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Appraisal of Existing Structures Abbeylands Public Realm Cavan for Design and Redevelopment



Cavan County Council

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Civil Engineering Structural Engineering Transport Engineering Environmental Engineering Project Management Health and Safety

CONSULTING ENGINEERS



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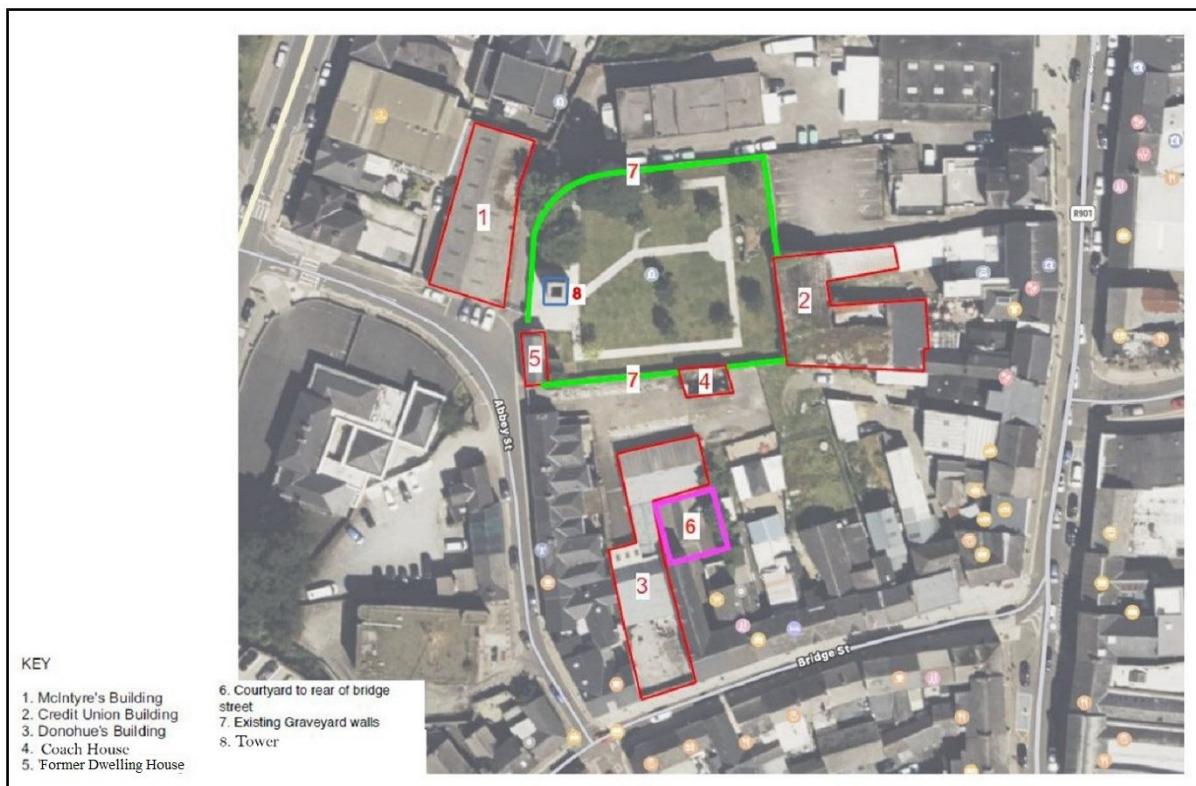
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1 Introduction

A site inspection was undertaken by the undersigned accompanied by Conor Phillips, Engineer, of CSEA, and Liam O'Reilly, Architect, of Cavan County Council, of the environs of the Abbeylands Public Realm Project in Cavan town on the 22nd of September 2022. This inspection was for the purpose of appraising existing structures including both buildings and walls. The areas inspected were as follows:

1. McIntyres Building
2. Credit Union Building
3. Donohue's Building
4. Coach House
5. Former Dwelling House (Fronting on to Abbey Street)
6. Courtyard to rear of Bridge Street
7. Existing Graveyard Walls
8. Tower

The inspection was visual only with no opening up undertaken. Consideration was also given to the likely requirements in undertaking a detailed topographic survey of the areas where buildings and structures are in a derelict or hazardous condition. An aerial photo of the inspection areas is shown below. The tower, graveyard walls and graveyard curtilage have National Monument and Protected Structures status and this will have a significant bearing on how these structures are handled in the design and execution of any works.

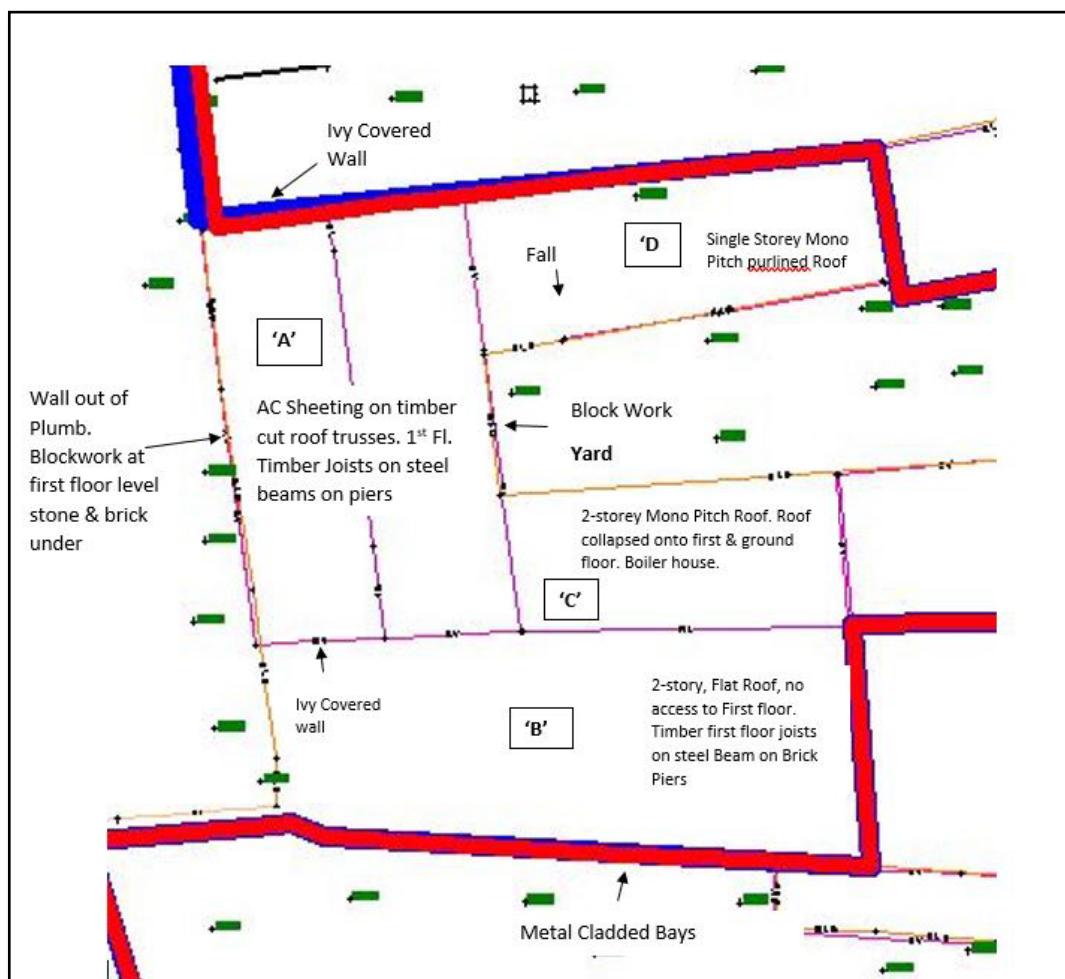


2 McIntyre's Building

This is a modern building, and it is intended to demolish it and erect a new building partly covering its footprint. The structure consists of a steel frame with steel roof trusses and a steel mezzanine over part of the footprint. In this area the roof is a steel portal frame to provide sufficient head height. The roofing is double skin asbestos cement sheeting. There is also asbestos cement sheeting on the gable and side walls at high level. There is still life in the structure and it may be possible to re-use some of the structural items in another context. Demolition should be straightforward with due consideration to the hazardous materials still present and the proximity of neighbouring buildings and activities. This building was being surveyed on the day of the visit.

3 Credit Union Building

This is the building on the project site with the most structural issues and has already been previously reported on with recommendations by others. We note that temporary propping included in this previous report has not been implemented. The building inspected consists of four different structures, which we have labelled , "A" to "D" and is illustrated in the schematic sketch below. The ground floor areas were inspected only due to safety issues at first floor level, with only inspection from an access ladder in the building "A" possible.



Building "A" is a two storey structure with a timber trussed roof and timber first floor supported by steel beams. It's western wall faces onto the graveyard and consists of stone and brick with the first floor

section in blockwork. There are brick piers at regular intervals internally at first floor level and these suggest that there is a change of thickness on this wall at this level. It is noticeably out of plumb and alignment and will require temporary support, as referred to above, during the demolition operation and extensive repair with buttressing on the section being retained. Stitching of the cracking in the gable walls that brace the western wall will also be required as they should be retained as buttresses.

The eastern wall is blockwork and is in reasonable condition except for a vertical crack over the opening to the single storey eastern annexe.

The gable walls are ivy covered and appear to have significant structural cracking at ground floor level consistent with the tilting. At first floor level the north facing gable is blockwork when viewed internally.

The roof is formed using raised collar timber roof trusses and this structural form would impart some lateral forces onto the side walls. The roofing is asbestos cement and has failed towards southern end of the building.

Building "B" is two storey section with the mono-pitch roof is also in poor condition with failure of the roofing also. The southern wall has brick piers and the infill panels on two of these piers have been replaced with plastic coated corrugated sheeting while the section adjacent to the graveyard is corrugated galvanised sheeting.

Building "C" is mono-pitch roofed building contains a boiler house with bunded oil tank. The corrugated iron roof of this building has collapsed onto the first floor and the floor joists are partially intact but the flooring has decayed. There is a considerable amount of debris on the ground floor. This area should be cleared of all roof and floor debris to facilitate safe execution of the topographical survey.

Building "D" is a single storey building where the corrugated iron roof is supported by substantial timber purlins in one Area and rafters. It is in reasonable condition.

Discussion was held with the surveyor about the feasibility of surveying these buildings safely and apart from the comments above the surveyor requested the use of scaffolding platforms to access the first-floor areas safely.

Upon the completion of demolition and remedial works to the Credit Union Buildings it is proposed to provide a new enhanced public realm pedestrian link, through the Credit Union Buildings area, from the 5th Avenue Bar access on Main Street to the proposed public realm area within the walled graveyard to the Abbeylands.

4 Donohue's Building

This building was in use as a supermarket and had an abattoir and meat processing facility attached to the rear. It is partly two storey and single storey. The single storey section fronting Bridge Street is modern and consists of precast concrete floor units spanning across the footprint parallel to Bridge Street. The floor units are probably hollowcore slabs judging by the joint spacing. The roofing is asphalt and there are a number of leaks.

There is one internal central column towards the rear of the single storey space that in all likely hood supports a transfer beam that in turn supports first floor walls and roof.

It is intended to replace the section to the rear with new build three storey construction generally in the area of the abattoir. Demolition of this area should be straightforward although it is possible that there could be a biological hazard or disused holding tank remaining in the ground relating to the former use of this space. Of interest would be whether Donohue's had a Waste Discharge Licence.

5 Coach House

The building previously had a first floor and a roof but only the four walls remain, the south wall facing onto the graveyard. There is visual evidence of a fire at this location in the past. The building has some fine brick and stonework detail interaction but the upper floor window lintols are precarious and one in particular appears ready to fall and should be taken down. There is a drop in ground level between the graveyard and the lowest level in the building that will need to be addressed as part of the final scheme.

Upon the completion of any required demolition works, It is intended to renovate this building for use as a potential café. Immediately adjacent to this building it is proposed to create an opening in the graveyard stone wall so that there is pedestrian connectivity between this proposed café building / Donohue's Building and the proposed public realm area within the walled Abbey Graveyard area.

The walls are in reasonable condition, aside from comments above about the first-floor windows, for a ruin but will require intervention by a stonemason to repair holes and flaunch the tops of the wall. The north and south walls are considerably higher than the body of the graveyard wall and it will need some liaison with the Architects regarding the formation of the circulation ope in particular the ope in the south wall which has two fine brick arches.

6 Former Dwelling House (Fronting on to Abbey Street)

It is intended to convert the former 2-storey dwelling house that fronts on to Abbey Street (located immediately north of the entrance to the Donohue's abattoir yard) so that it may be used for small commercial / office space within the proposed future Abbeylands development. Visual inspection of the exterior of the building determined it to be in reasonable condition. Building works / renovations of this building to convert it to commercial use will be relatively straightforward given the relatively good condition of the existing dwelling building.

7 Courtyard to Rear of Bridge Street

This courtyard is accessed by means of an electric gated security fence that fronts on to Bridge Street. There is a new building here with a newly paved access to Bridge Street. There are several manhole covers in the paving but inspection of record drainage drawings suggests that they may not be able to accommodate the drainage of the proposed new build to the rear of the Donohoe building due to level issues. The proposed level of the new building is 62.00 metres above Ordnance Datum (mOD), but the existing invert of the end foul sewer manhole is 60.94 mOD, see appended extract from Irish Water record drawings. This end foul sewer manhole is located immediately south to the proposed Donohue's building and the level difference of 1.06m would make it very difficult to make foul connections to this exiting foul sewer infrastructure.

8 Existing Graveyard Walls

The graveyard walls are a mixture of different masonry construction forms of differing ages and include the outer walls of two buildings.

The archway off the An Post right of way can be reopened with minimal structural intervention. Presumably this was closed to secure the right of way.

The building on the south wall has already been discussed and is relatively straightforward. The other building, the Credit Union building is more problematic as discussed above. The section of the wall to the north of the Credit Union is a random rubble stone wall and is in poor condition with extensive bulging especially when viewed from the Bank carpark. It is also out of plumb, and a detail topographic survey is required to facilitate structural assessment and specification of remedial works. The section of

graveyard wall connecting to the southeast corner of the Credit Union Building is partially collapsed and will require remedial works. There also exists an existing concrete wall within the Donohue's abattoir yard which backs up to a section of the graveyard perimeter wall and shall be required to be removed as part of the works. The removal of this existing concrete wall may affect the condition of the graveyard wall and will require to be carefully carried out, and remedial works carried out to the graveyard wall if necessary. Render has been applied to the graveyard side of the perimeter stone wall at a number of locations. This render material has headstone fragments embedded within it at some of these locations. This render material, and any embedded fragments of headstones, will be required to be removed from the perimeter stone wall and remedial works carried out to the wall where necessary. It is also understood that it may be intended to reposition headstones along some areas of the graveyard stone perimeter walls. Any such repositioning of headstones along the walls will require structural assessment for each location to be carried out prior to final positioning.

9 Tower

This is the most prominent structure on the site and is in reasonable structural condition with no signs of subsidence or structural distress. Routine maintenance in the case of this building should comprise removal of any vegetation growing from the walls and regular checks on weathering and copings. A more significant intervention would involve replacement of any sand cement mortar used in the past.

Signed: 

Dated: 15th November 2022

Aidan Smith BSc, MSc, CEng, MIEI, F Cons EI.

For Clifton Scannell Emerson Associates (CSEA)

10 Appendix 1 - McIntyre's Building



Roof Truss and Asbestos Cement (AC) Roofing



Mezzanine Area



Portalised roof Structure over Mezzanine

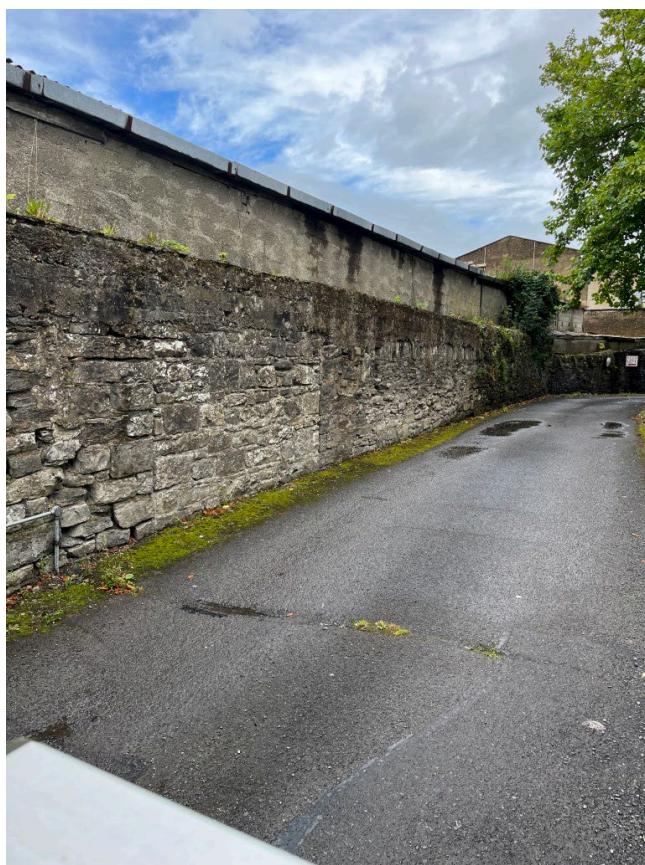
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Asbestos Cement (AC) Cladding to the rear Wall



Side wall built inside Stone wall at Right of way

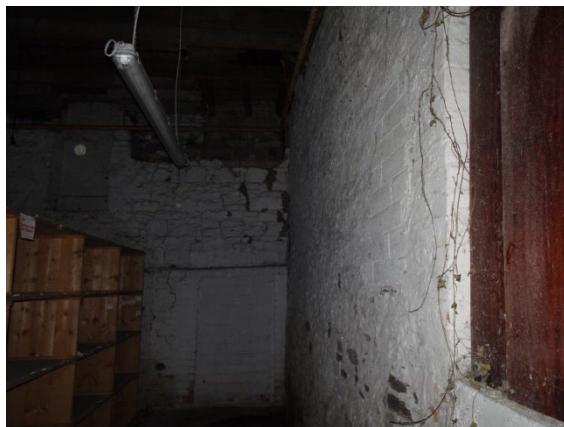
11 Appendix 2 - Credit Union Building



Overall view of Roofs, Duo Pitch Main Building A In the Background, Collapsed Mono-pitch Roof over Boiler House C, note Chimney, Moss covered Flat Roof area B, And mono Pitch Single Storey Area D to the right. Pub in the foreground



Ground Floor Western Wall Building A Out of Plumb



Crack in Southern Wall A



Crack in Northern Wall 2022 A



Crack in Northern Wall 2019 A



Western Wall Misaligned and Out of Plumb A



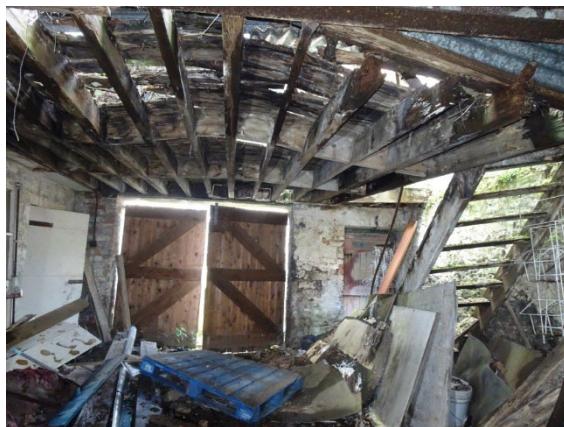
First Floor showing Timber roof Trusses, Holes in the Roof and Piers on the Western Wall, A



First Floor Joists Supported by Steel Beal on Blockwork Pier A



Eastern Wall in Blockwork, A. Collapsed roof over Boiler House, Double door entrance to boiler House Area, C



Area Inside Double Door, Roof Collapsed, Floor Joists Partially collapsed, Floor Debris, C



Old Boiler, First Floor Over, C



Typical Ground Floor Pier Supporting Steel Beam that Supports First Floor Joists, B

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Clear Spanning Steel Beam Supporting Floor Joists B



Flat Roof Section Roof Failure, South wall Metal cladding, and First Floor Joists Decayed B



External View Wall Cladding Panels B

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Timber Purlins Support Roof, D



Rafters Support Roof in this area, D

12 Appendix 3 - Donohue's Building



Single Storey Area with Wide Span Precast Concrete Roof, Central Column Supports Transfer Structure Over



Flat Roof Over Single Storey Area



Abattoir Structures

13 Appendix 4 - Coach House Walls



Western Elevation Bracing Graveyard Wall



Southern Elevation with Brick Arches Flimsy First Floor Window Lintols



Eastern Elevation Strong Stone Detailing on the Corner



Internal View of Southern Wall With Brick Courses at First Floor Joist Level, Precarious Brick Arch Over First Floor Window

14 Appendix 5 – Former Dwelling House (Fronting on to Abbey Street)



Front Elevation is in Good Condition



Southern Elevation with some Plaster Cracking but is in quite good condition

15 Appendix 6 - Courtyard Rear of Bridge Street



Irish Water records of Foul drainage manhole levels in courtyard leading to Bridge Street



Continuation of Drainage into Courtyard



New Building beside Donohoe's Abattoir Building

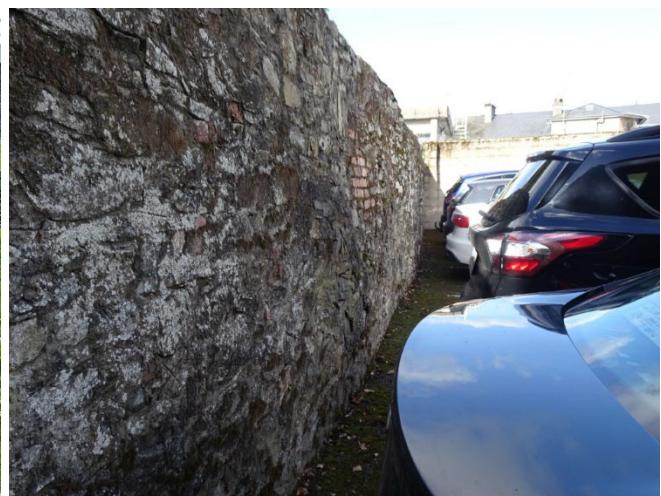
16 Appendix 7 - Existing Graveyard Walls



Blocked Up Archway May Be Opened



Graveyard Side of Eastern Wall



Opposite Side of This wall in the bank Car Park

17 Appendix 8 - Tower



The Existing Tower observed to be in reasonable structural condition

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