No		Volume [m3]	35		59	8	4	7		41	-13	
Custom_EPD	Timber_EPD	Hardwood - NO BIOGENIC	2.3 Roof	TIMBER JOISTED ROOF	60	No		Volume [m3]	24		41	5	3	5		28	-9	
Other	Glass	General	2.1 Frame	WINDOWS	60	No		Volume [m3]	1		4	4	0	0		0		
Other	Granular_fill	Global	1.1 Foundations (incl. pile caps)	GF STONE INFILL	60	No		Volume [m3]	88		6	1	1	0		4		
1.1 Excavation-Foundation								Mass [kg]	267,040		1			1				
1.1 Excavation-Other																		

<p>Substructure & Superstructure</p>	A1 - A5:	119 tCO ₂ e	538 kgCO ₂ e/m ²
	Biogenic Carbon:	0 tCO ₂ e	0 kgCO ₂ e/m ²
	A-C:	213 tCO ₂ e	962 kgCO ₂ e/m ²
	Module D:	-30 tCO ₂ e	-134 kgCO ₂ e/m ²

	A5a	C1			
Global Values [tCO ₂ e]	3	1			
	A	B	C	D	Biogenic Carbon
Total [tCO ₂ e]	119	0	94	-30	0

Stage 2 Existing Cottages - Element emission breakdown [tCO₂e]



This project scheme releases carbon equivalent to:



140 one-way flights from London to New York



70 people's consumption of meat, dairy and beer for 1 year

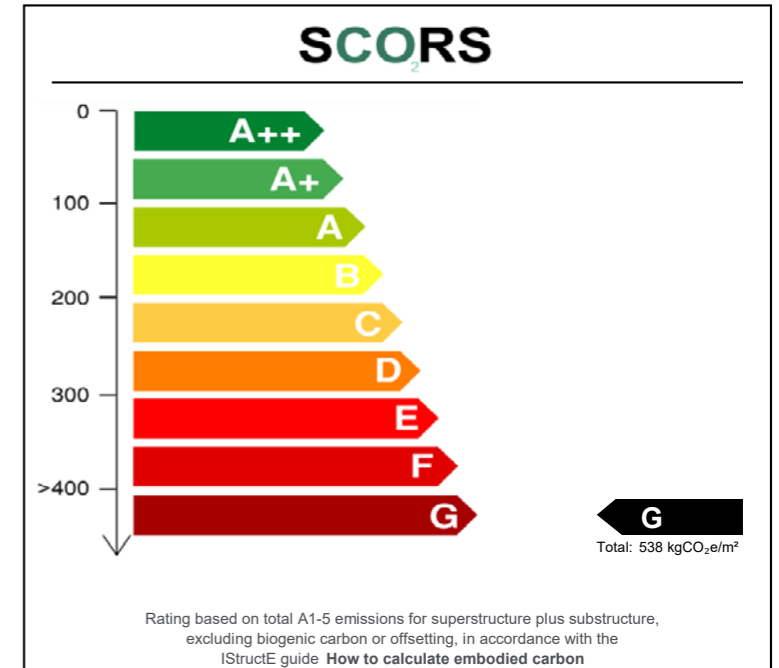


38 average family cars running for 1 year

Scheme performance against targets:

SCORS: 137 kgCO₂e/m² Scheme does not meet target
 RIBA: 144 kgCO₂e/m² Scheme does not meet target
 LETI: 201 kgCO₂e/m² Scheme does not meet target

This project scheme has a SCORS rating of G



The Structural Carbon Tool was produced by Elliott Wood Partnership Limited in partnership with The Institution of Structural Engineers.

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