AtkinsRéalis

Pre-Demolition Waste Audit Report

Limerick 2030

October 2025

CLEEVES RIVERSIDE QUARTER

Notice

This document and its contents have been prepared and are intended solely as information for Limerick City & County Council in partnership with Limerick Twenty Thirty DAC and used in relation to a Pre-Demolition Waste Audit Report for the Cleeves Riverside Quarter Development, Limerick.

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Contents

Tables

Figures

1. Introduction

This **Pre-Demolition Waste Audit (PDA)** has been prepared by AtkinsRéalis on behalf of Limerick City & County Council in partnership with Limerick Twenty Thirty DAC as part of the supporting documents required for a planning application for a proposed development at Cleeves Riverside Quarter' in Limerick City. Refer to Figure 1-1 for the site location.

Figure 1-1 – Site Location

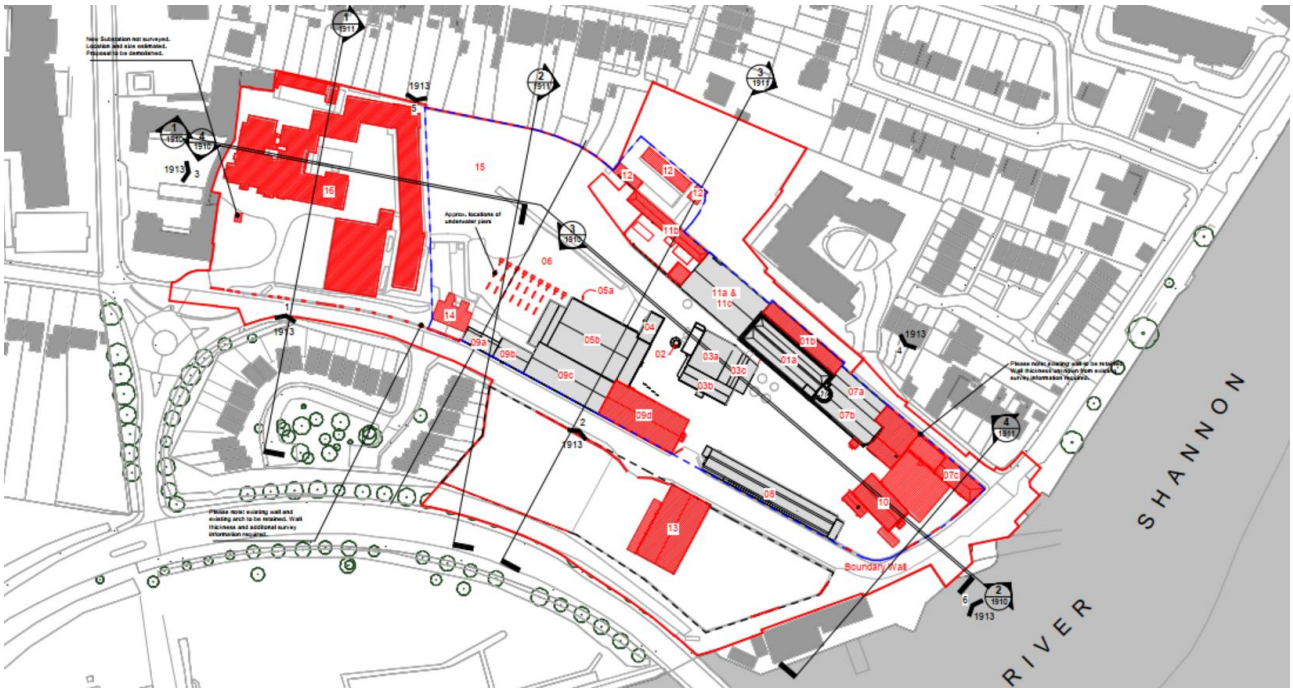

Figure 1-2 Red line boundary of site (structures proposed for demolition are shaded red)

The elements highlighted red in Figure 1-2 represent the planned demolitions and have been accounted for in this report.

The Cleeves development is located on North Circular Road at Lansdowne in Limerick City. The development consists of 2 separate sites North and South of North Circular Road which have been vacant since 2011. Since then, the site has been added to plans for Limerick City & County Council in partnership with Limerick Twenty Thirty with a view to revitalise not only the site but the surrounding areas. The site itself comprises of Cleeves, a former industrial site which is located North and South of North Circular Road; the Salesians Convent and Secondary School, which is located to the north of the Cleeves site; and St. Michaels Rowing Clubs located between the river and O'Callaghan Strand.

The works planned include a reuse and redevelopment strategy which will retain and reuse structures with historical significance, namely the Flax Mill Factory and the Chimney Stack, while other structures are marked for removal or complete redevelopment. A plan view of the reuse and development strategy is shown below.

The Cleeves Riverside Quarter holds significant cultural and historical value within Limerick City. Its strategic location along the River Shannon and proximity to key civic and educational institutions positions it as a catalyst for urban regeneration. The redevelopment aims to transform the currently derelict and underutilised lands into a vibrant, mixed-use quarter that integrates heritage conservation with modern urban design. This transformation is expected to contribute to the broader objectives of the Limerick City & County Council in partnership with Limerick Twenty Thirty plan, including economic revitalisation, enhanced public realm, and improved connectivity between the city centre and the riverfront.

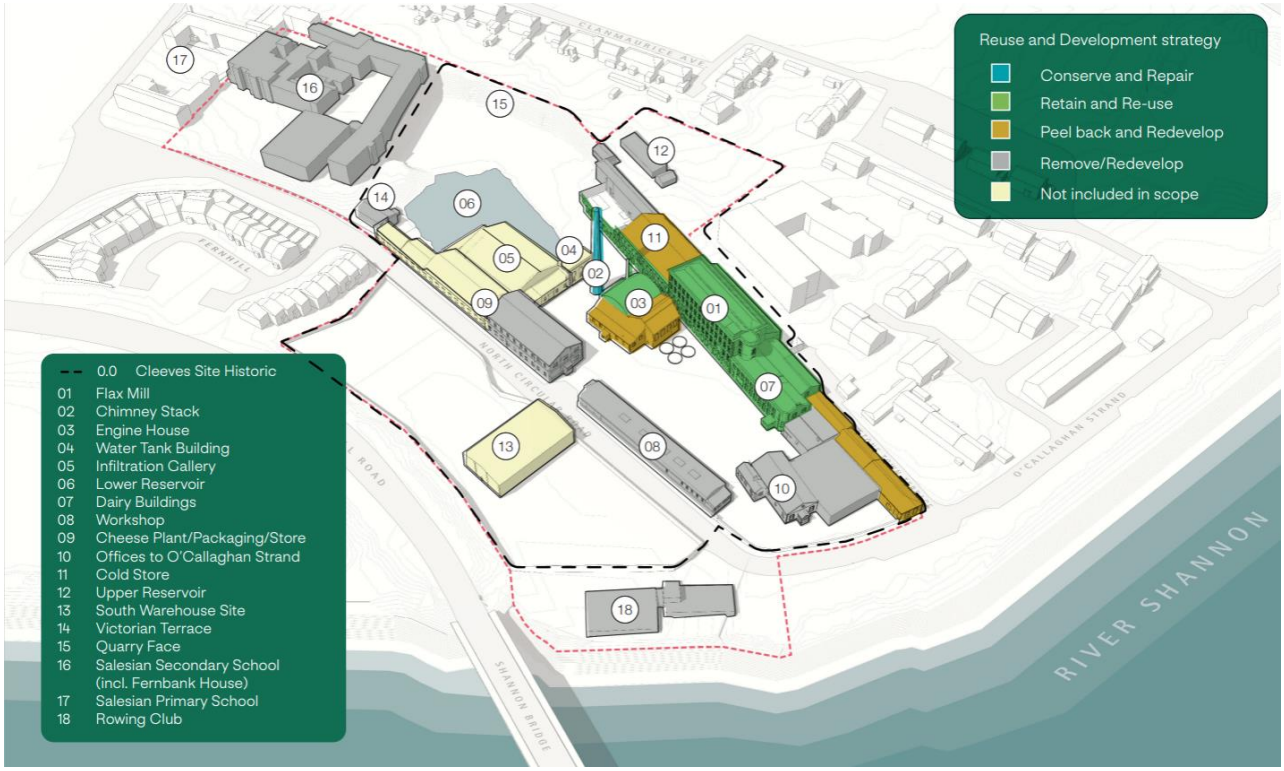

Figure 1-3 - Reuse and Redevelopment strategy

This report has been aligned to BREEAM (Building Research Establishment Environmental Assessment Methodology) Criteria as it is acknowledged in Ireland as a viable framework for demonstrating compliance with environmental performance standards.

Although BREEAM originated in the UK, it is widely recognised and implemented in Ireland across both public and private sector developments. In fact, BREEAM is referenced in Irish construction legislation, including the Building Control Regulations 2015 (S.I. No. 333 of 2015), as a viable framework for demonstrating compliance with environmental performance standards[1].AtkinsRéalis have completed this pre-demolition waste audit in alignment with BREEAM criteria.

Furthermore, in line with the Home Performance Index (HPI) Technical Manual v3.0 (Irish Green Building Council November 2022) a Pre-Demolition Audit in line with the "Guidelines for Waste Audits before Demolition and Renovation works of Buildings" (EU Construction and Demolition Waste Management, May 2018) should be undertaken.

This report outlines the findings of a desk-based analysis, identifying key demolition arisings and evaluating opportunities for reuse and recycling in accordance with Circular Economy (CE) principles and the waste hierarchy.

AtkinsRéalis scope of services does not cover the assessment, management or advice in relation to, asbestos or asbestos containing materials whatsoever. AtkinsRéalis accepts no liability in relation to or in connection with asbestos howsoever arising.

1.1 Waste Hierarchy

This report is in line with the waste hierarchy (shown in Figure 1-4).

This shows the priority for waste management is to reduce waste as the first management option, and from this waste shall be re-used. The next step would be to recycle the waste, then recover energy from it and finally, as a last resort and least favourable is to dispose of the waste via incineration without energy recovery or to landfill.

Figure 1-4 Waste Hierarchy

[1] BREEAM New Construction 2018 (UK) - Wst 01 Construction waste management (bregroup.com)

1.2 Circular Economy

This report is in line with Circular Economy (CE) principles (see Figure 1-5). CE is a model of production and consumption that involves sharing, leasing, reusing, repairing, refurbishing, and recycling existing materials and products for as long as possible, with the goal of eliminating waste. This approach addresses key global challenges such as climate change, biodiversity loss, waste, and pollution by promoting more sustainable resource use.

Three core principles underpin the transformation to a CE:

- Designing out waste and pollution
- Keeping products and materials in use
- Regenerating natural systems

In contrast to the traditional linear economy—often summarised as "take, make, waste"—a CE aims to create a restorative and regenerative closed-loop system that minimises waste and maximises resource efficiency.

The CE approach is increasingly adopted by manufacturers offering 'take-back' schemes and by design teams applying 'design for deconstruction'—factoring in materials' end-of-life reuse during the design phase of assets. Underpinned by a transition to renewable energy and materials, the CE is a resilient system that benefits business, people, and the environment.

This approach is fully aligned with Ireland's national Circular Economy Strategy and the Circular Economy and Miscellaneous Provisions Act 2022, which place CE principles on a statutory footing. These policies support the shift from a linear to a circular model, particularly in the construction and demolition sector, and promote sustainable development through reuse, recycling, and resource efficiency.

Underpinned by a transition to renewable energy and materials, the CE is a resilient system that aims to do good for business, people, and the environment.

Refer also to the Circular Economy Statement (CES) (Ref: CRQMP-ARUP-ZZ-ZZ-RP-ES-0002) prepared by ARUP (2025) and submitted as part of this planning application.

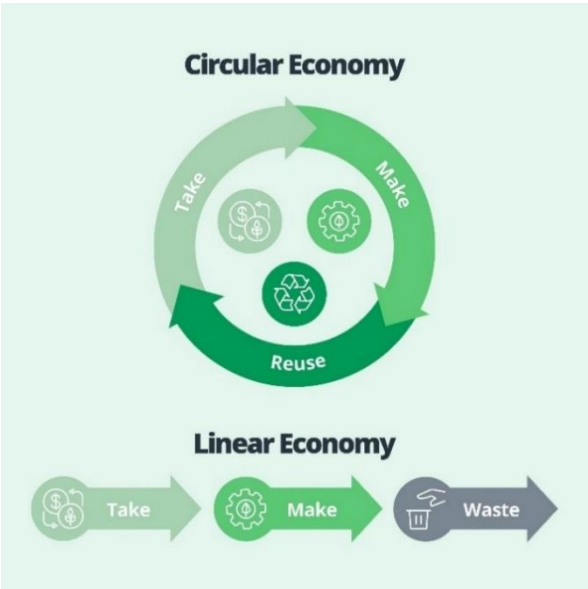

Figure 1-5 Circular Economy vs Linear Economy

2. Proposed Demolition Works

The proposed development comprises Phase II, of an overall Masterplan comprising four separate phases. Phase II is subsequent to ongoing stabilisation and repair of the Flaxmill protected structure (Phase I). Phase III will comprise an educational campus, inclusive of the adaptive reuse of the Flaxmill Building as part of that phase of development and will be subject to a future separate application. Phase IV, which comprises the Shipyard site, will be the final phase of development.

Two structures within the site are designated protected structures; the Flaxmill Building (PS Ref no.264 & NIAH No. 21512053) and the octagonal brick chimney (PS Ref no.265 & NIAH No. 21512059), which are to be retained.

Demolition of the following structures will be carried out as part of the proposed development:

(i) Salesians Secondary School and Fernbank House;
(ii) 2 no. houses on North Circular Road;
(iii) Residual piers from the basin of the reservoir;
(iv) Upper Reservoir on Stonetown Terrace comprising 2 no. concrete water tanks, pump house and liquid storage tank;
(v) 1960's lean-to building structures adjoining the Cold Store (former Weaving Mill);
(vi) c20th rear lean-to of the Flaxmill Building;
(vii) c.1960s office building adjoining the Packing Store and Cheese Plant on North Circular Road;
(viii) Cluster of buildings including altered part of the Linen Store, the former Linen Store, Storage Building, and Office/Lab building at O'Callaghan Strand / Stonetown Terrace with partial retention of existing stone wall;
(ix) Warehouse on the Shipyard site; and
(x) Partial removal of stone boundary wall defining the Cleeves site adjoining O'Callaghan Strand / Stonetown Terrace and around the Shipyard site.

Some of the demolition works / partial demolition works overlap with the Phase I works associated with the emergency stabilisation and repair of the Flaxmill building.

Refer to Figure 1-2, and the full planning drawing pack submitted as part of this planning application, for the locations of all structures proposed for demolition.

Given the sites industrial legacy and the age of existing structures, there is a significant risk of encountering asbestos-containing materials (ACMs), which pose both environmental and human health hazards. Asbestos is a regulated hazardous material, and its presence directly influences waste classification and the mitigation measures required during redevelopment. To establish a comprehensive understanding of Asbestos distribution and condition across the site, 2no. asbestos surveys were undertaken by Phoenix Environmental Safety Ltd. in 2015 and 2024.

According to Phoenix Environmental Safety Ltd (2025) the following tasks are required to be completed in advance of commencement of any demolition works:

- Asbestos containing materials will be removed prior to the commencement of any works;
- A licensed asbestos removal contractor shall be contracted for removal and disposal of asbestos waste; and,
- All asbestos removal works shall be undertaken in full compliance with the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006–2010 (S.I. No. 386 of 2006).

A copy of the full Phoenix Environmental Safety Ltd (2025) report is presented in the Preliminary Construction Environmental Management Plan (CEMP, Appendix A) (AtkinsRealis, 2025) submitted as part of this planning application.

Asbestos removal, pre-condition surveys and removal of contaminated soils across the development as required will be undertaken during the site demolition and enabling works.

3. Site Overview

Records and information provided by the client have been used to inform a desk-based analysis of the structures proposed for demolition using the information and images provided. Furthermore, site visits were conducted in July and September 2025. The site records and desk-based analysis have been used to identify the types and quantities of waste likely to be produced during the demolition process.

Figure 3-1 - Aerial view of site from the North-East

Figure 3-2 - Aerial view of site from the West

Figure 3-3 - View of Flaxmill area from North Circular Road

Figure 3-4 – Collapsing roof showing exposed timber structure within the Flaxmill building (photo taken from Phoenix ACM Survey report)

Figure 3-5 - View of Flaxmill extension internals (Lean to).

Figure 3-6 – Lift motor unit in the Flaxmill building (photo taken from Phoenix ACM Survey report)

Figure 3-7 Concrete parapet and cement tile roof on the Flaxmill building (photo taken from Phoenix ACM Survey report)

Figure 3-8 - View of Reservoir

Figure 3-9 Structure at the upper Reservoir (photo taken from Phoenix ACM Survey report)

Figure 3-10 - Salesian school.

Figure 3-11 – Dining area within the Salesian School/Convent building (photo taken from Phoenix ACM Survey report)

Figure 3-12 – Internal area – Fireplace and Stain glass windows

Figure 3-13 – Sports Hall at Salesian school.

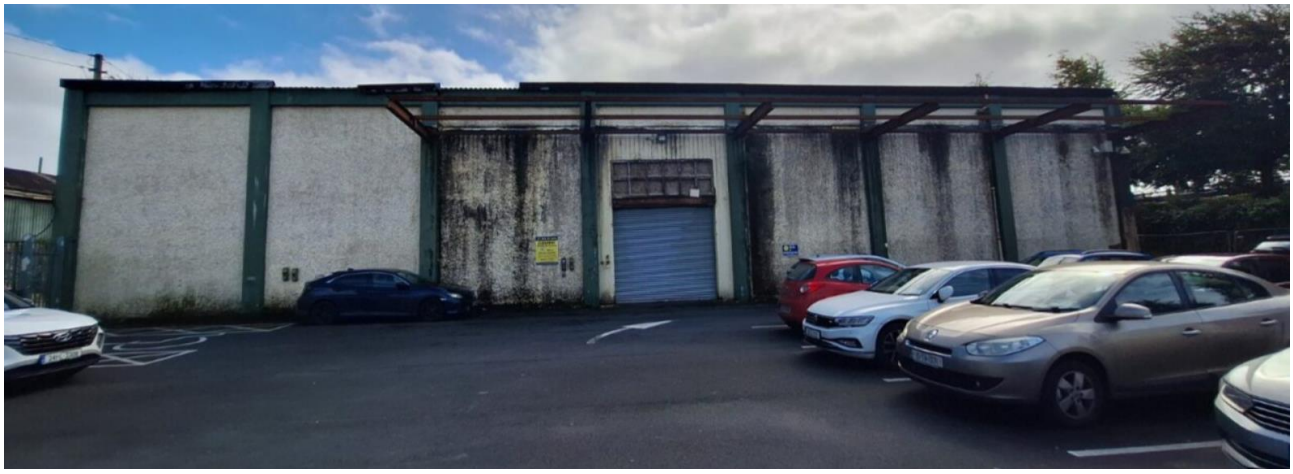

Figure 3-14 – Shipyard Warehouse

Figure 3-15 – Shipyard Warehouse – Internals.

Figure 3-16 – Packaging Store and Offices

Figure 3-17 – Packaging Store and Offices – Internals.

Figure 3-18 – Stairway (steel handrails) and ACM board within the Packaging Store and Offices (photo taken from Phoenix ACM Survey report)

Figure 3-19 – Middle building is Weaving Mill/Cold Store.

Figure 3-20 – Weaving Mill/Cold Store internals.

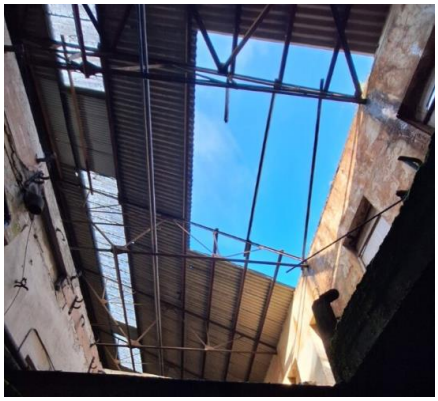

Figure 3-21 – Weaving Mill – Roof.

Figure 3-22 – Weaving Mill Lean Rear Lean-to

Figure 3-23 – Weaving Mill Lean Rear Lean-to - Internals.

Figure 3-24 – Workshop

Figure 3-25 – Workshop - Internals

Figure 3-26 – Offices and Laboratory

Figure 3-27 – Offices and Laboratory – Delict insides

Figure 3-28 – Infiltration Gallery.

Figure 3-29 – Infiltration Gallery – Internals.

Figure 3-30– Victorian houses – Front

Figure 3-31– Victorian houses – Rear

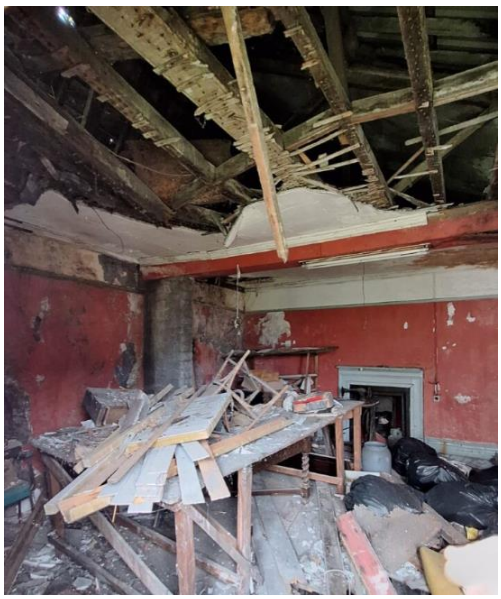

Figure 3-32– Victorian houses – Internals (Different conditions)

Figure 3-33– Linen Store.

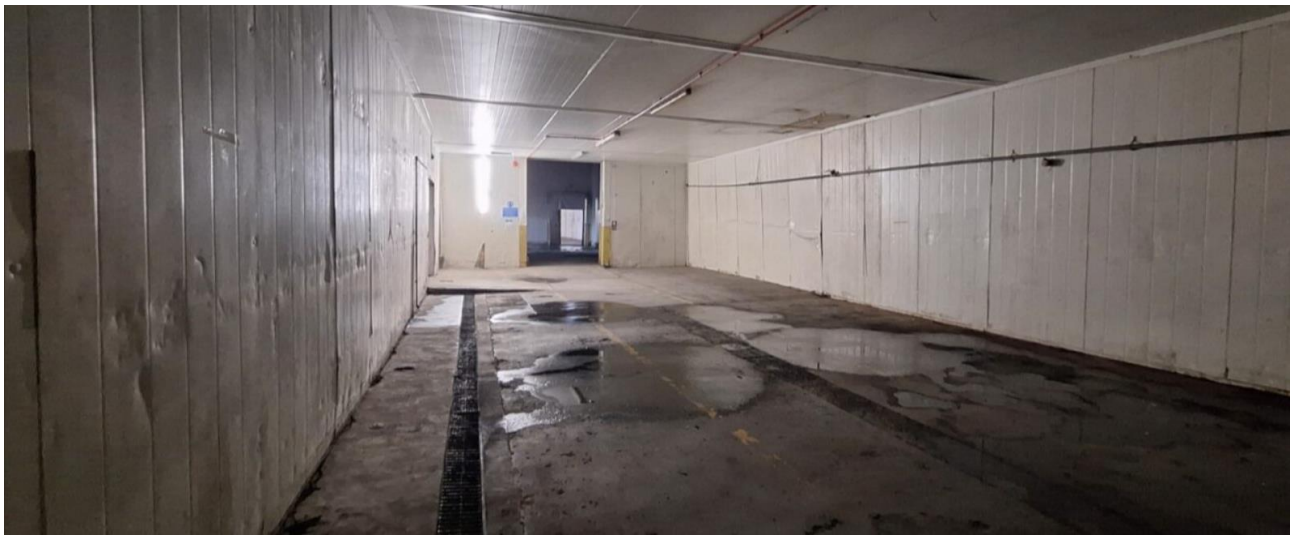

Figure 3-34– Linen Store – Internals.

3.1 Flaxmill & Surrounding area

3.1.1 Flaxmill

The Flaxmill building is a four-storey stone masonry building with a two-storey lean-to extension located at the eastern elevation of the original building. The outer façade of the original building comprises of cut course limestone walls and rock-faced quoins. Some corrosion was noted to the steel lintels over the doors and windows to the façade.

The internal stricture to the upper floors of the Flaxmill comprises a concrete slab bearing on a thin brick arch support, spanning between cast iron columns and the external stone walls. Although the primary structure appears to be in relatively sound condition, some areas of heavy corrosion were observed to the soffit of the cast iron beams supporting the brick arch/concrete floor plate.

The roof of the Flaxmill comprises a timber hipped roof which appears to be in a very poor state of repair. The timber structure is supported on cast iron columns internally and walls externally. There is significant water ingress at hipped ends of the roof, which has led to extensive ceiling and timber joist damage with the ceiling collapsing in various locations on this floor. There is evidence of horizontal cracking internally to the walls at the top floor and there is propping evident to the window heads close to the northern elevation.

In addition to the timber roof structure, there is also a section of roof comprising steel beams and purlins supporting steel cladding sheets. These steel beams are likely supported by the stone wall on one side and a ring beam/blockwork wall on the street-facing side.

The walls throughout the structure consist of a combination of stone and blockwork construction. The floor at ground level comprises a concrete slab, incorporating ramps and steps.

As part of the proposed development, only the c.20th rear lean-to extension of the Flaxmill building is to be demolished, with the main Flaxmill structure retained and incorporated into future phases of development.

Materials anticipated to be produced during demolition works associated with the lean-to extension and enabling works include:

- Timber
- Concrete
- Brick
- Cast-Iron columns
- Steel
- Glass
- Masonry
- Gypsum
- Asbestos

3.1.2 Dairy Building

The dairy building is originally a two-storey masonry building which has been extended over time. The structure consists of rectangular steel columns supporting a timber first floor, with a lightweight steel truss roof, with a galvanised roof sheeting that faces onto the Cleeves yard. The roofing decking appears to be in a very poor condition and would not be suitable for re-use. The building/extension to the north of this building is understood to be not of historical significance and will be demolished.

The materials anticipated to be produced during the demolition of this structure include:

- Timber
- Concrete
- Brick
- Metal sheeting
- Steel
- Glass
- Masonry
- Gypsum
- Asbestos

3.2 O'Callaghan Strand

The buildings within this area consist of three connecting structures which house the laboratories, offices and the Linen store. The largest structure has walls made up of a combination of blockwork and galvanised sheeting while it has a timber roof truss system although the actual roofing is primarily asbestos sheeting with a number of galvanised sheets. The smallest structure is of a similar makeup with a rendered blockwork exterior wall and a timber truss roof system; however it has a slated roof, it was noted that there is a green discolouration inside of the wall indicating dampness. The other structure is a rectangular structure with walls made up of a mixture of stone walls along with cladding panels, the roof is made up of steel beams supporting steel cladding panels, this all sits on top of a concrete slab which makes up the floor.

The materials anticipated to be produced during the demolition of this structure include:

- Timber
- Concrete
- Brick
- Metal sheeting
- Steel
- Glass
- Masonry
- Slate
- Asbestos

3.3 Salesians

The Salesians area of the site consists of a multi-phase development with numerous adjoining buildings making up the old Salesian secondary school. The main structure of the school is a 2-3 storey brick building with a flat timber and felt roof, this structure is around 8m tall top to bottom and consists of one long L-shaped section with the other part of the building connected to the tail of this section to the east. The other building on this part of the site is a rectangular shaped building around 7m tall with a sloped roof with gable ends.

The materials anticipated to be produced during the demolition of these structures include:

- Timber
- Concrete
- Brick
- Metal sheeting
- Steel
- Textiles
- Lino and other floor coverings
- Glass
- Masonry
- Slate
- Asbestos

3.4 Shipyard

The shipyard area consists of the entire portion of the site to the south of North Circular Road. The yard area consists mainly of concrete and hardcore areas with a large car park to the western side of the site. The main structure consists of corrugated tin sheeting on a timber roof truss system. The external walls of the building consist of rendered blockwork panels with blockwork piers at intervals. There is a steelwork canopy cantilevered from the western façade; the canopy structure consists of steel beams cantilevered with tin sheeting over.

The materials anticipated to be produced during the demolition of this structure include:

- Timber
- Concrete
- Brick
- Metal sheeting
- Steel

3.5 Stonetown Terrace

The Stonetown terrace area of the site is made up of 2 different buildings. The first one is on an elevated part of site. This is accessed from Stonetown terrace road, this part of site is elevated from 1 to 2 storeys at its highest point above the buildings 2 to 16. The building has 2 water tanks, a pump house and a store. The tanks are around 3m deep. This compound is enclosed with galvanised permanent palisade security fencing. The structure of the tank is made up of reinforced concrete walls, on top of the walls is 1m high masonry blocks

on flat, all covered by a galvanised metal sheet roof. There is a small masonry storage building beside the tanks with a mono pitch timber roof covered in asbestos sheeting.

The other building is a masonry walled building with a timber truss roof, the building is two storeys from the low, main part of the site and one storey from the high part of the site. The lower inside wall acts as a retaining wall on the upper part of the site. Internally the building has a long mezzanine level tank that is approximately 3m high, the tank is supported by a series of rusted steel beams which span the length of the building, on top of the steel beams are timber beams which appear to be significantly rotted, the tank sits above this platform. There are three temporary props in place supporting the weight of the above, the props are fully extended and rest on top of concrete blocks. This building is not safe for people to access in its current condition.

The materials anticipated to be produced during the demolition of this structure include:

- Timber
- Concrete
- Brick
- Steel
- Glass
- Masonry
- Asbestos

3.6 Reservoir

Within the lower reservoir found on site there are residual underwater piers which will be removed. These piers are assumed to be concrete and the removal of these is to help reinvigorate the reservoir as a part of the new public open space. Information regarding the dimensions of the piers is limited so in the following bill of quantities an approximation based on a certain Tonnage of concrete per pier has been used.

The materials anticipated to be produced during the demolition of this structure include:

- Concrete
- Brick
- Steel

3.7 Victorian Houses

Sitting between the Salesian School and Cheese Plant building are two semi-detached Victorian domestic houses. The presumption is that these houses were built to serve the operation of the flax mill. Their appearance in the earliest phases of development of the Flax Mill and their architectural form supports their possible use by managers or operators of the site.

The materials anticipated to be produced during the demolition of this structure include:

- Timber
- Concrete
- Brick
- Steel
- Lino and other floor coverings

- Glass
- Gypsum

3.8 Asbestos Considerations

As previously noted, Report No. PE24-1226, dated 12th November 2024, was carried out by Phoenix Environmental Safety Ltd as a Refurbishment/Demolition Survey. It identifies the presence and location of asbestos-containing materials (ACMs) across the CRQ site.

Quantification of asbestos is outside the scope of this report. However, the findings from the Phoenix survey will inform demolition planning and contractor awareness. All handling, removal, and disposal of ACMs will be undertaken by licensed professionals in accordance with the specialist contractor's asbestos management plan and relevant Irish legislation, including the Safety, Health and Welfare at Work (Exposure to Asbestos) Regulations 2006 and associated guidance from the Health and Safety Authority (HSA).

All asbestos demolition waste is excluded from this waste assessment and is not included in the waste summary below in Table 4.1. Management of asbestos waste will be addressed separately under the contractor's licensed asbestos removal procedures.

4. Demolition Materials

The Demolition Bill of Quantities (D-BOQ) in Table 4-1 below summarises the list of materials and estimated volumes which are shown above. Uses for the materials are shown in Section 4.1.

Please note that the figures presented are estimates at this preliminary juncture and certain assumptions were made where site access was limited or information was not available.

Table 4-1 Demolition Bill of Quantities (t)

Component	EWC Code	Recovery Potential	In situ Quantity	Demolition Recovered Material Potential	Demolition Recovery Index (%)	Demolition Recovered Material Target
Steel	17 04 05	Reuse	316	316	100	316
Metal Corrugated Cladding	17 04 07	Recycled	78	78	100	78
Brickwork	17 01 02	Recycling	2260	2260	100	2260
Concrete (including Pre-Cast Panels)[1]	17 01 01	Recycling	6850	6850	100	6850
PVC window frames	20 01 39	Reuse/ Recycling	2	2	80	1.6
Fluorescent Lighting	17 09 01	Recycling	7	7	95	6.65
Glass	17 02 02	Reuse/ Recycling	6	4	75	3
Timber	17 02 01	Recycling	38	38	65	25
Gypsum	17 08 02	Recycling	16	16	80	13
Natural Stone	17 05 04	Recycling	32	32	100	32
Bitumen	17 03 01	Recycling	10	10	85	8.5
Total			**9605**	**9605**		**9580**

[1]**Concrete from underwater piers in reservoir is estimated due to lack of records showing any dimensions**

Note – Asbestos has not been included in the table above as it has no Demolition Recovery Potential. Asbestos Containing Materials (ACMs) have been identified within the buildings on site. The following Refurbishment/Demolition Survey Reports prepared phoenix Environmental Safety Ltd provide details of the types, location and indicative surface areas/quantities of the different ACMs:

- Flax Mill Building - Report No. PE24-883
- The Salesians Site - Report No. PE24-1238
- The rest of the Cleeves Site - Report No. PE24-1226

The results of the pre-demolition audit show that the estimated total volume of material arising from the demolition of the site is 9580T.

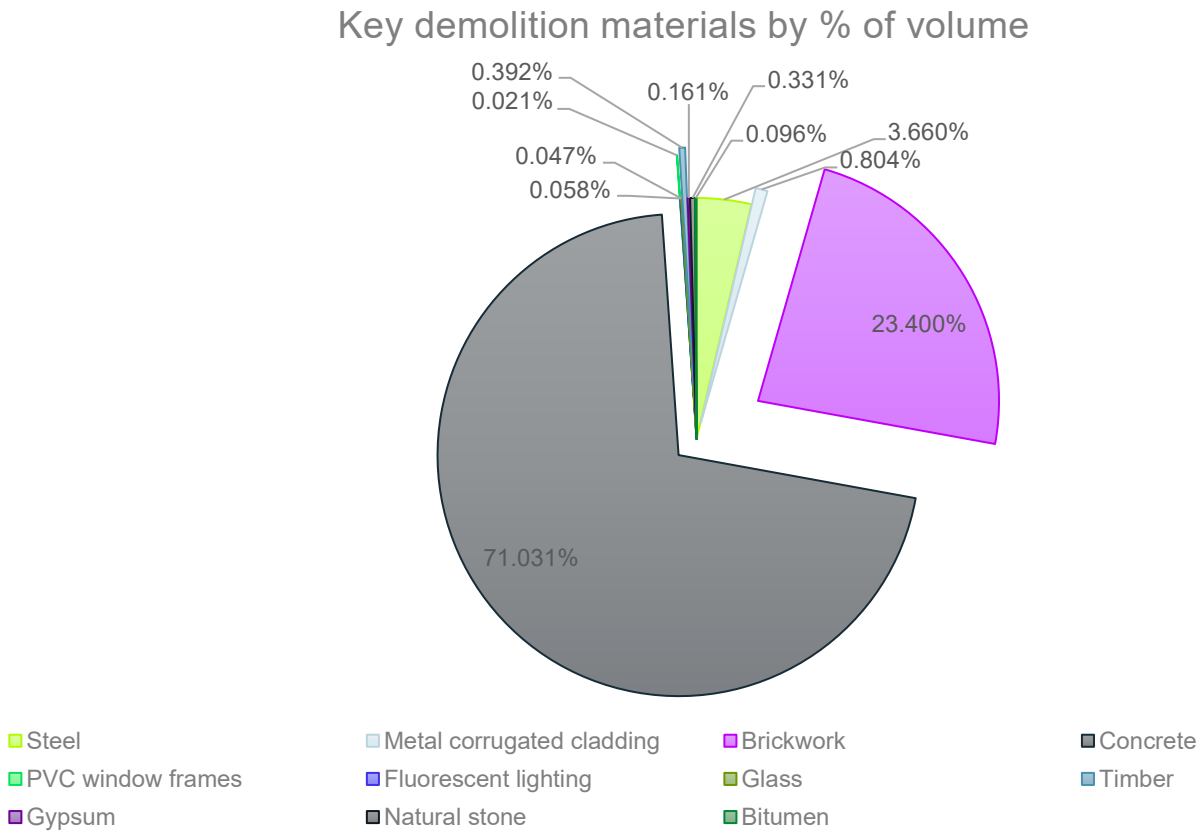

Figure 4-1 - Key demolition materials

4.1 Material Breakdown

This section of the report takes the estimated volume of materials shown in **Table 4-1** and breaks it down into materials estimated to be taken from each of the areas within the Site.

4.1.1 Flaxmill & Surrounding area

4.1.1.1 Flaxmill

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	15
Metal Corrugated Cladding	5

Brickwork	45-50
Concrete (including Pre-Cast Panels)	85-90
Fluorescent Lighting	<1
Glass	<1
Timber	2-3
Gypsum	<1

4.1.1.2 Dairy Building

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	10-15
Metal Corrugated Cladding	4-5
Brickwork	30-35
Concrete (including Pre-Cast Panels)	120-125
Fluorescent Lighting	<1
Glass	<1
Timber	2-3
Gypsum	1

4.1.2 O'Callaghan Strand

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	15
Metal Corrugated Cladding	2-3
Brickwork	45-50
Concrete (including Pre-Cast Panels)	250-255
Fluorescent Lighting	<1
Glass	<1
Timber	4-5
Gypsum	1-2
Bitumen	<1

4.1.3 Salesians

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	55-60
Metal Corrugated Cladding	10-15
Brickwork	1900-2000
Concrete (including Pre-Cast Panels)	3390-3400
Fluorescent Lighting	2-3
Glass	1-2
Timber	6-7
Gypsum	5-6
Masonry/Stone	2-3
Bitumen	5-6

4.1.4 Shipyard

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	25-30
Metal Corrugated Cladding	2-3
Brickwork	45-50
Concrete (including Pre-Cast Panels)	120-125
Fluorescent Lighting	<1
Glass	<1
Timber	2-3
Gypsum	1-2

4.1.5 Stonetown Terrace

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	30-35
Metal Corrugated Cladding	5-10

Material	Estimated Quantity (tonnes)
Brickwork	45-50
Concrete (including Pre-Cast Panels)	100-110
Fluorescent Lighting	<1
Glass	<1
Timber	2-3
Gypsum	<1

4.1.6 Infiltration Gallery

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	45-50
Metal Corrugated Cladding	35-40
Brickwork	10-15
Concrete (including Pre-Cast Panels)	945-950
Fluorescent Lighting	<1
Glass	<1
Timber	5-7
Gypsum	1-2

4.1.7 Engine House

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	35-40
Metal Corrugated Cladding	2-3
Brickwork	55-60
Concrete (including Pre-Cast Panels)	340-345
Fluorescent Lighting	<1
Glass	<1
Timber	2-3
Gypsum	1-2
Natural Stone	30

4.1.8 Cheese Plant

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	55-60
Metal Corrugated Cladding	2-3
Brickwork	65-70
Concrete (including Pre-Cast Panels)	640-645
Fluorescent Lighting	<1
Glass	<1
Timber	3-5
Gypsum	1-2

4.1.9 Workshop

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	30-35
Metal Corrugated Cladding	2-4
Brickwork	15-20
Concrete (including Pre-Cast Panels)	485-490
Fluorescent Lighting	<1
Glass	<1
Timber	3-5
Gypsum	1-2
Bitumen	1-2

4.1.10 Victorian Houses

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	20-25
Metal Corrugated Cladding	3-5

Material	Estimated Quantity (tonnes)
Brickwork	5-10
Concrete (including Pre-Cast Panels)	330-340
Fluorescent Lighting	<1
Glass	<1
Timber	2-4
Gypsum	1-2

4.1.11 Reservoir

The materials estimated to be taken from this area of site are as follows:

Material	Estimated Quantity (tonnes)
Steel	5-10
Concrete (including Pre-Cast Panels)	30-35

4.2 Waste Management Options

Based on the materials identified in the desk-based analysis and summaries in the D-BoQ table above, the following recommendations are made for the use of the arisings from the demolition.

Materials will be reused where possible in line with CE principles and the waste hierarchy. Material will be recycled only if reuse is not possible, with an overall diversion from landfill rate of demolition material of at least 80% by weight or 70% volume.

Relevant waste management details for all waste streams generated during the Construction and Demolition phases are presented in the Construction and Demolition Resource and Waste Management Plan (CDRWMP, ARUP, 2025) submitted separately as part of this planning application.

4.2.1 Concrete & blockwork

In alignment with CE principles, blockwork shall first be considered for reuse on site and applications for reuse off site shall also be explored. Reuse is dependent upon the condition of the bricks, how they are bound together and the demolition practice used.

The contractor/developer shall ensure that as many potential contaminants as possible are removed during ‘soft strip’ of buildings to maximise the quality of crushed concrete aggregate that can be produced.

The contractor/developer shall explore feasibility of extracting pre-cast concrete elements intact for possible re-use.

If this is not deemed feasible, the inert waste (concrete and blockwork) can be processed (crushed and graded) into Recycled Aggregate (RA), that can be used on site for backfill, haul roads, piling mats etc subject to required permits / licences being in place.

Where it cannot be used on site, this waste shall be segregated and recycled off-site as a backfill material or similar for use elsewhere.

4.2.2 Brickwork

The contractor/developer shall engage with architectural salvage companies (a number of local companies have already expressed an interest) to establish interest in taking red brick material from building fabric.

The type of brick will vary from building to building and this may influence the interest in same.

The project shall allow time for selective demolition to facilitate careful removal of the brickwork material there is a market interest in salvaging.

4.2.3 Electrical Waste

Where appropriate, electrical components and items stripped out shall be segregated for consignment to an authorised WEEE-approved waste operator.

Cables, lighting units and fittings and electrical wiring should be segregated for consignment to an authorised metal recycler

The fluorescent lighting throughout the site shall considered for reuse on site, depending upon their condition. If this is not deemed feasible, these can be recycled. Strip lighting may contain mercury and therefore will need to be recycled through a specialist recycler.

4.2.4 Glass

This window type glass used on site may be suitable for recycling; however, it requires being sent to a specialist recycling facility. Due to their age and poorer environmental performance/rating, the majority of the window units on site would not be considered for direct-re-use other than though architectural salvage where older windows are required to be replaced elsewhere.

4.2.5 Mixed Waste

All wastes shown above shall be segregated to achieve the best reuse or recycling rate and highest value use, however as a result of the development there will be mixed demolition waste. This needs to be processed by a licensed waste contractor and shall be expected to be recycled as much as possible, depending on the waste.

4.2.6 Metal (structural steel, sheeting, frames, ancillary items)

It may be possible to dismantle the metal structures on site such as metal stairs, handrails, propping, metal sheeting found on site.

For all other metal components removed during the demolition (e.g. window frames, down pipes) these can be easily recycled off site to produce a wide range of high-quality metal products such as reinforcement bars for concrete, metal beams, guttering, etc.

Metals are normally classified as non-hazardous waste and can either be ferrous or non-ferrous metal.

Ferrous metals are those containing iron with added elements to achieve properties such as corrosion resistance (stainless steel) whereas non-ferrous metals do not contain any iron and are usually naturally corrosion resistant such as aluminium or copper. As ferrous metals are magnetic and non-ferrous metals are not this allows for easy separation of the metals if they are stored as mixed metal waste. Non-ferrous metals such as aluminium and copper have a higher value currently than ferrous metals.

4.2.7 Natural Stone

In alignment with CE principles, stone blockwork shall first be considered for reuse on site and applications for reuse off site shall also be explored. Reuse is dependent upon the condition of the masonry element, how they are bound together and the demolition practice used.

The Contractor shall try to source segregate the material as far as possible to limit presence of contaminants to try to maximise re-use opportunities.

Explore potential outlets for re-use of this natural stone as structural or construction material (e.g. for wall, pier construction etc) rather than general fill material.

The Contractor shall look at opportunities to salvage any natural slate roofing material if it can be done safely.

These materials shall be carefully removed and stored on pallets. The Contractor shall engage with local architectural salvage companies and Limerick 2030 to try and facilitate reuse opportunities

If this is not deemed feasible, the inert waste (stone) can be processed (crushed and graded) into Recycled Aggregate (RA), that can be used on site for backfill, haul roads, piling mats etc.

Where it cannot be used on site, this waste shall be segregated and recycled off-site as a backfill material or similar for use elsewhere.

4.2.8 Gypsum (Plaster/Plasterboard)

Plasterboard is a non-hazardous waste, however it must be disposed of in dedicated cells in landfills where it cannot mix with organic waste (such as food waste), as it will produce hydrogen sulphide. Due to this restriction, either disposal costs or transport costs for plasterboard waste can be higher than other non-hazardous material. This provides a strong incentive to recycle plasterboard.

Plasterboard can be readily recycled; a number of companies provide a service to recycle plasterboard with the waste being used for new plasterboard or a range of other products requiring the gypsum in the plasterboard, such as soil improver.

Plasterboard material can be recycled once it is clean and doesn't contain too many contaminants. Where possible, the plasterboard material on site (in partition walls and ceilings) shall be stripped out (minimising contaminants adhering to the material) and source-segregated, stored in such a manner to keep it dry and sent for recycling.

4.2.9 Asphalt

Dependent on the appointed contractor and timescale, it is possible to reuse the asphalt on site either in a cold or hot process, combining it with new material. Reuse on site is the preferred waste management method in line with the CE and waste hierarchy.

During the demolition, asphalt needs to be removed in a way that enables the top layer of the asphalt to remain separate from lower layers, which may contain other materials e.g. aggregates or soil.

Where it is not possible to reuse the asphalt on site, the material can be reused off site to produce asphalt when combined with new material or converted into Recycled Aggregate.

4.2.10 Timber

Timber is usually classified as non-hazardous waste, however it may be classified as hazardous if certain preservatives, like creosote, have been used on it; this will need to be checked, so that non-hazardous and hazardous timber is not mixed.

Some timber components like fence posts/cladding or doors may have architectural or structural value and can be reused relatively easily, if removed from buildings carefully. This would be the preferred option, taking into consideration CE principles and the waste hierarchy.

Untreated timber is likely to be recycled for fibreboard production, can be utilised as a mulch or compost or as a feedstock for an incinerator (with energy recovery) or a biomass boiler (either on or off site).

4.2.11 uPVC

As uPVC window frames are a composite product containing uPVC, metal and rubber, and their dimensions are very specific, applications for on-site reuse are limited. If removed carefully, the entire windows could be reused off site. The uPVC downpipes can also be reused off site, dependent upon their condition.

There is a limited amount of uPVC windows on site, if reuse is not possible for the window frames, these shall be recycled. After the glass has been removed the window frames can be sent to a recycler.

The frames are typically shredded into a fine material. Any non-uPVC impurities (such as rubber) are filtered out and magnets are used to separate the metals from the plastic mix. The pure uPVC granules are then melted down to create uPVC pellets. Once recycled, these pellets can be mixed with a virgin polymer for use in manufacturing new window frames or other uPVC products.

4.3 Reclamation

It is considered that the blockwork from the buildings on site may have some value and as such it is recommended that these are removed from the building for reuse offsite if no onsite reuse can be undertaken. This would move their use up the waste hierarchy and this use would be in alignment with CE principles, as the blockwork would be reused rather than recycled.

The practicality of reusing blockwork depends on how the blocks were bound together and the presence of any rendering. If the blocks were bound using mortar it is possible to remove the blocks one by one. However, if the blocks were bound using cement it is difficult to remove and as a result recycling would be more suitable.

It is also recommended that any timber components in acceptable condition, i.e. internal doors, is first considered for reuse either on or off site, in alignment with CE principles. The viability of reusing these materials may be restricted, however, for example the doors may not meet modern fire safety standards, etc.

There may be opportunities to declassify crushed concrete arisings as a waste material if it can be processed under an approved end-of-waste process. This would need to be planned in advance of demolition works being undertaken.

The Client and the Contractor shall explore local opportunities for reuse of the crushed concrete, if it is not possible to reuse all of it on site. This shall involve a review of proposed upcoming projects in Limerick City and environs which may require the use of engineering fill material, capping material or subbase. A positive environmental outcome would be where crushed concrete is used a substitute for virgin quarried material at a location close to where it was generated.

It is recommended that the Contractor should prepare a Resource Recovery Plan mapping out the materials streams that are proposed to be re-used and recycled and the proposed outlets / end uses. This shall refer to and use the Waste Inventory, in particular for material arisings in specific buildings or structures which have been identified as having medium / high reuse or recycling potential. This inventory outlines the location of materials within the building, the Resource Recovery Plan shall specify this level of detail where appropriate.

4.4 Local Waste Management Facilities

Sites in the Region that are authorised to accept C&D waste streams are presented in detail in the Construction and Demolition Resource and Waste Management Plan (CDRWMP, ARUP, 2025) submitted separately as part of this planning application'

4.5 Record information

In addition to reference material and reports mentioned elsewhere in this report, the following information has been relied upon in producing this Pre-Demolition Waste Audit:

01. Measured Building Surveys
18885-Block 11-Cheese Plant
18885-Block 12-NCR Workshops
18885-Block 13-O'Callaghan Strand Offices
18885-Block 14-Shipyard Site Warehouse
18885-Block 1-6-Flaxmill, Cold Store & Dairy Buildings
18885-Block 7&8-Infill Gallery & Water Tank Building
18885-Block 9&10-Chimney & Engine House
Building Numbering.pdf
J617D001 Site Layout Map (8).pdf
0-Building 11 Cheese Store.pdf
18885-01-02.dwg
18885-01-100.pdf
18885-011-01.dwg
18885-01-101.pdf
18885-01-102.pdf
18885-01-103.pdf
18885-01-104.pdf
18885-01-105.pdf
18885-01-200.pdf

18885-01-201.pdf
18885-01-202.pdf
18885-01-203.pdf
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18885-06-300.pdf

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1804BB~1.PDF
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180B17~1.PDF
180D88~1.PDF
180DEE~1.PDF
180EB8~1.PDF
181587~1.PDF
181B7A~1.PDF
181CEB~1.PDF
181D17~1.PDF
1826B0~1.PDF
182D7A~1.PDF
183161~1.PDF
183754~1.PDF
183884~1.PDF
1841C4~1.PDF
184BF9~1.PDF
184F43~1.PDF
1853FC~1.PDF
1857A0~1.PDF
1859EF~1.PDF
185DF9~1.PDF

1860BE~1.PDF
1864C8~1.PDF
186ABB~1.PDF
186C2D~1.PDF
186D5D~1.PDF
1872BE~1.PDF
188529~1.PDF
18885-~1.BAK
18885-~1.DWG
18885-~1.PDF
18885-~2.PDF
18885-~3.PDF
18885-~4.PDF
1888C5~1.PDF
188B48~1.PDF
1895E0~1.PDF
1896F8~1.PDF
189BD3~1.PDF
18A58F~1.PDF
18A757~1.PDF
18AE14~1.PDF
18AEE7~1.PDF
18B291~1.PDF
18B5E2~1.PDF
18C7E2~1.PDF
18C950~1.PDF
18CF43~1.PDF
18D08C~1.PDF
18DC6E~1.PDF
18E120~1.PDF
18E186~1.PDF
18EA15~1.PDF
18EB2D~1.PDF
18EFAE~1.PDF
18F358~1.PDF
FORM01~1.PDF
01 Drawings
01 Drawings
180EB1~1.PDF
1816FF~1.PDF
183168~1.PDF
186AB2~1.PDF
18885-~1.BAK
18885-~1.DWG
18885-~1.PDF

18885-~2.PDF
18885-~3.PDF
18885-~4.PDF
1895E9~1.PDF
18EB24~1.PDF
18FA71~1.PDF
02. Scoping
EIAR Environmental Baseline Report.pdf
EIAR Project Scoping & Consultation Report.pdf
Masterplan Public Consultation Report Rev03.pdf
Project Scope & Overview.pdf
Statement of Significance P01.pdf
CLEEVE_1.PDF
Cleeves_Volumes_V4_Final_04-09-25.pdf
03. Asbestos Surveys
Cleeves Site - Asbestos Survey Report PE24-1226 6.11.2024 (1).pdf
Cleeves Site - Asbestos Survey Report PE24-1226 6.11.2024.pdf
Flaxmill Asbestos Survey Report.pdf
05. CEMP
0117216DG0003 rev 2 - Working Draft CEMP -Issued for Legal Review.docx
4. Topographic Surveys
18885-200-04 2D.dwg
18885-200-04 3D.dwg
18885-200-04.pdf
18885-201-04.pdf
18885-202-04.pdf
18885-203-04.pdf
20210211_131401_HDR.jpg
20210211_155948_HDR.jpg
20210211_163859.jpg
20210211_163951.jpg
20210211_165024.jpg
5. CRQMP
CRQMP-ARUP-ZZ-ZZ-RP-ES-0001.pdf
CRQMP-FCBS-XX-XX-RP-AA-P-00-Stage 1 Planning Initial Report.pdf
crqmp-fcbs-xx-xx-rp-aa-p-00-stage 2a1 report combined rev b.pdf

5. Conclusion

This report presents the findings of site inspections and a desk-based analysis conducted as part of the Pre-Demolition Audit, outlining key information on the main demolition arisings and their potential for reuse and recycling.

Calculations estimate that approximately 9580 tonnes of waste will be generated. While the exact amount of waste that can be diverted from landfill cannot be confirmed at this stage, this will be determined in the appointed demolition contractors Site Waste Management Plan which will be developed taking account of the CES (ARUP, 2025) and CDRWMP (ARUP, 2025) submitted as part of this planning application.

Further calculations and analysis would be required to more accurately determine the waste arisings from the site. A more detailed evaluation will provide a more comprehensive understanding of the materials involved and their potential for reuse or recycling. These analyses shall be crucial for identifying further opportunities for re-use or recycling of materials.

Diversion from landfill will include off-site recycling for the majority of materials, such as metals and blockwork. The appointment of a Demolition Contractor and/or Project Supervisor for the Construction Stage (PSCS) with a proven track record of high reuse and recycling rates on previous projects will be beneficial in achieving the recovery rates outlined in Table 4-1.

This audit report provides the necessary baseline data to enable the development of the Resource and Waste Management Plan (RWMP) and the Circular Economy Statement (CES) by relevant parties. It is intended as a preliminary document. The findings herein are to be used by others to inform and shape the reuse, recovery, and recycling pathways as the project progressed through the detailed design and demolition and construction phases.

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