



CONVERSION AND ADAPTATION

BEN509 – Assignment 2

Assignment 2: Individual Conversion and Adaptation Report

A report based on an existing building to determine the feasibility of a proposed conversion and refurbishment for ground floor commercial units with residential apartments to 1st, 2nd, and 3rd floors. Feasibility is based on a desktop survey & onsite photograph's. All defects are accessed including their severity and any remedial measures that may be required. Two of these defects are studied in further detail including detailed drawings of required remedial works and any relevant restrictions or stipulations.

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Word Count: 1598 (excluding contents, references & figures)

Chapter 1 – Introduction

1.1 Background

This building is in EastSide, one of five NI Executive “Urban Villages”. During the peak of the shipyard trade, this was a bustling retail area with a diverse range of thriving businesses. With the decline in the shipping industry the area has fell into disarray with many derelict buildings and empty retail units. The Urban Villages Initiative is an action within the NI Executive’s Together: Building a United Community (TBUC) Strategy, working towards a common aim to return it to its former prosperous condition.



Figure 1 - Left to Right - EastSide Urban Villages Initiative & EastSide Container Park (Executive Office, 2019)

The Newtownards Road is the main artery between Belfast City Centre and Ards and its steeped in 200 years of history. One of the main improvement strategies is to improve all frontages and have people living above the shops again. Schemes like the EastSide Container Park, The Neighbourhood Renewal Scheme, Connswater Community Greenway, are a few of the recent redevelopment schemes.



Figure 2 - EastSide Community Gardens (GoogleMaps, 2020)

1.2 Architectural & Cultural Heritage

Although many of the brick-built mills and factories have been demolished there is evidence remaining of the former rich architectural heritage. Influenced by the manufacturing industry that dominated this part of Belfast, that original character can still be seen on buildings like Portview Trade Centre, Corporation Baths and the red brick terrace rows.



Figure 3 - Portview Trading Centre (Portview Trading Centre, 2020), Corporation Baths (Ulster Architectural Heritage, 2019), Red Brick Terrace Row (Executive Office, 2019)

This building is not as quite as old and is not an actual listed building. It is still very important to honour and respect the architectural history and culture of the surrounding area. The original red brickwork can be seen below the peeling paint. Any restoration work should try to restore this and retain the character of the area.



Figure 4 - Photo of existing building

1.3 Location Address & Description

Address: 374–378 Newtownards Road/1–7 Welland Street, Belfast, BT4 1HG.

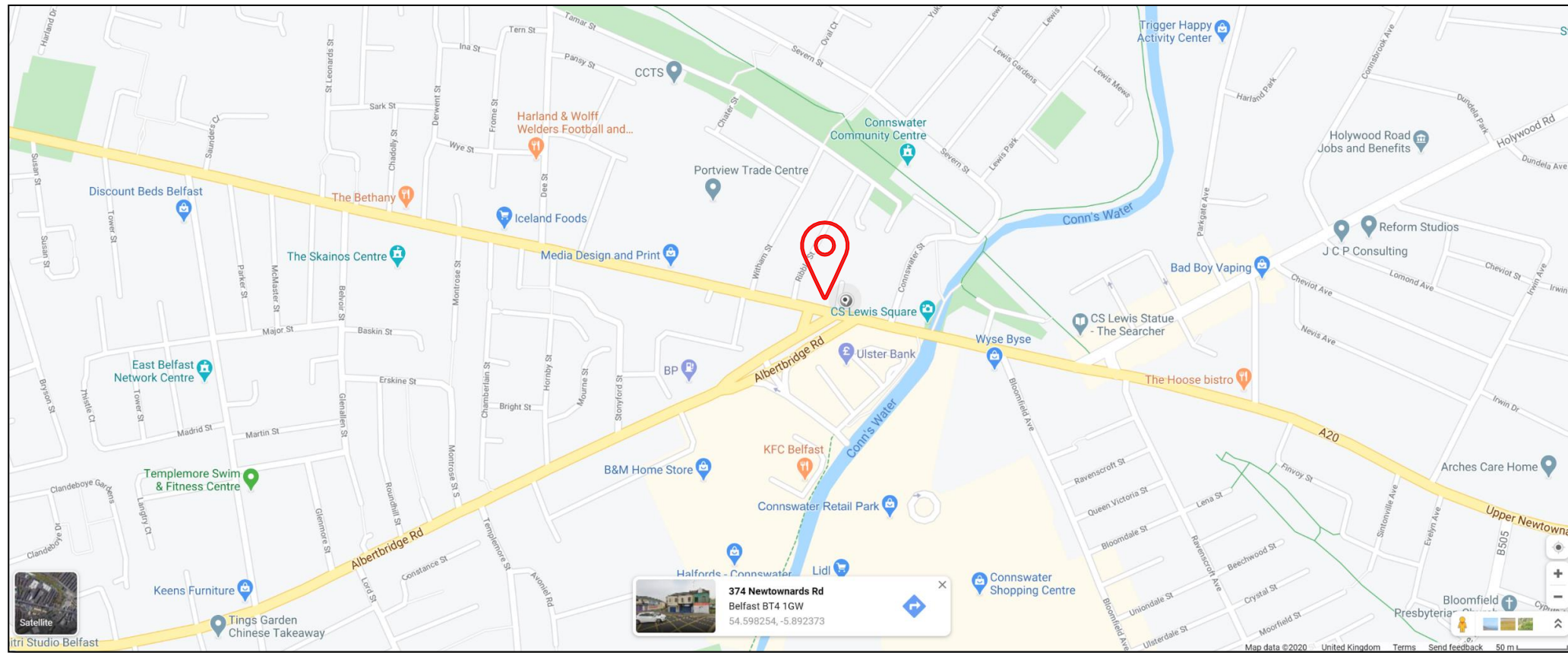


Figure 5 - Map Showing Location of Building (GoogleMaps, 2020)

The building occupies a prominent location on the corner of Newtownards Road/Welland Road in East Belfast. It is a focal point when travelling from the Albertbridge Road and benefits from having a dual frontage to both Welland Road(21m) and Newtownards Road(14m). The site area is approx. 332m².



Figure 6 - Location Plan N.T.S

Chapter 2 – Present Day

2.1 Building Description

The building has 3 ground floor retail units, a garage and one upper floor apartment. It's been vacant for at least 15 years and has been left unmaintained. Fire damage to the property can be clearly seen in the Google Maps Photos (May2014).



Figure 7 - Google Maps photos of building (GoogleMaps, 2020)

Some remedial work has taken place on the building - the upper floor windows have been boarded up and the façade has been cleaned. Visually, the walls look structurally sound, but the roof has been damaged beyond repair. The upper floor windows are mostly missing and there's no external windows/doors behind the shutters on the ground floor. The ground floor is in average condition but with the damaged roof the upper floor will have extensive damp, mould, and water damage.



Figure 8 - Current photos showing some remedial work carried out since the fire

PLANNING - The site has a lapsed planning permission (Z/2005/2375/F) for a mixed-use development - of one ground floor retail unit and 8no. 2-bedroom upper floors apartments.

Any subsequent restoration or development is subject to approval by the planning authorities and must be in accordance with the guidance in the **Belfast Metropolitan Area Development Plan** and the **Belfast Urban Area Plan. PPS6 - Planning, Archaeology and The Built Heritage**. Section 2 outlines the guidelines for areas that may not have merited a conservation area status but instead are defined as areas of townscape or village character. The **ATC (Areas of Townscape Character) Design Guides** can help with any proposed development in these areas.

BUILDING CONTROL

Technical Booklet E - Means of Escape, Internal/External Fire Spread, Structure, Linings & Fire Rescue Facilities etc.

Technical Booklet R - Ensures access, circulation, and sanitary accommodation is accessible for all users equally and that special provisions are made for ambulant disabled users

Technical Booklet F1&F2 - Ensures that minimum acceptable standards are met with regards to the energy requirements of the building including material change of use, controlled services, fittings and operating/maintenance instructions.

Guidelines set out in the other booklets also require to be followed.

HEALTH & SAFETY - Works to comply with HSE's **Approved Codes Of Practice (ACOP's)**. The building will require to be checked for asbestos, if found it must be disposed of in accordance with the regulations. A **Risk Assessment** should be carried out by a H&S engineer before access is granted.

BRITISH STANDARDS - Work to be carried out in accordance with British Standards, e.g. **BS9999:2017 Fire safety in the design** and **BS7913:2013 Guide to the conservation of historic buildings**. BS7913 is relevant for buildings with or without statutory protection.

Chapter 3 – Condition Survey

3.1 Inspection

Survey Date: 03-15-20

By: Paul McVeigh

Inspected: All exterior elements

Equipment: Tape Measure, Camera

Restrictions: *(Due to access restrictions some assumptions were required for the purpose of this exercise)*

3.2 Traffic Light System & Severity (BS16096:2012)

A traffic light system was used to indicate and record the severity of defects in the building and assess the urgency of remedial works to be carried out. The key is as follows:



Highlights defects that are serious and/or need to be repaired or replaced. These defects could be in danger of permanently damaging the building or causing serious health & safety hazards.



Highlights defects that require repairing or replaced but are not considered to be either serious or urgent. Threat to the building is minimal but eventual repair is required



















Highlights areas where little repair is required, and the building element is in reasonably good condition.

Condition class (CC)	Symptoms
CC 0	No symptoms
CC 1	Minor symptoms
CC 2	Moderately strong symptoms
CC 3	Major symptoms

Figure 9 - Condition and urgency risk classification guidance (BS EN 16096:2012)

3.4 Component Matrix

Building Components	Severity	Related Photos	Component Description	
			Condition Description & Required Action	CC
Roof			Fire damage to roof. Slates are missing and holes through the roof. Vegetation visible. Roof is beyond repair.	3
Rainwater Goods			Existing guttering missing/damaged. Downpipes present but in poor condition. Rainwater goods to be removed/replaced.	3
External Finish (Render/Tiles)			Many areas of “boast” or cracked render. Could indicate a more serious structural impairment. Tiles around entrance falling off. Remove render. Brick underneath to be inspected, cleaned and repointed if possible.	2
Existing External Brickwork			Newtownards Road façade has existing painted brickwork in reasonable condition. Many areas require repointing. Paint is flaked throughout. Brick restoration with chemical strippers and low-pressure power washing if possible.	2
Windows & Doors (External)			Windows are missing, boarded up or damaged. Many single glazed panes broken. Most cills have broken off/been removed. Retail glazing/doors have been removed/boarded up. Double-glazed windows to be installed in all openings. Curtainwall shop front glazing to retail frontage	3
Internal Wall			Internal stud walls in poor condition with damp, graffiti, and plaster damage. Internal walls to be demolished and removed.	2
Internal Ground Floor			Solid concrete floor slab in reasonable condition. Structural engineer to confirm suitability of retaining floor.	1

Building Components	Severity	Related Photos	Component Description	
			Condition Description & Required Action	CC
Ground Floor Ceiling			Existing suspended ceiling is rotten and falling apart. Entire ceiling to be taken down and removed.	2
Ground Floor Doors/Joinery			Ground floor doors/joinery work in poor condition/missing. Joinery works to be removed. New doors, skirting/architrave to be included in proposals.	2
<i>THE OBSERVATIONS BELOW ARE AREAS UNABLE TO BE INSPECTED DUE TO ACCESS RESTRICTIONS. ASSUMPTIONS HAVE BEEN MADE WHERE POSSIBLE BASED ON THE EXTERNAL CONDITION</i>				
Foundations		N/A	Structural engineer to investigate condition and type when possible.	3
Intermediate Floor		N/A	Fire damaged intermediate floor requires replacement. Structural engineer to investigate as soon as possible.	3
Complete Upper Floor		N/A	Entire upper floor in extremely poor condition. All existing building components to be stripped, removed, and made ready for new construction. Inside of external walls require cleaning/treatment.	2
Mould and Damp		N/A	Mould to be washed with specialist soap. Building to be inspected for damp and specialist measures taken if required. Ventilation system to be included in design proposals	3
Mechanical & Electrical		N/A	Electric and drainage systems may be in a poor/dangerous condition. Full inspection to be carried out by a qualified electrician/plumber as soon as possible	3
Cavity Wall and Insulation		N/A	Inner skin of external walls is blockwork. Cavity is not insulated. External walls to be dry-lined with insulated plasterboard and cavity to be pumped.	2

Chapter 4 – Areas of Focus

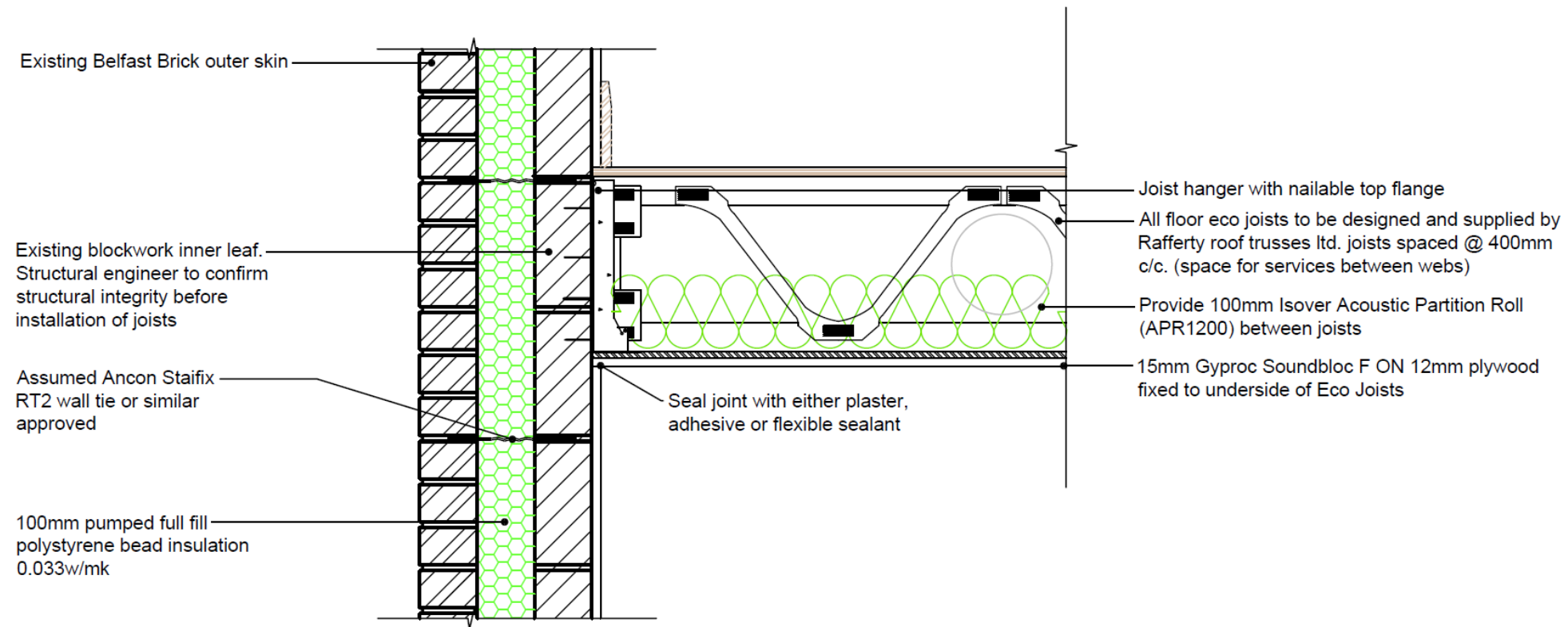
4.1 Intermediate Flooring – Metal Web Joists

The building requires a new intermediate floor. This is difficult in a restoration with the uncertainty of conditions. A lightweight option would be advisable. With the nature of the proposed use, minimal sound penetration and large spans would be desirable.



Figure 10 - Metal Web Joists (Roof Trusses UK, 2020)

Metal Web Joists are an ideal solution. They are lightweight, easily erected with minimal disruption to the surrounding structure. They are an engineered product, can be made to size and with the windows being removed on this building they will be easily manoeuvred into place. They come in many different sizes/designs and can be top/bottom hung. The increased strength makes them suitable for the larger span across an open retail unit and they are not susceptible to shrinkage, creaking or vibration reducing sound penetration. Services are easier to install with no cutting required. They are slightly more expensive than a standard joist. However, costs saved on labour/fixings/services and strapping makes them an extremely cost-effective option.



**Intermediate Floor Detail
(Eco-Joist) 1:10**

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Drawn By: PMV	Checked By: **	Date: 2020-06-28	
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Client Name: Belfast City Council			
Project Details: Restoration and renovation at 274-278 Newtownards Road, Belfast. Ground floor retail units and 1st floor apartments			

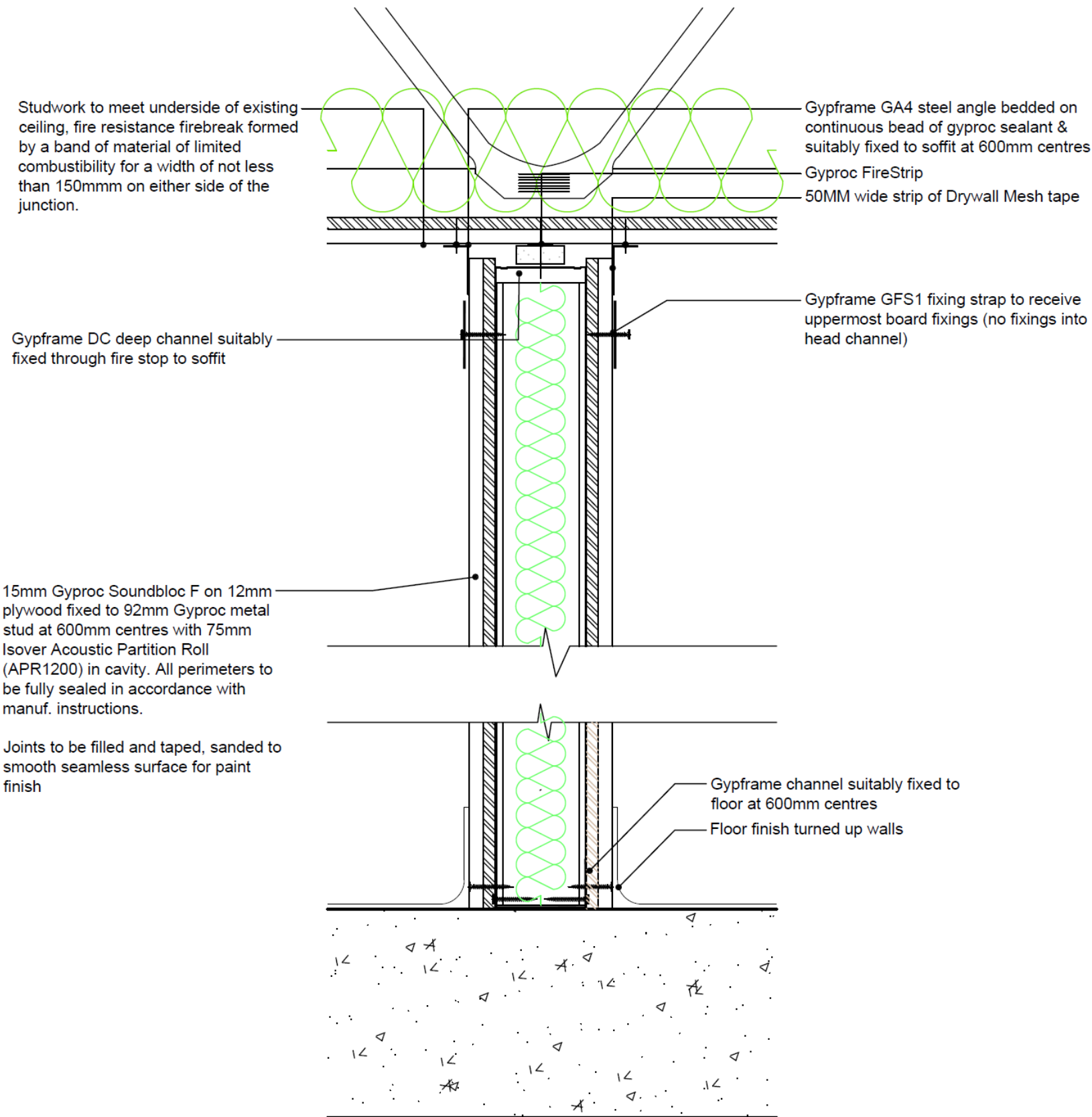
This building requires sound and fire separation between compartments. Each fire-resistant component must have firestopping to seal opening/joints and prevent fire from passing between compartments. The insulation in the partition walls, plasterboard, fire stopping and the type of fixings require specification.




Figure 11 - Metal Stud (British Gypsum, 2020), Insulation (Isover, 2020) & Plasterboard (British Gypsum, 2020)

British Gypsum and Isover do several products that satisfy both the fire and sound requirements. Studwork to be Gyproc Metal Studwork at 600mm centres. Insulation to be Isover Acoustic Partition Roll (ARR1200). It is a glass mineral wool roll which provides a high level of acoustic insulation. The rolls push-fit between 600mm stud centres making it easy to install with the metal stud. Plasterboard to be Gyproc SoundBloc F. This Gypsum plasterboard has a dual performance higher density noise insulating and fire performance core protecting compartments from both sound and fire. Fire stop to be 3x25mm Gyproc FireStrip. This system gives a total of 60mins fire resistance.

4.4 Partition Wall Details



Partition Wall Details
1:5

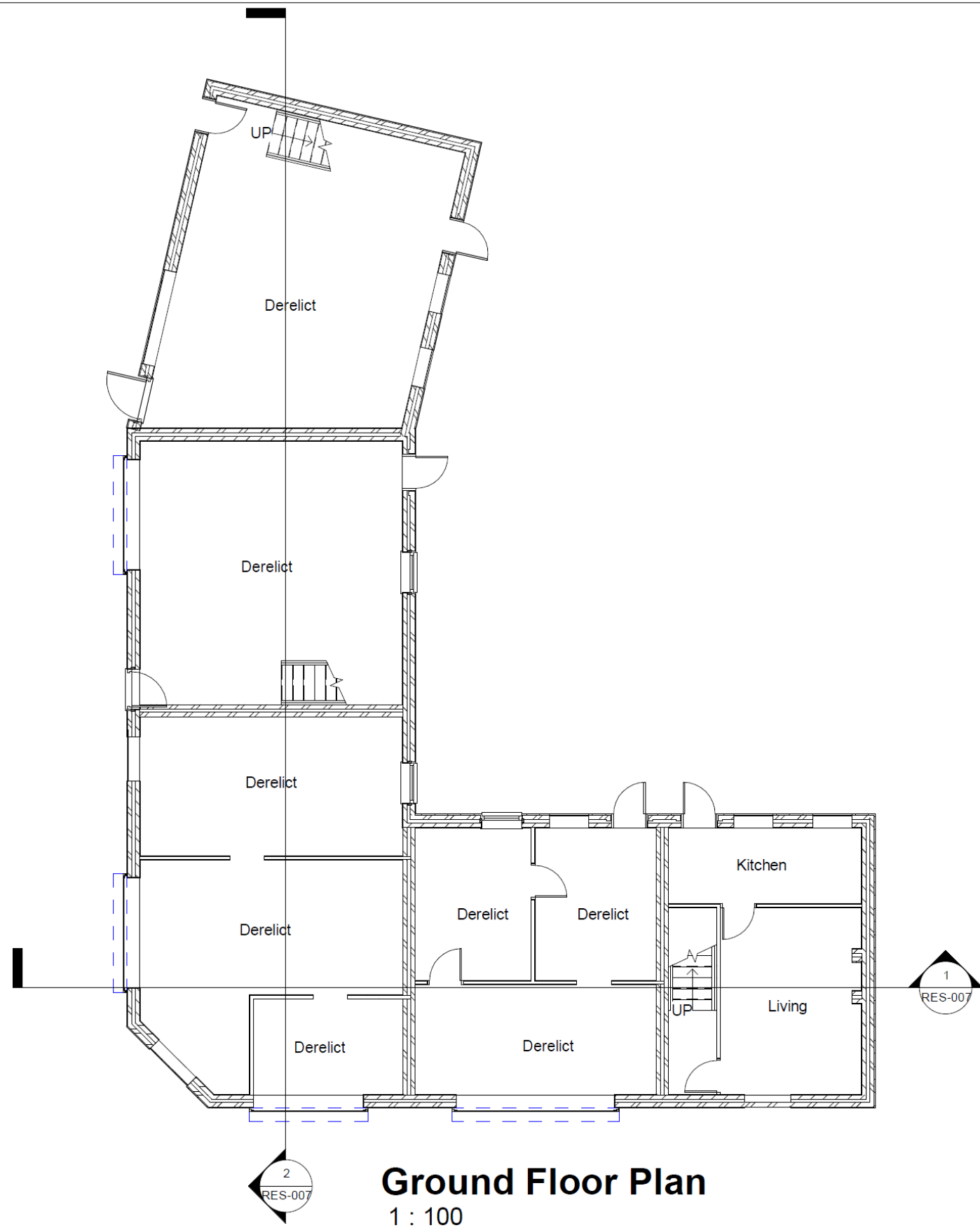
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Project Details: Restoration and renovation at 274-278 Newtownards Road, Belfast. Ground floor retail units and 1st floor apartments			


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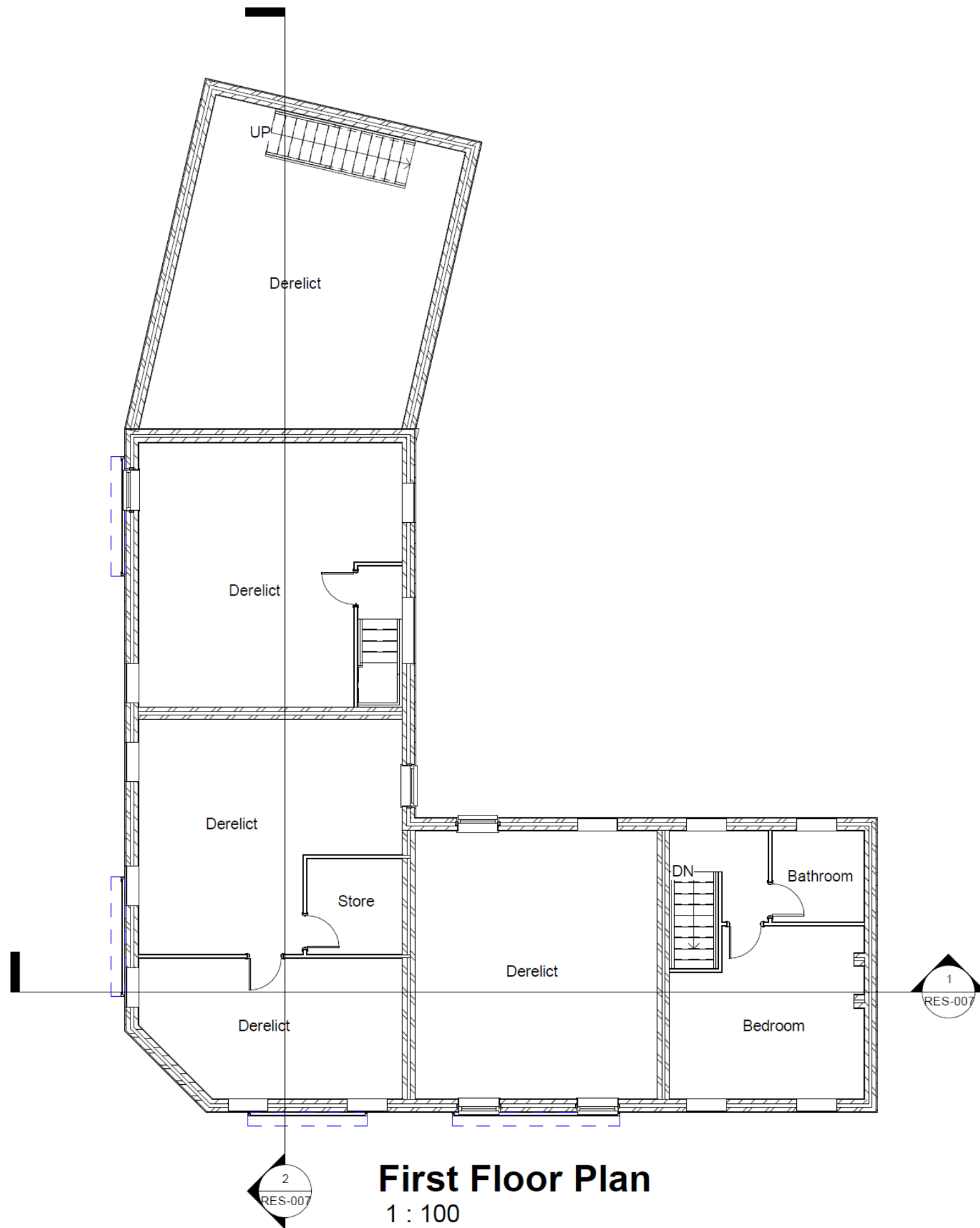
Chapter 6 – References

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- (2020). Retrieved from ATFMCC: <https://www.atfmmc.co.uk/restoration/>




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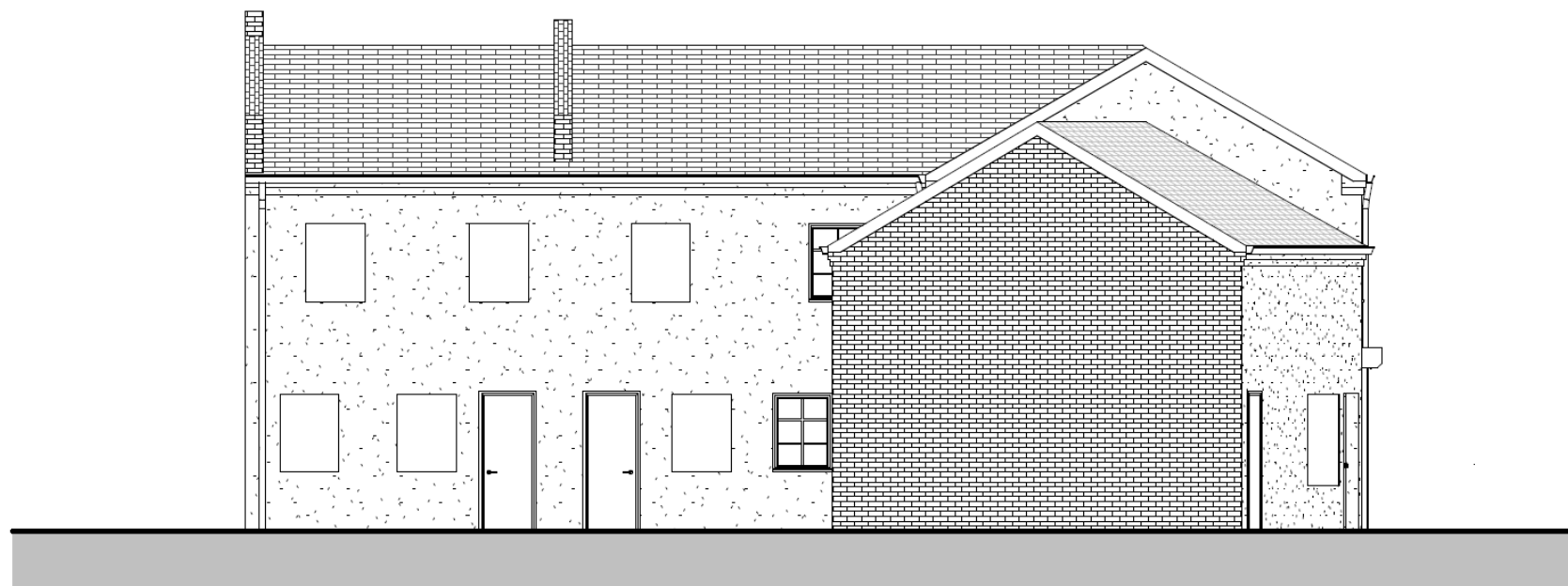


First Floor Plan
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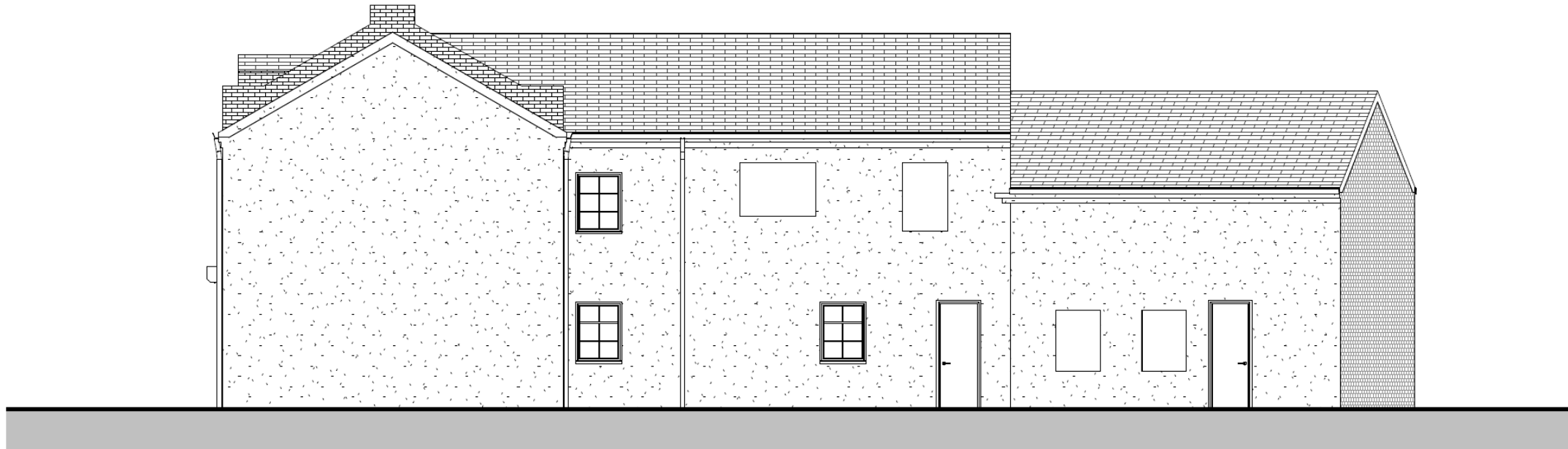


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North East Elevation
1 : 100


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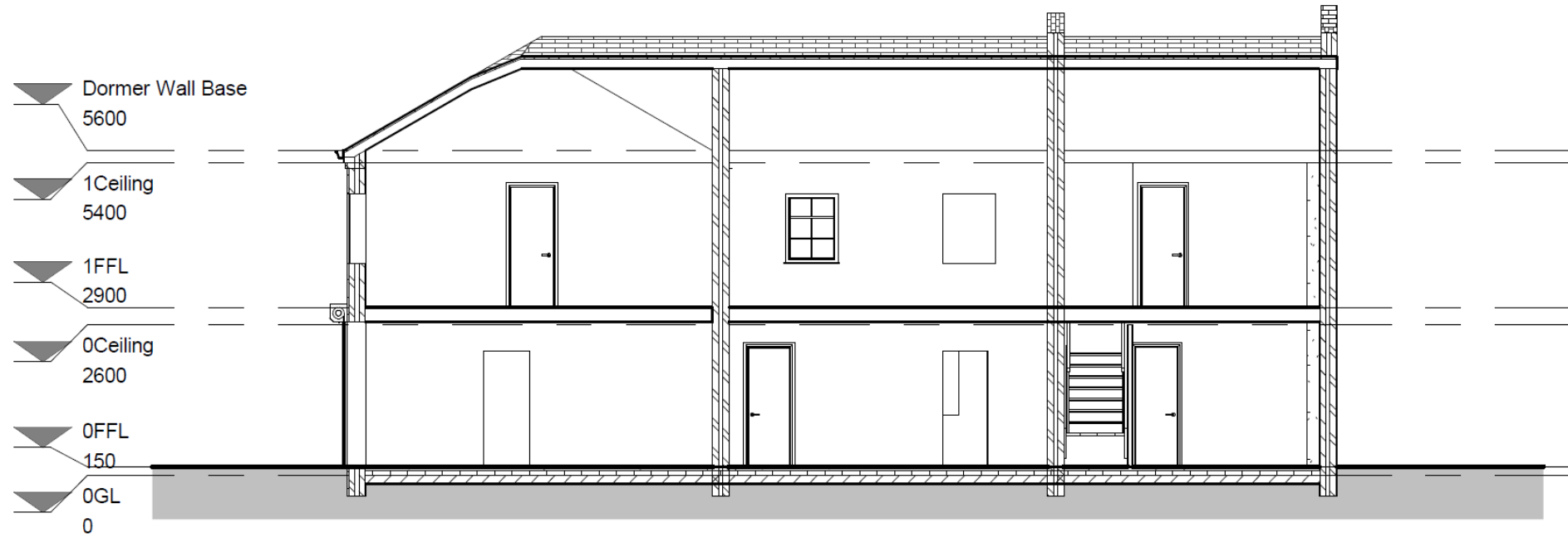


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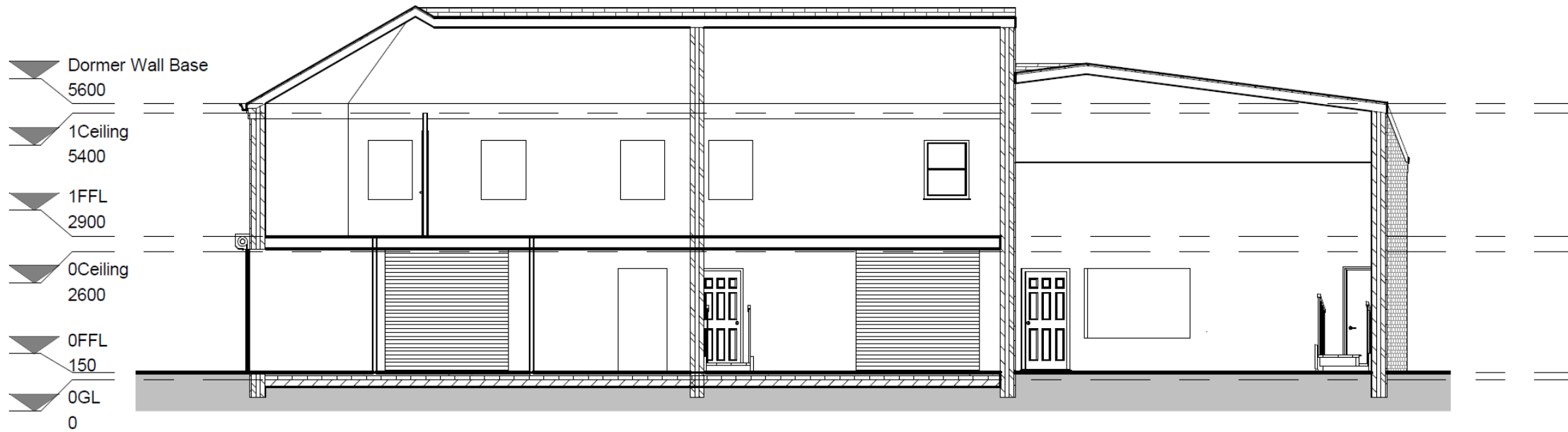


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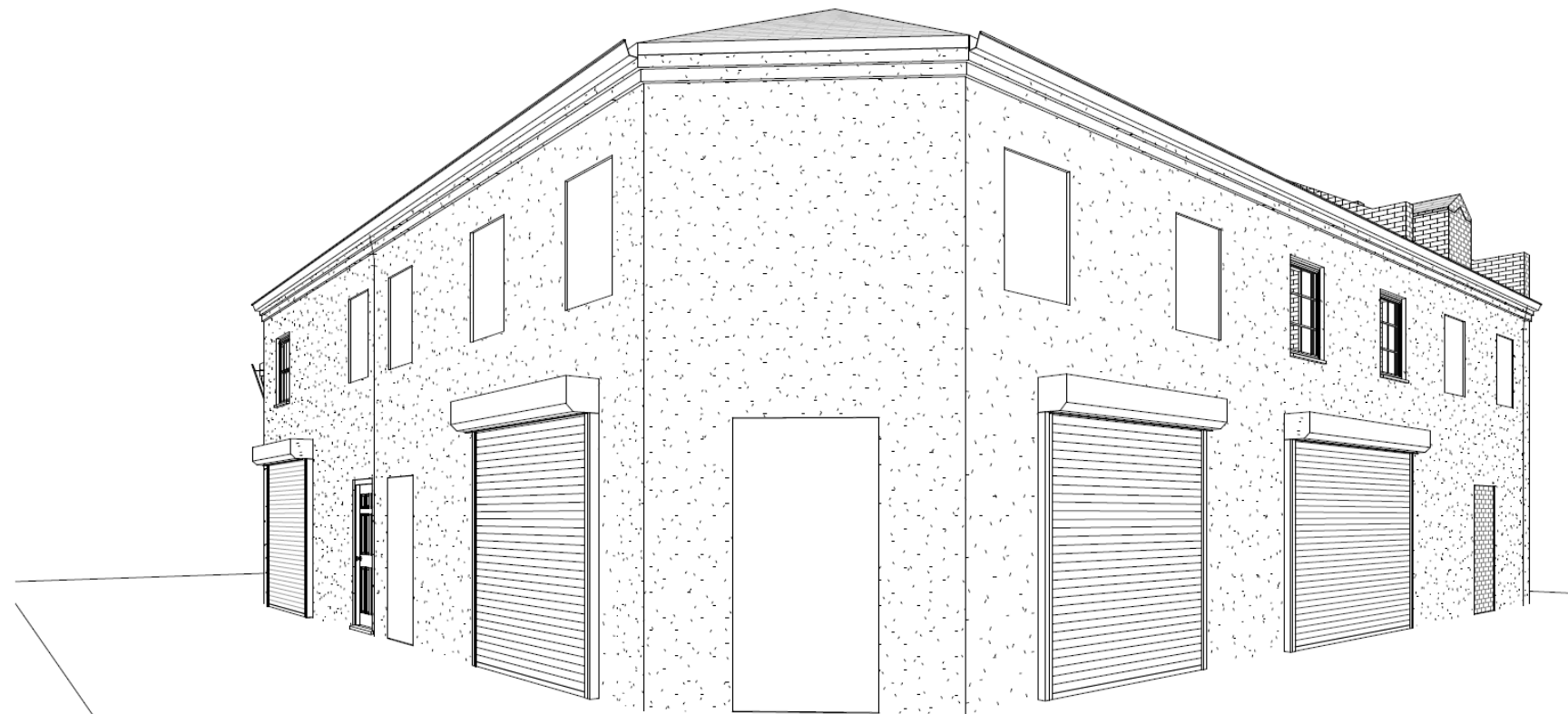


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Project Details Restoration and renovation - Ground floor retail & 1st floor apartments			



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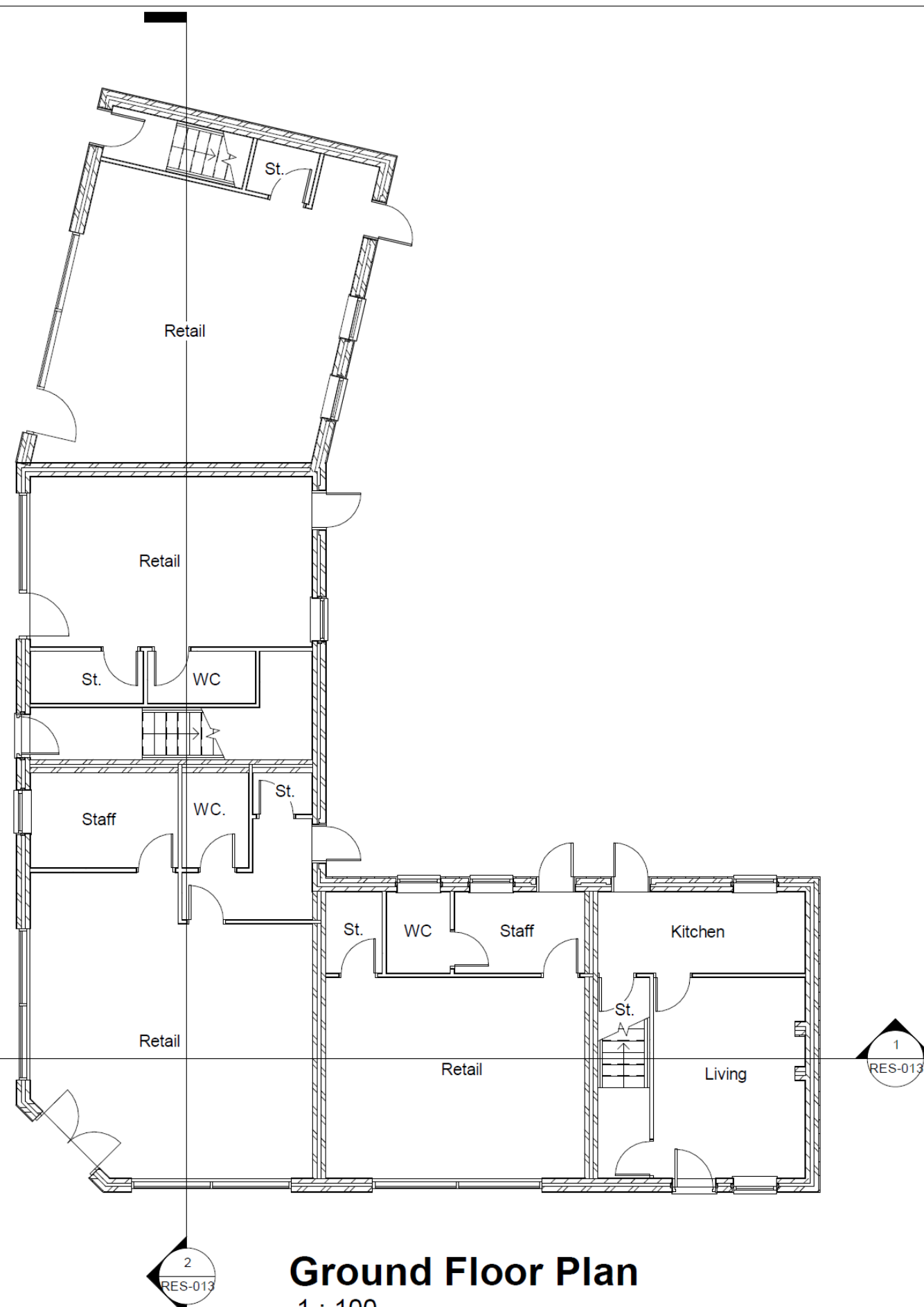
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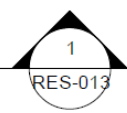



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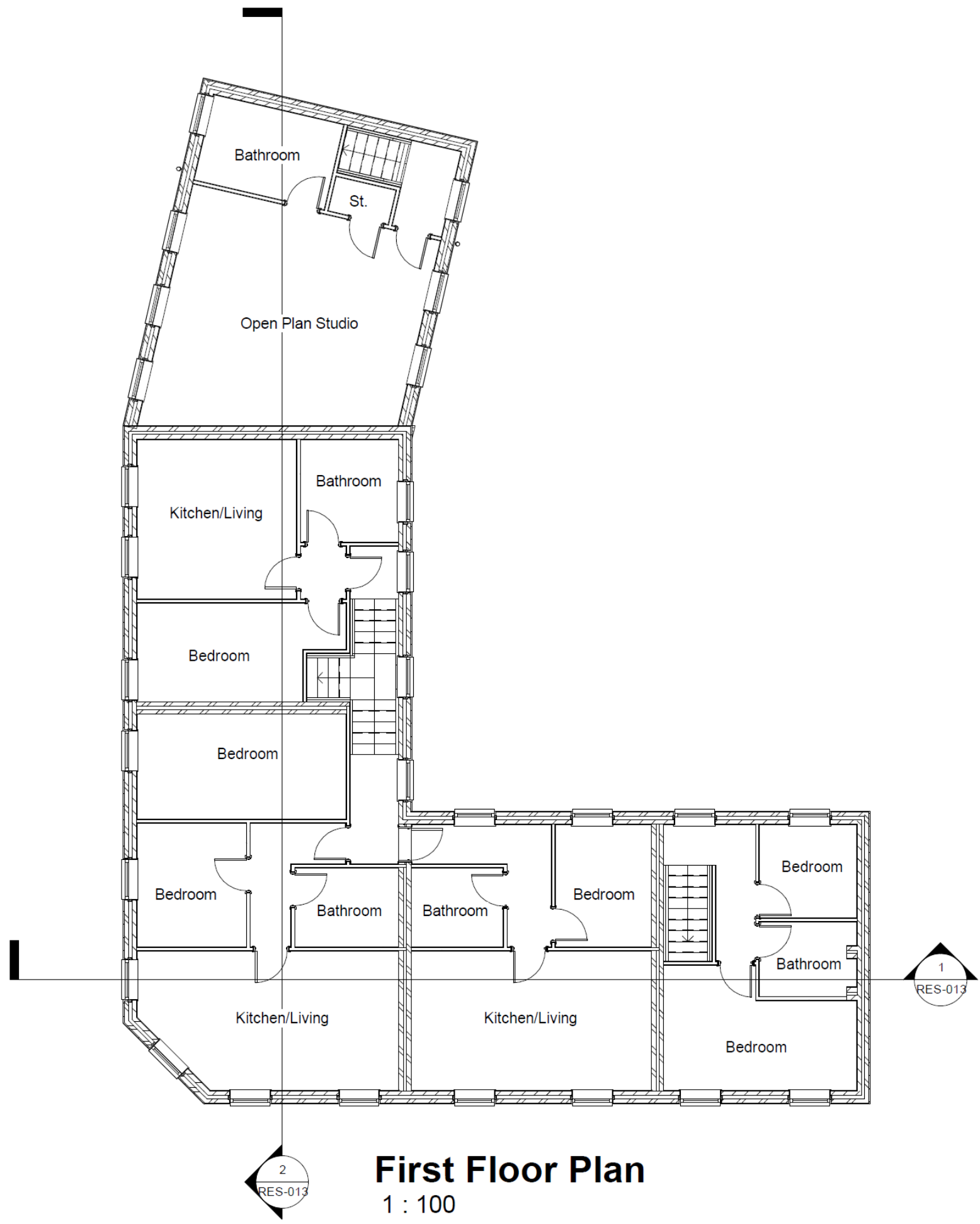


Ground Floor Plan
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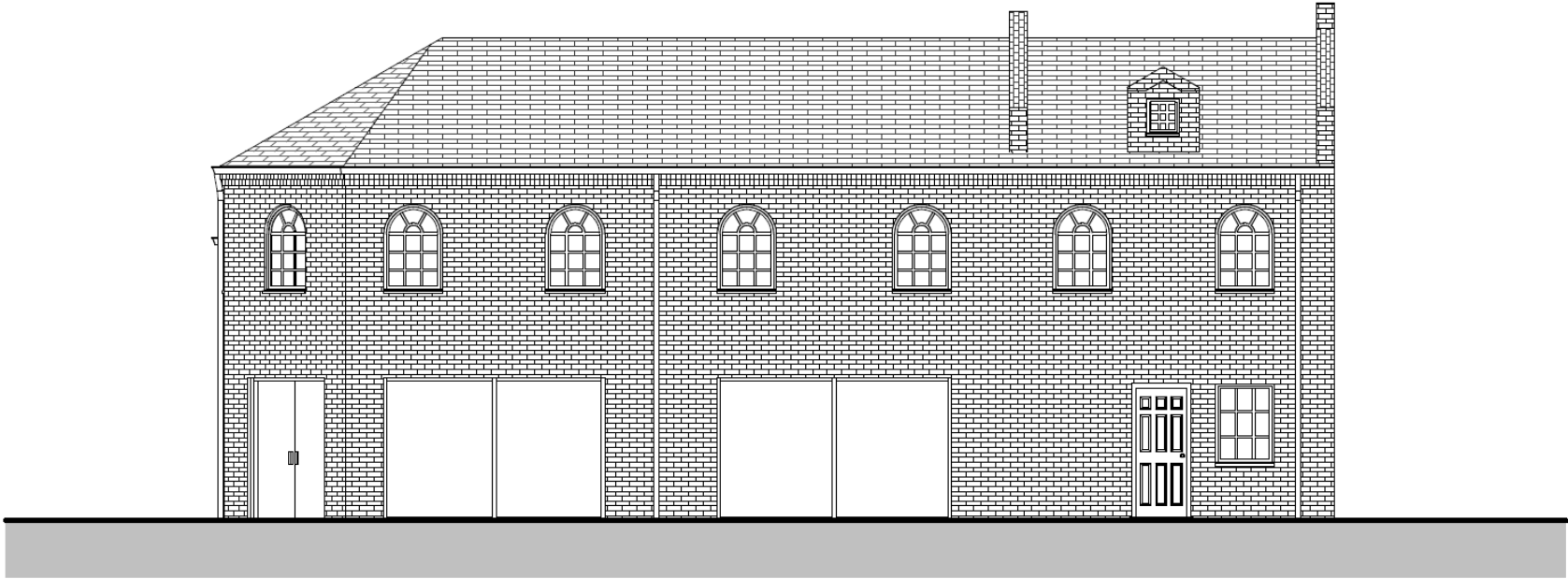
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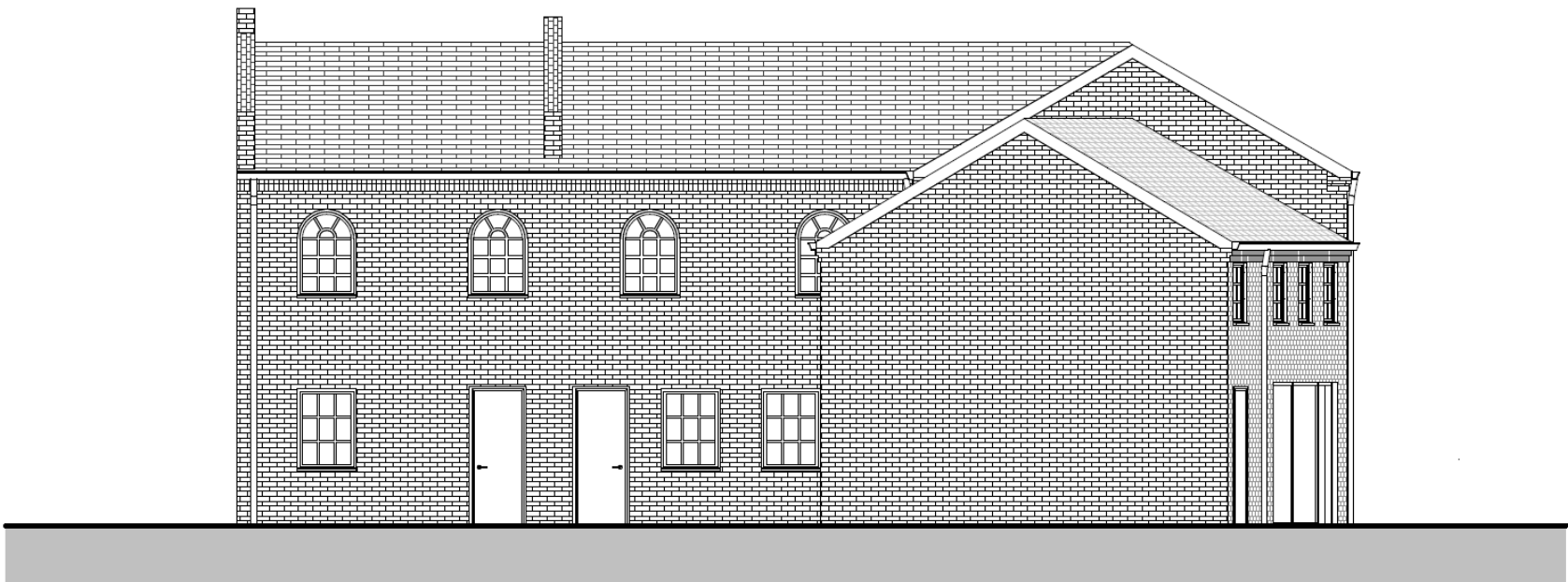


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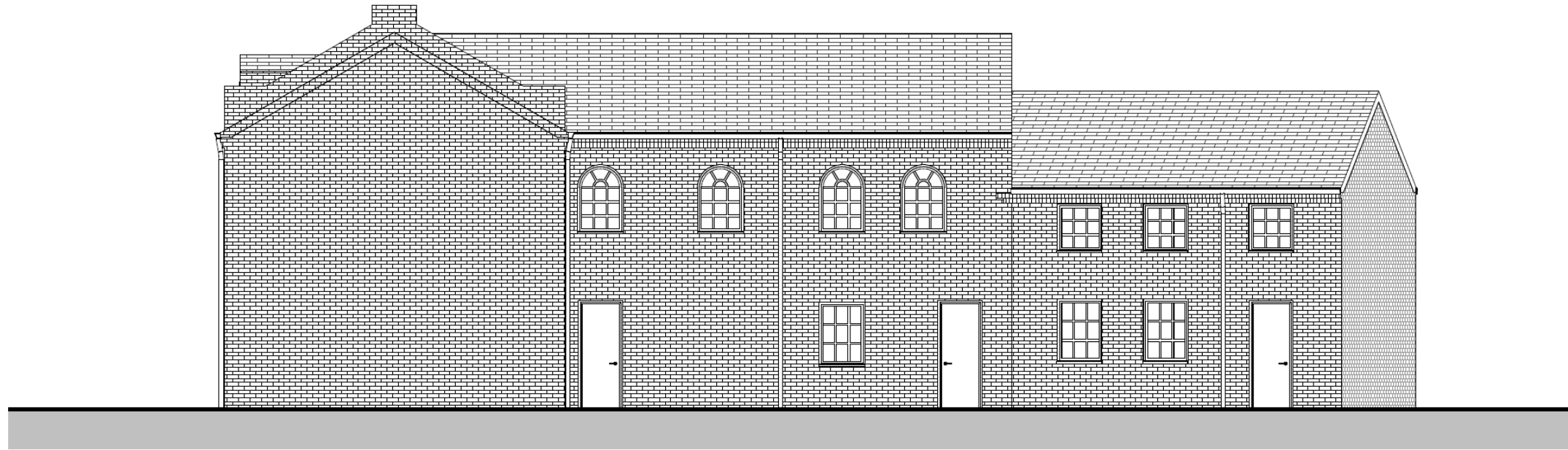


South West Elevation
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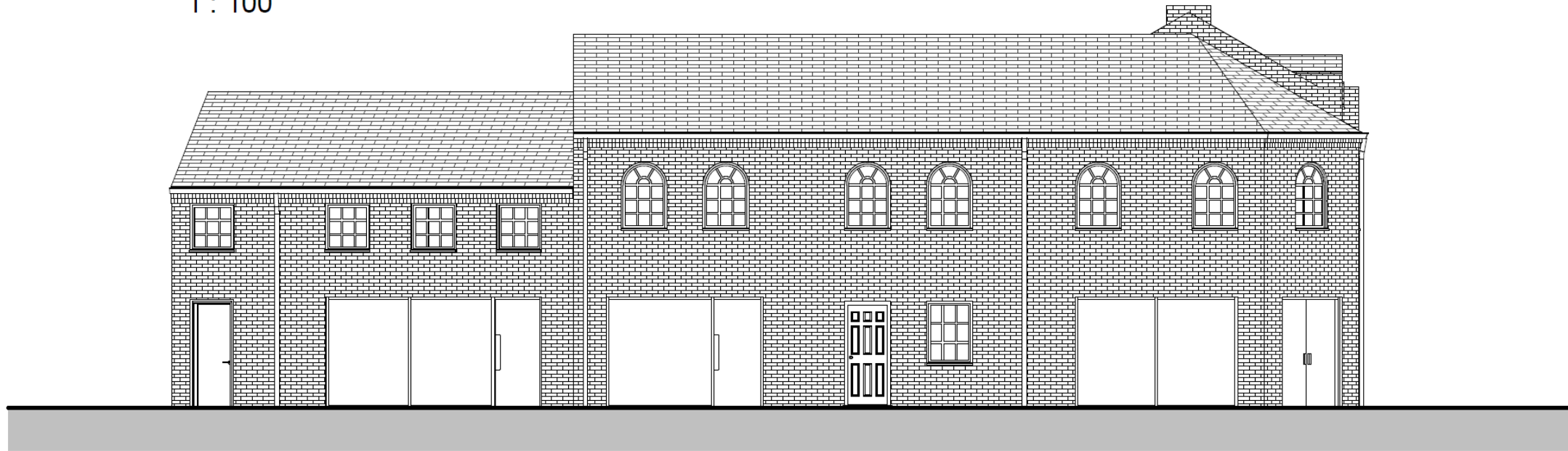


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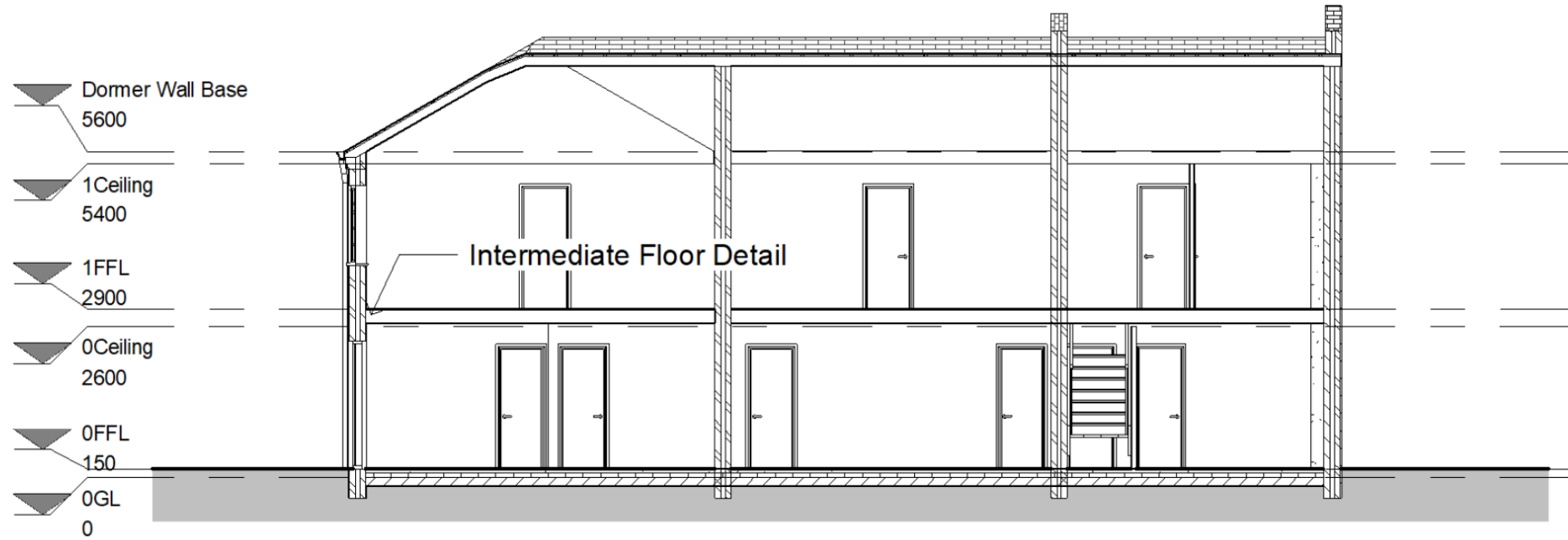


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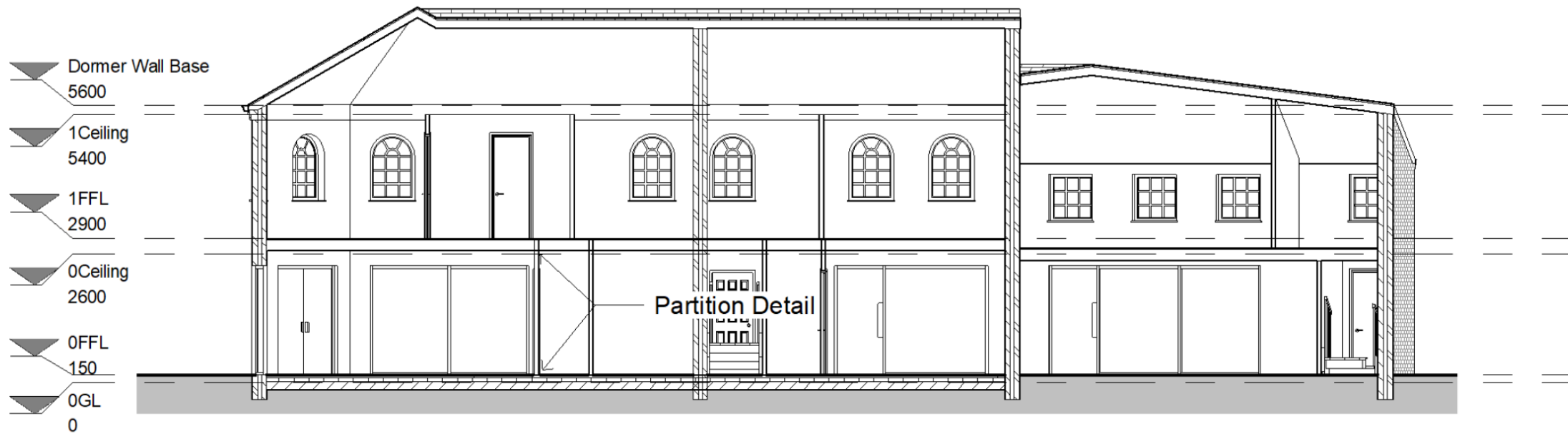


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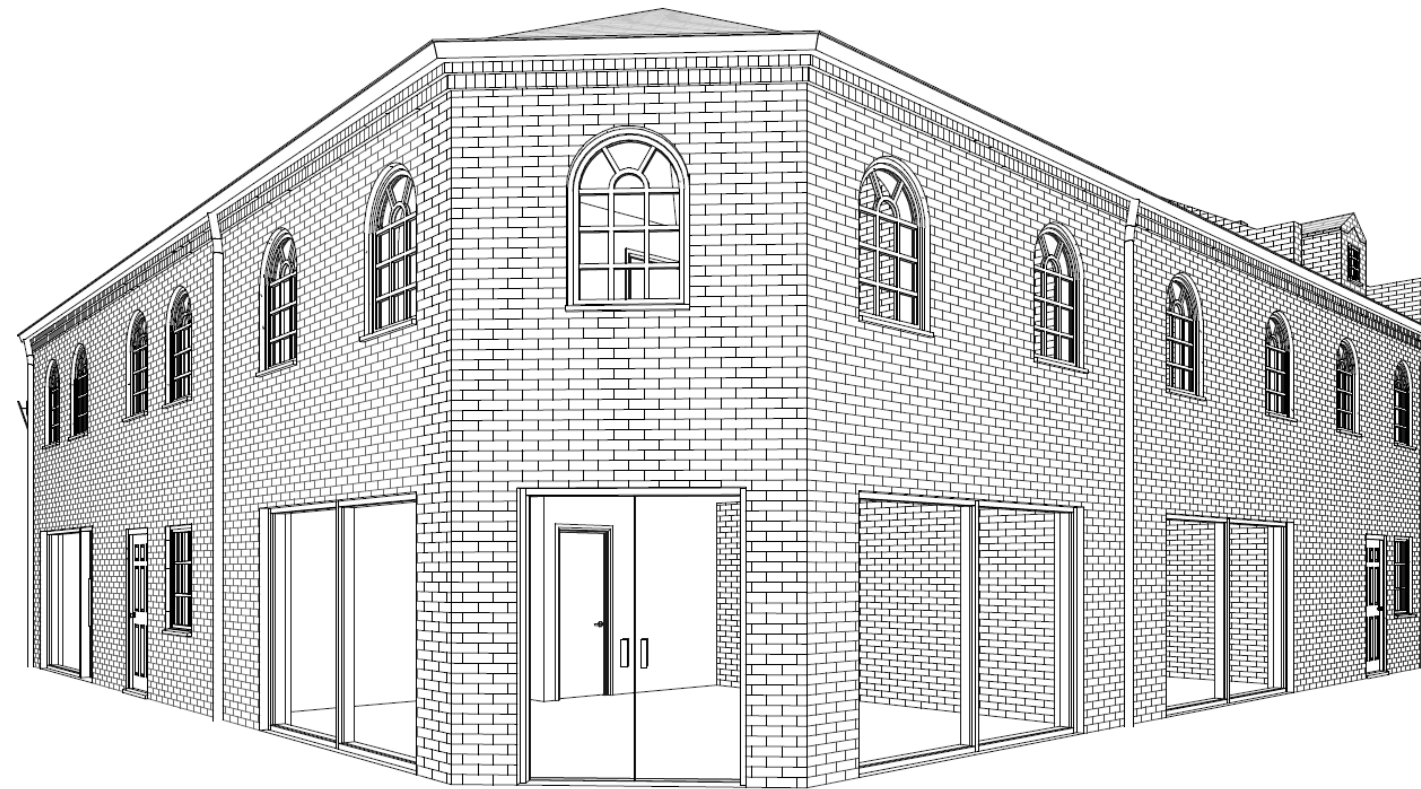
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Sketch Perspective

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Client Name Belfast City Council			
Project Details Restoration and renovation - Ground floor retail & 1st floor apartments			



3D Visualisation

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Project Details Restoration and renovation - Ground floor retail & 1st floor apartments			