King Street, Wrexham

Foul Drainage - Phosphate Neutrality Assessment

November 2025



Waterco

Assessment | Modelling | Design

Project Information	
Project:	King Street, Wrexham
Report Title:	Foul Drainage - Phosphate Neutrality Assessment
Client:	True Estates Ltd
Instruction:	The instruction to undertake this Foul Drainage - Phosphate Neutrality Assessment Report was received from Carl Hughs of HDS Architectural Services acting on behalf of the Client
File Ref:	17155-Foul Drainage- Phosphate Neutrality Assessment- 02

Approval Record	
Author:	Adam McCulloch BSc (Hons)
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Approver:	Nigel Jones BEng (Hons) CEng MICE

Document History		
Revision	**Date**	**Comment**
01	17/10/2025	First issue
02	07/11/2025	Second issue – updated following Local Planning Authority comments

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Introduction

Waterco have been commissioned to prepare a Foul Drainage Phosphate Neutrality Assessment in relation to the proposed conversion of an office building to a House in Multiple Occupancy at 67 King Street, Wrexham, LL11 1HR.

Site Overview

The site covers an area of approximately 195m^2 and is located at National Grid Reference (NGR): 333388, 350675. A location plan and aerial image are included within Appendix A.

Online mapping (including Google Maps / Google Streetview imagery, accessed October 2025) shows that the site comprises an existing office building. The site is bordered by a commercial property to the north, Rhosddu Road to the east, commercial / residential properties and King Street to the south, and Wrexham Telephone Exchange to the west. Access to the site is provided from Rhosddu Road and King Street.

Existing Drainage

Public sewer records have been obtained from Dŵr Cymru Welsh Water (DCWW) and are included in Appendix B. The DCWW sewer records show that there is a 750mm public combined sewer immediately east of the site within Rhosddu Road flowing south. The sewer records also show a 375mm public combined sewer located south-west of the site within King Street flowing north-east. The 375mm public combined sewer in King Street connects to the 750mm public combined sewer within Rhosddu Road.

Foul flows from the site currently discharge to the public combined sewer. Foul flows will continue to discharge to the public combined sewer (via the existing connection) post-development.

Nutrient Neutrality Assessment

In order to inform the assessment of phosphate quantities from the site, the existing and proposed foul flows have been estimated.

Existing Foul Flows

The British Water Code of Practice, Flows and Loads-4 (Sizing Criteria, Treatment Capacity for Sewage Treatment Systems) has been used to estimate the existing daily foul flows. Foul flows have been estimated based on:

- A staff population of 19 for the office building.
- A daily flow of 50 litres per person per day (for an office without canteen).

Based on a flow of 50 litres per person per day, the estimated daily flow from the existing office building is 950 litres.

Proposed Foul Flows

The proposed development includes the conversion of the office building into a House in Multiple Occupation (HMO). 9no. single bedrooms are proposed. A population of 9 has therefore been used for this assessment. Existing and proposed development plans are included as Appendix C.

The HMO will be served by a shared kitchen, 1no. kitchenette, 6no. individual en-suite bathrooms (toilet and shower), and 1no. shared bathroom (toilet and shower) for bedrooms 4, 5 and 8.

In accordance with the Welsh Government Nutrient Budget Calculator Guidance (2025), 'the estimated average water usage per person is set to a default of 120 litres/person/day which is 10 litres higher than the Building Regulations standard set by the Welsh Ministers of 110 litres/person/day of wholesome water where a dwelling/unit is erected. The standard is based on a 'fittings approach' where water efficiency compliance is achieved through water efficient fittings. The extra 10 litres/person/day is a precautionary approach to account for water usage variations and account for any potential future changes to the water fittings in perpetuity….. If a dwelling/unit is formed by a material change of use of a building, then this value should be changed to 135 litres/person/day. Again, this value is 10 litres/person/day above the Building Regulations standard of 125 litres/person/day in order to be precautionary for the same reasons identified above.'

Based on a population of 9 and a water usage of 135 litres per person per day, the estimated daily wastewater flow from the proposed development is 1215 litres.

To ensure that daily wastewater flow from the proposed development remains below the existing wastewater flow quantities, the development will need be limited to a maximum population of 7. Based on a population of 7 and a water usage of 135 litres per person per day, the estimated daily wastewater flow from the proposed development is 945 litres.

Table 1 summarises the existing and proposed foul flow quantities.

Table 1 – Existing and Proposed Foul Flow Quantities

	Existing	Proposed (with a maximum population of 7)
Foul Flows (litres per day)	950	828.9

The phosphate concentration (mg/l) discharged into the River Dee Special Area of Conservation (SAC) is controlled by the performance of the receiving Welsh Water wastewater treatment works and is not influenced by the proposed development use. Therefore, where a development results in a reduction in wastewater flow entering the public sewer and downstream wastewater treatment works, it will also reduce the phosphate quantity discharged from the wastewater treatment works into the River Dee.

As the development will reduce the quantity of foul flows, it will also reduce the phosphate quantity entering the River Dee. The development is therefore phosphate neutral and will not cause detriment to the River Dee SAC.

Conclusions

Foul flows from the proposed development will continue to discharge to the public combined sewer.

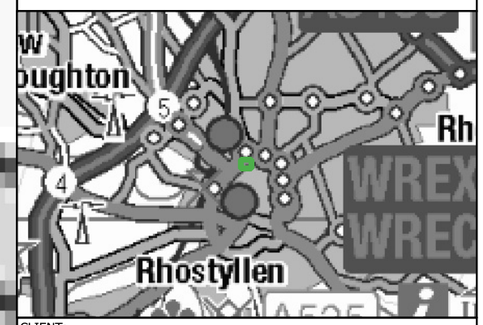
To ensure no increase in foul flows when compared to the existing situation, a maximum population of 7 can be achieved. As the development (with a population of 7) will reduce the quantity of foul flows, it will also reduce the phosphate quantity entering the River Dee. The development (based on a population of 7) is therefore phosphate neutral and will not cause detriment to the River Dee SAC.

Appendix A Location Plan & Aerial Image

Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

- Site Boundary
- Watercourses
- Waterbodies



PW

0 10 20 30 40 50 m

CLIENT:
True Estates Ltd

www.waterco.co.uk

SCHEME:
King Street, Wrexham

PLOT TITLE:
Location Plan

PLOT STATUS:	DATE:
FINAL	09-10-2025

DRAWN:	CHECKED:	APPROVED:	PLOT SCALE AT A3:
AM	AW	NJ	1:400

PLOT NAME:	REVISION:
17155_Location_Plan	-

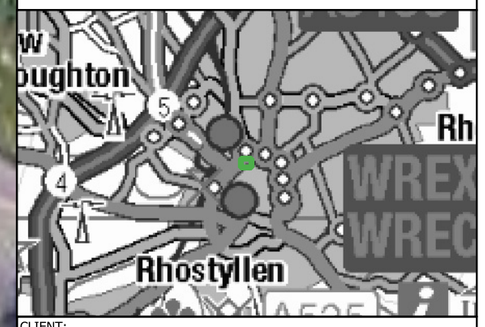
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Notes:
1) All dimensions are in metres and all levels in metres above Ordnance Datum unless stated otherwise

LEGEND

Site Boundary



CLIENT:
True Estates Ltd

www.waterco.co.uk

SCHEME:
King Street, Wrexham

PLOT TITLE:
Aerial Plan

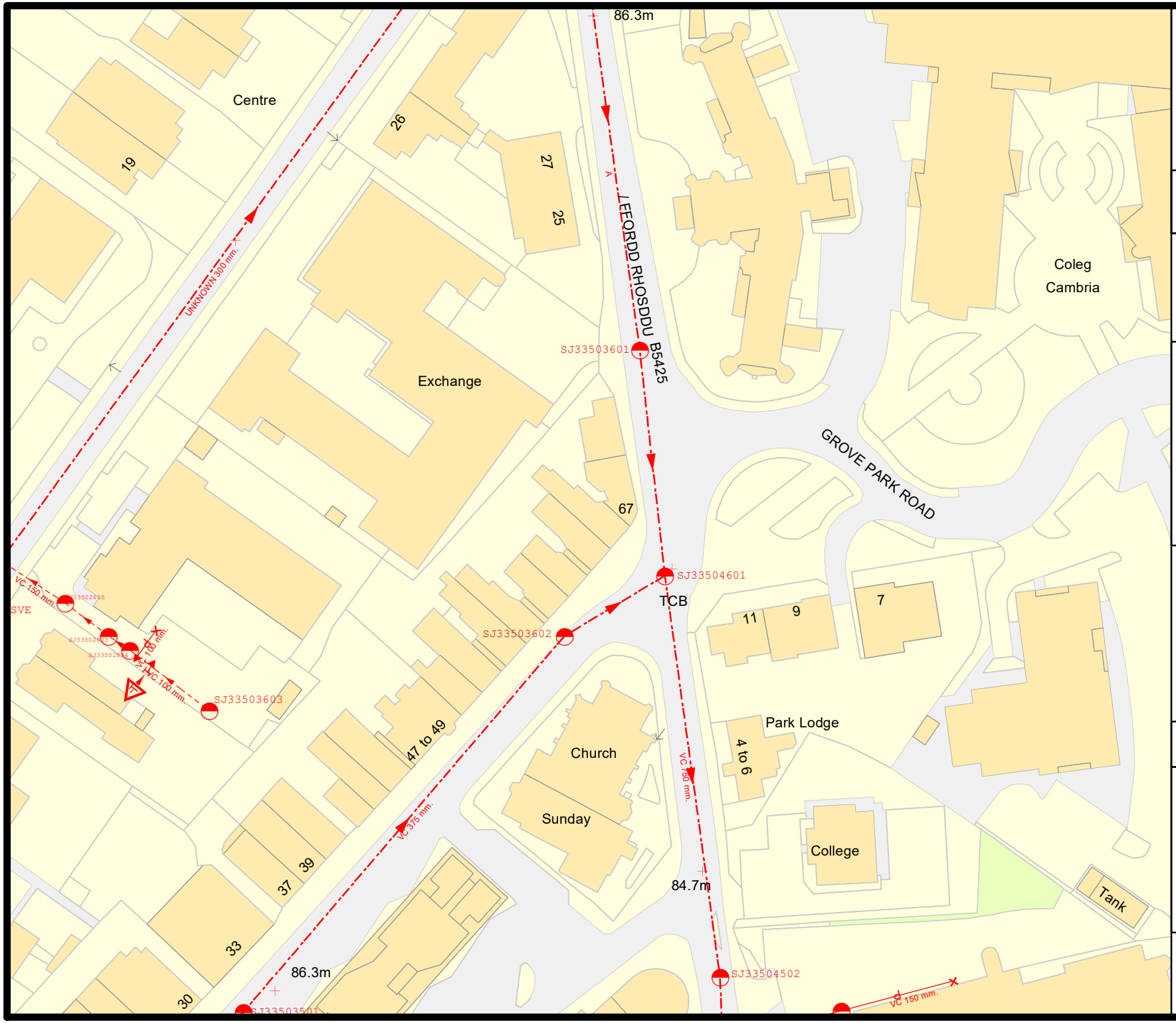
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AM	AW	NJ	1:400

PLOT NAME:	REVISION:
17155_Aerial_Plan	-

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BASEMAP: WORLD IMAGERY. SOURCES: ESRI, DIGITALGLOBE, GEOEYE, I-CUBED, EARTHSTAR GEOGRAPHICS, CNES/AIRBUS DS, USDA, USGS, AEX, GETMAPPING, AEROGRID, IGN, IGP, SWISSTOPO, GIS USER COMMUNITY

Appendix B DCWW Sewer Plan



Dŵr Cymru
Welsh Water

King Street, Wrexham, LL11 1HR

N
W E
S

LEGEND(Representative of most common features)

Waste network:

	Foul chamber		Outfall
	Surface water chamber	LH	Lamphole
	Combined chamber		Storm Overflow
CO	Combined sewer overflow		Rising main
SPC	Special purpose chamber		Gravity sewer
	Treatment works	P	Private sewer
	Pumping station	S 104 P	Private sewer subject to Sect. 104 adoption agreement
		T	Private Sewer Transfer
		L	Lateral Drain
			Inspection Chamber

NB: Sewer symbol colour indicates the type.

RED - Combined
GREEN - Surface Water
BROWN - Foul
Purple - Former S24 sewers (for indicative purposes only)

Notes:

Whilst every reasonable effort has been taken to correctly record the pipe material of DCWW assets, there is a possibility that in some cases pipe material (other than Asbestos Cement or Pitch Fibre) may be found to be asbestos cement (AC) or Pitch Fibre (PF) . It is therefore advisable that the possible presence of AC or PF pipes be anticipated and considered as part of any risk assessment prior to excavation

Dŵr Cymru Cyfyngedig ('the Company') gives this information as to the position of its underground apparatus by way of general guidance only and on the strict understanding that it is based on the best information available and no warranty as to its correctness is relied upon in the event of excavations or other works made in the vicinity of the company's apparatus. The onus of locating apparatus before carrying out any excavations rests entirely on you. The information which is supplied by the Company, is done so in accordance with statutory requirements of sections 198 and 199 of the Water Industry Act 1991 which is based upon the best information available and, in particular, but without prejudice to the generality of the foregoing, it should be noted that the records that are available to the Company may not disclose the existence of a water main, service pipe, sewer, lateral drain or disposal main and any associated apparatus laid before 1 September 1989, or, if they do, the particulars thereof including their position underground may not be accurate. It must be understood that the furnishing of this information is entirely without prejudice to the provision of the New Roads and Street Works Act 1991 and the Company's right to be compensated for any damage to its apparatus.

Service pipes are not generally shown but their presence should be anticipated.

EXACT LOCATIONS OF ALL APPARATUS TO BE DETERMINED ON SITE.

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Map Ref:	333385,350667
Map scale:	1:1000
Printed by:	Jessica Formosa
Printed on:	15 Oct 2025

Appendix C Existing & Proposed Development Plans

N

Level

Room-03

Level

Kitchen

up

W/C

Room-01

Room-02

up

up 50

Rhosddu Road

Ground floor plan 1:50

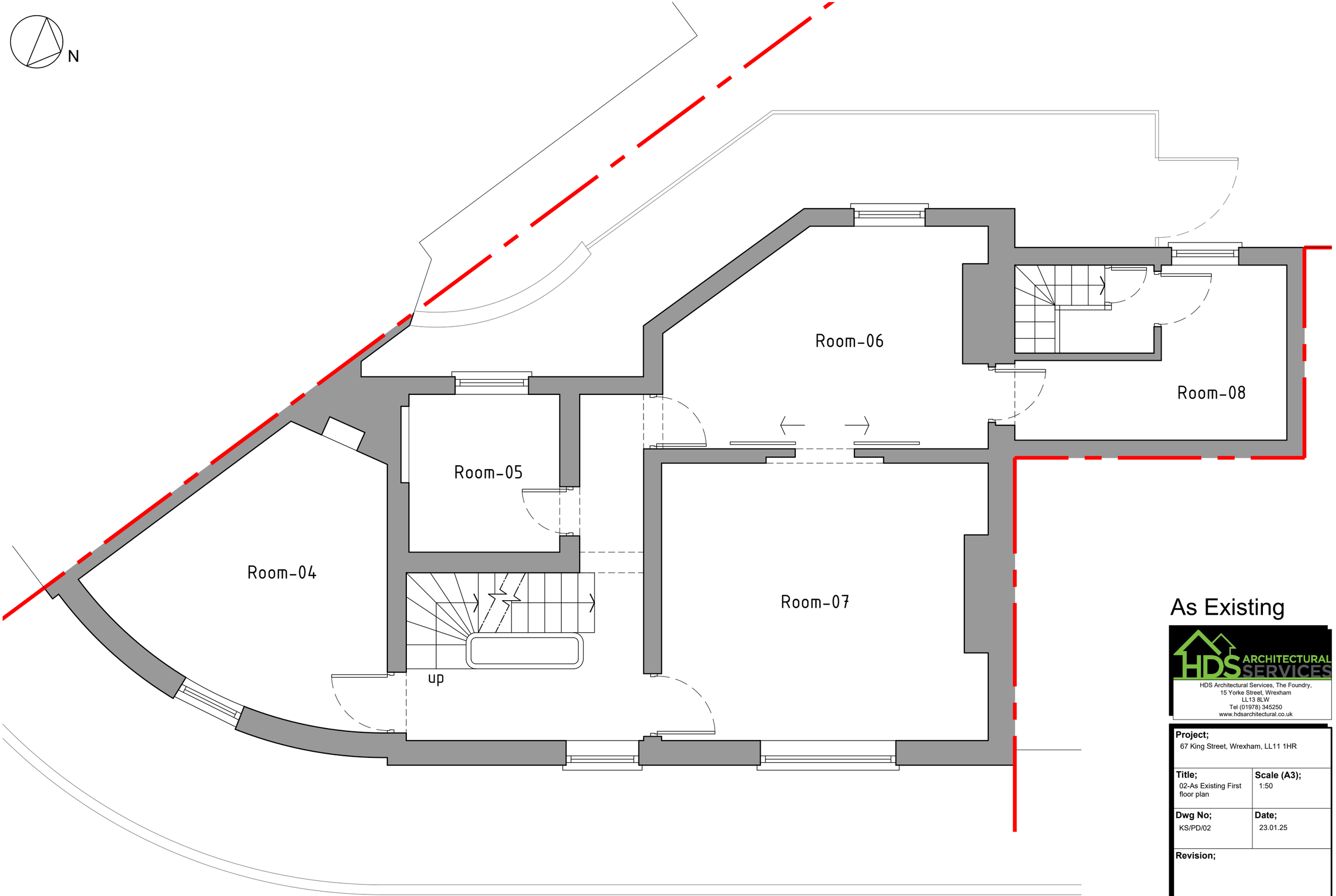
As Existing

HDS ARCHITECTURAL SERVICES
HDS Architectural Services, The Foundry,
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Tel (01978) 345250
www.hdsarchitectural.co.uk

Project;
67 King Street, Wrexham, LL11 1HR

Title;	**Scale (A3);**
01-As Existing Ground floor plan	1:50
Dwg No;	**Date;**
KS/PD/01	23.01.25

Revision;



First floor plan 1:50

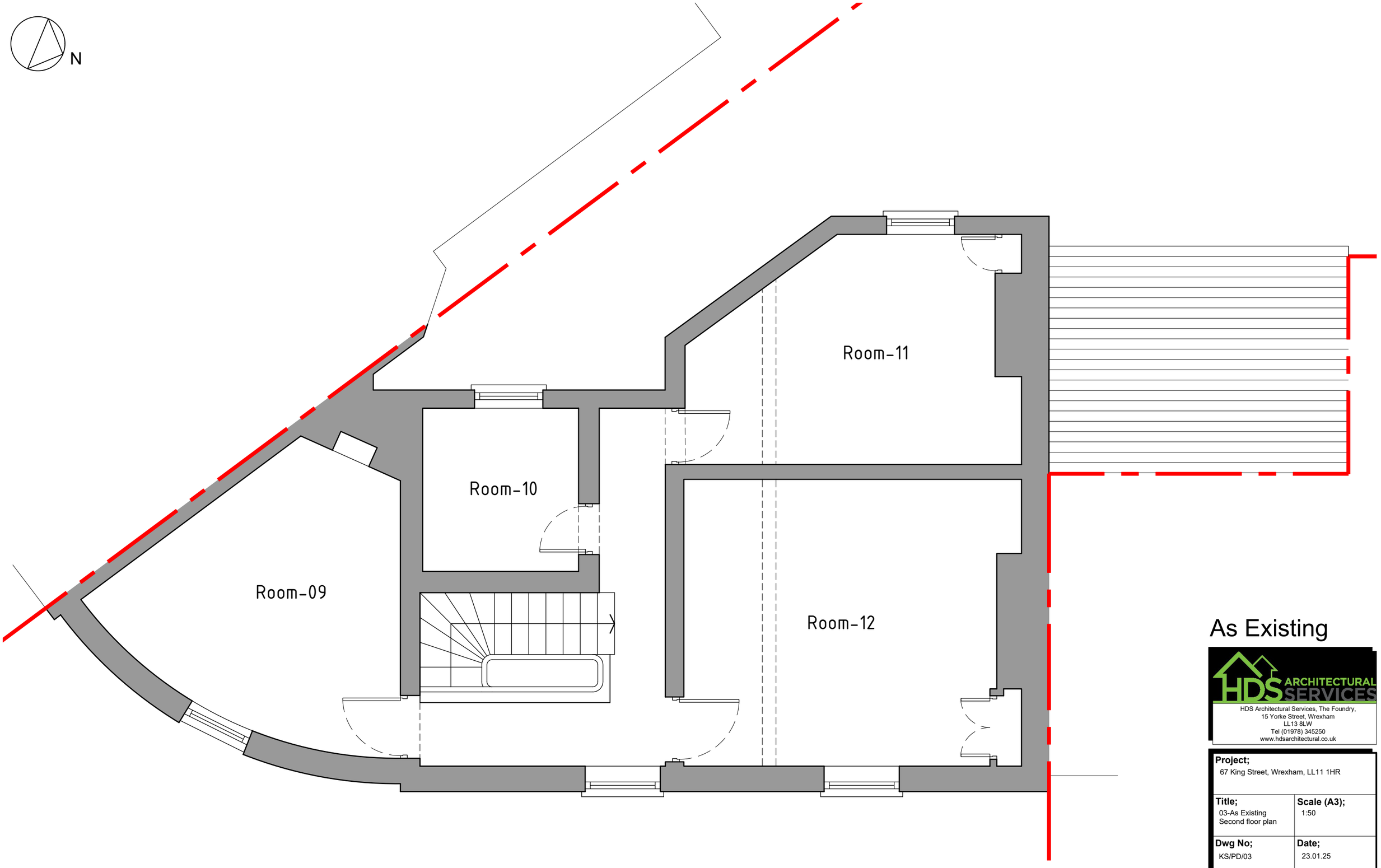
As Existing

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Title;	**Scale (A3);**
02-As Existing First floor plan	1:50
Dwg No;	**Date;**
KS/PD/02	23.01.25

Revision;



Second floor plan 1:50

As Existing

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Project;
67 King Street, Wrexham, LL11 1HR

Title;
03-As Existing
Second floor plan

Scale (A3);
1:50

Dwg No;
KS/PD/03

Date;
23.01.25

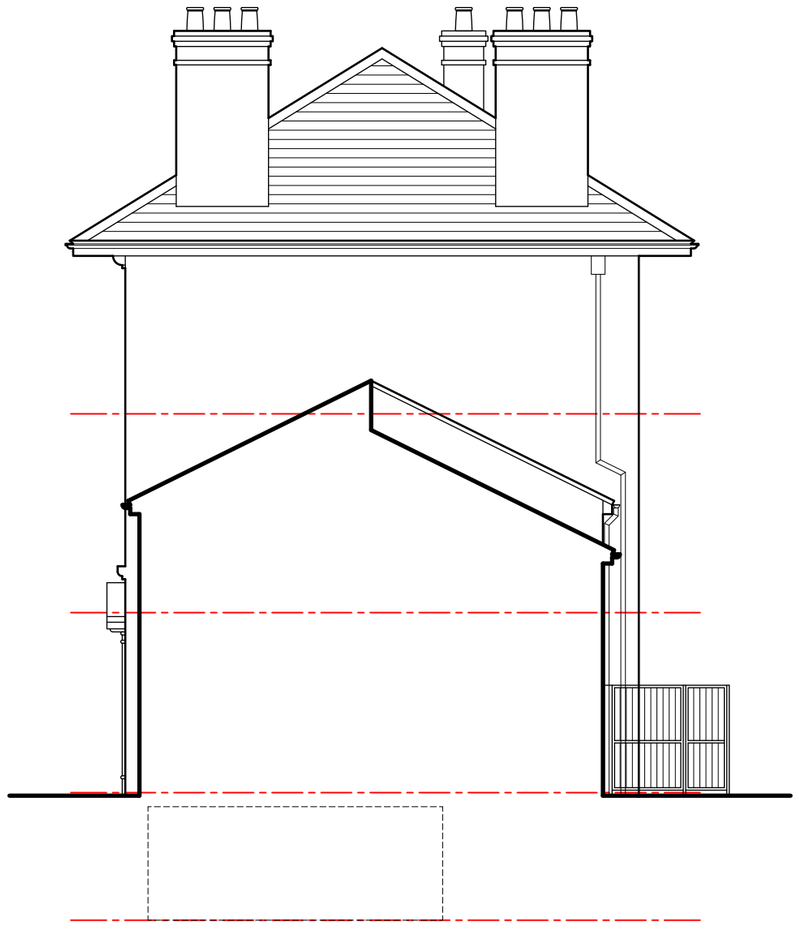
Revision;



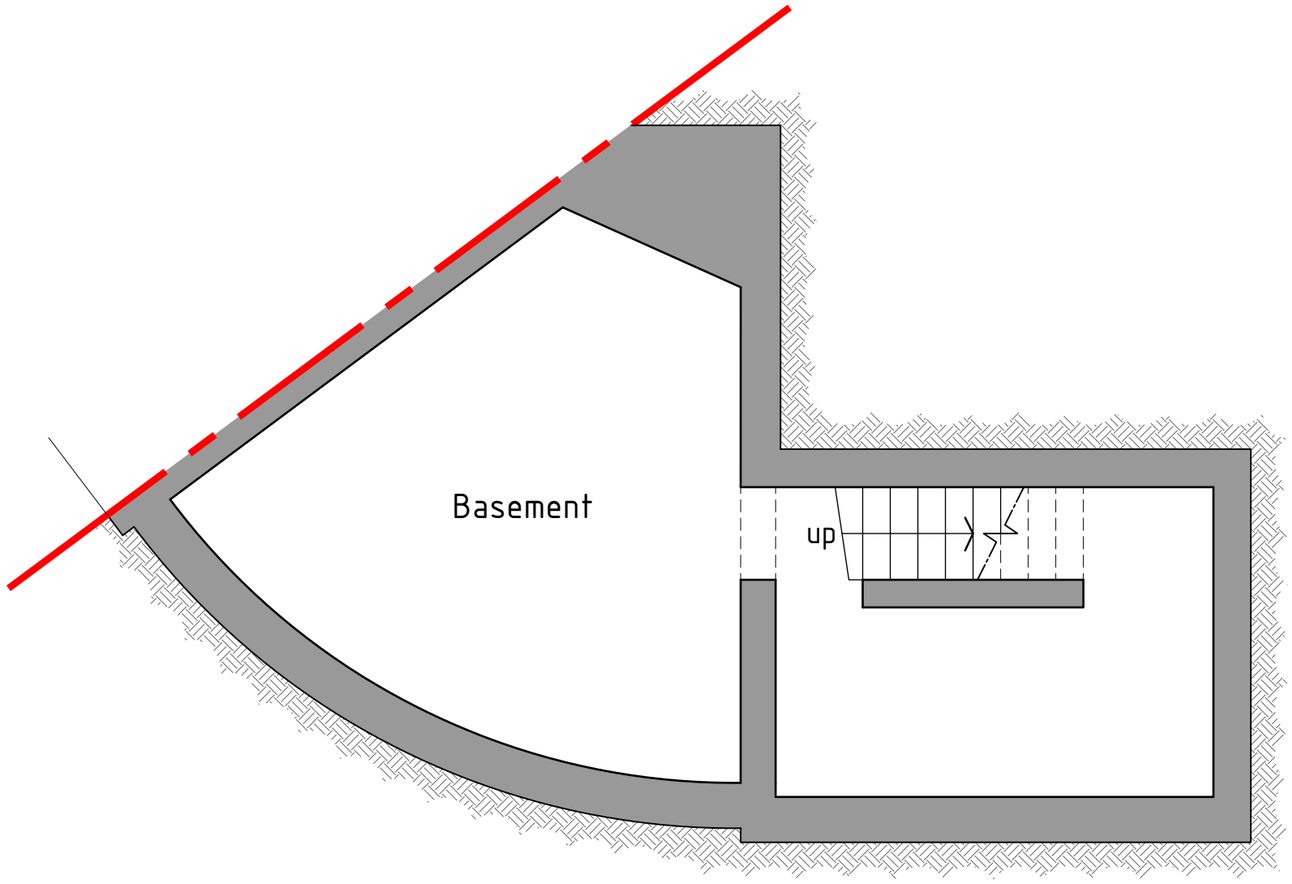
Front elevation 1:100

As Existing

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HDS Architectural Services, The Foundry, 15 Yorke Street, Wrexham LL13 8LW Tel (01978) 345250 www.hdsarchitectural.co.uk	**Title;** 04-As Existing Front Elevation	**Scale (A3);** 1:100	**Revision;**	



Side-01 Elevation 1:100



Basement 1:50

N

As Existing

HDS ARCHITECTURAL SERVICES	**Project;** 67 King Street, Wrexham, LL11 1HR		**Dwg No;** KS/PD/06 / **Date;** 24.01.25
HDS Architectural Services, The Foundry, 15 Yorke Street, Wrexham LL13 8LW Tel (01978) 345250 www.hdsarchitectural.co.uk	**Title;** 05-As Existing Side Elevation & Basement Plan	**Scale (A3);** 1:50/100	**Revision;**

N

Please note;

Cycle Storage Area to be covered and provide a minimum of 1 metre between each stand and 1.5m between each space for an adapted cycle.
Fixed ground anchor to be used to keep cycles secure

Bike storage area

4415.50

1691.50

Bin storage area

Acoustic wall lining as defined in sound report

Level

New stud partition

Bedroom-02
10.9m2

Bedroom-03
10.7m2

E/S

up

Doorway blocked up and made good

Level

Acoustic wall lining as defined in sound report

Doorway blocked up and made good

New opening

E/S

Doorway blocked up and made good

Bedroom-01
14.7m2

Kitchen &
Communal
space

19.5m2

up

Lobby

W-01-01 Secondary glazing to be installed

Ground floor plan 1:50

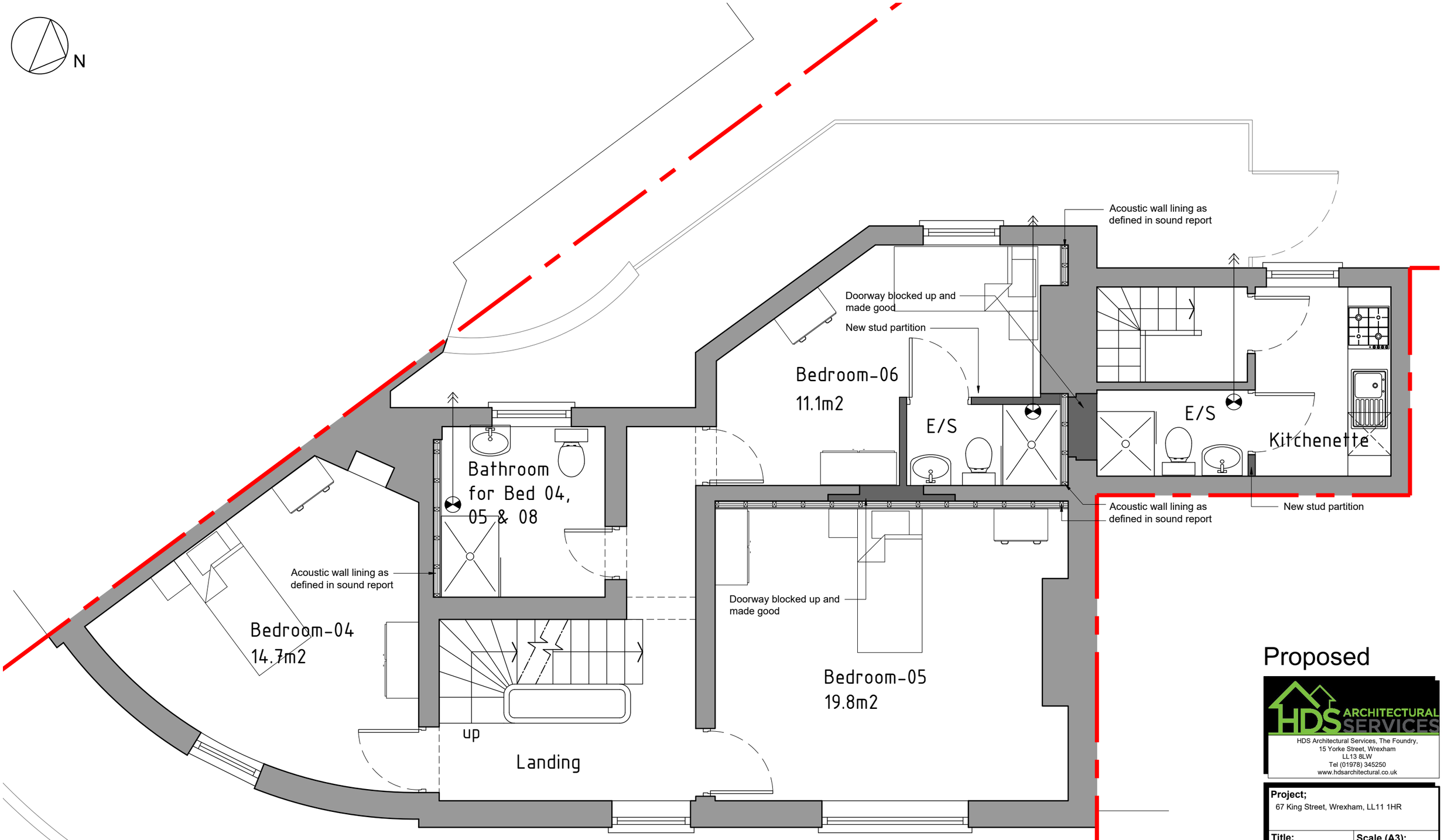
Proposed

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Project;
67 King Street, Wrexham, LL11 1HR

Title;	**Scale (A3);**
07-Proposed Ground floor plan	1:50
Dwg No;	**Date;**
KS/PD/07	27.01.25

Revision;
Rev A - Amend layout following meeting with conservation officer - 30-04-25
Rev B - Amendments requested by conservation officer - 07-05-25
Rev-C Noise report recommendations added 18.06.25
Rev D - Revise bin and bike stores - 08-07-25



First floor plan 1:50

Proposed

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Project;
67 King Street, Wrexham, LL11 1HR

Title;
08-Proposed First floor plan

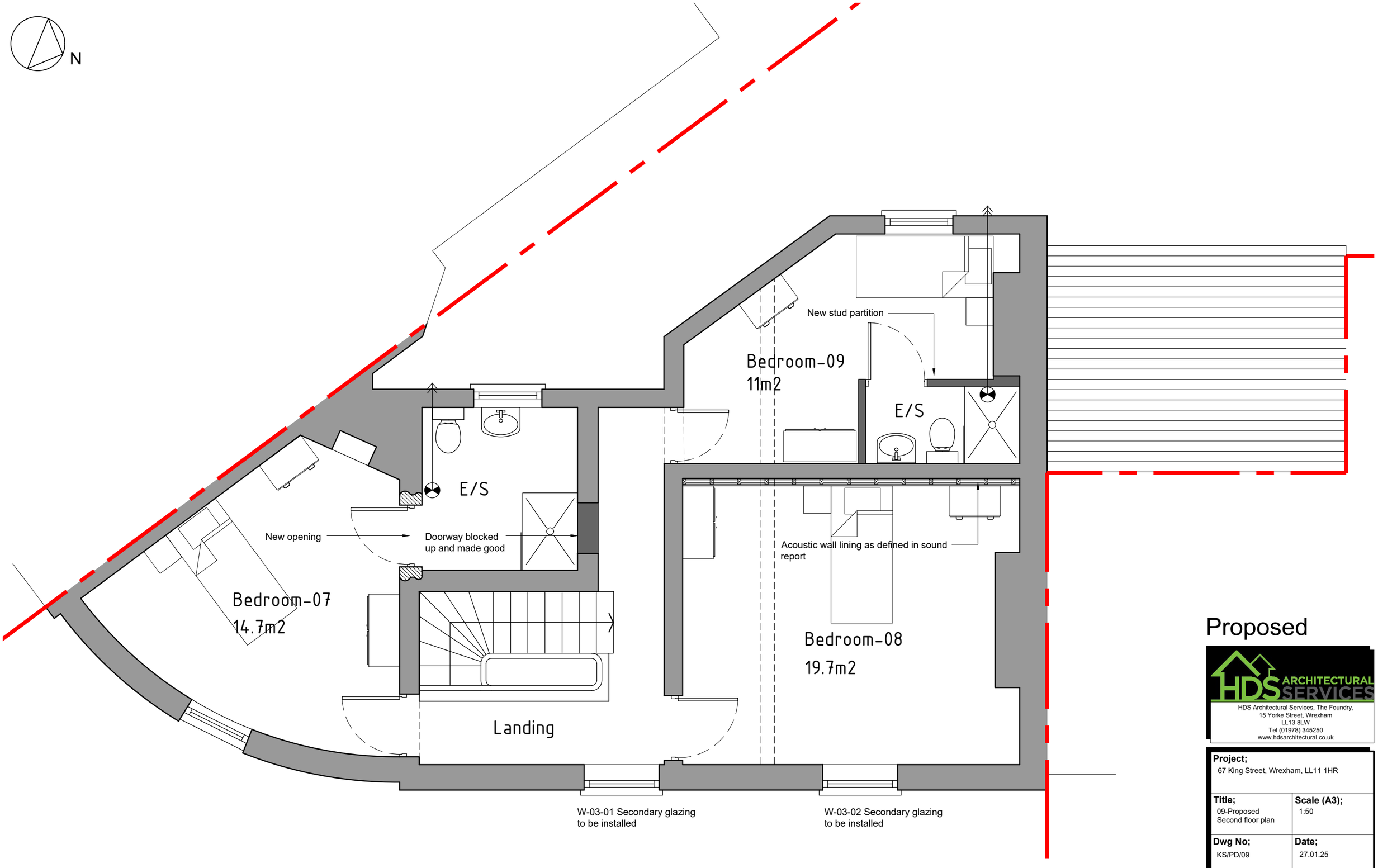
Scale (A3);
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Dwg No;
KS/PD/08

Date;
27.01.25

Revision;
Rev A - Amend layout following meeting with conservation officer - 30-04-25
Rev B - Amendments requested by conservation officer - 07-05-25
Rev-C Noise report recommendations added 18.06.25

N



Second floor plan 1:50

Proposed

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LL13 8LW
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Project;
67 King Street, Wrexham, LL11 1HR

Title;
09-Proposed
Second floor plan

Scale (A3);
1:50

Dwg No;
KS/PD/09

Date;
27.01.25

Revision;
Rev A - Amend layout following meeting with conservation officer - 30-04-25
Rev B - Amendments requested by conservation officer - 07-05-25
Rev-C Noise report recommendations added 18.06.25



Proposed

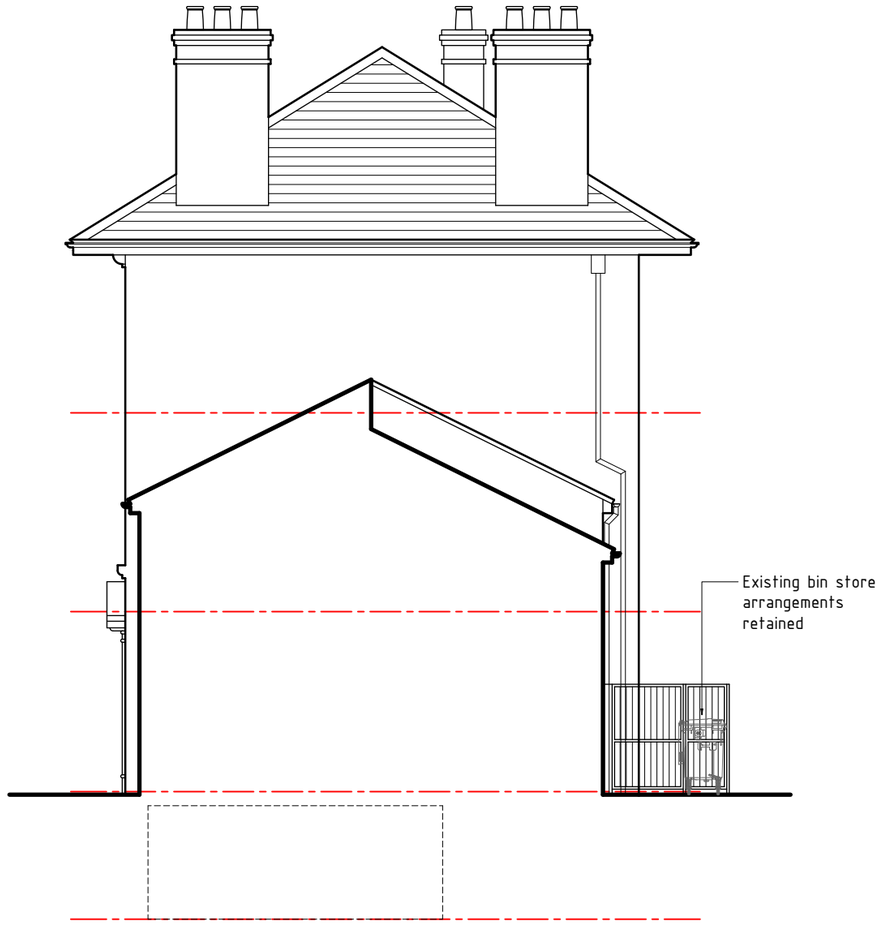
Front elevation 1:100

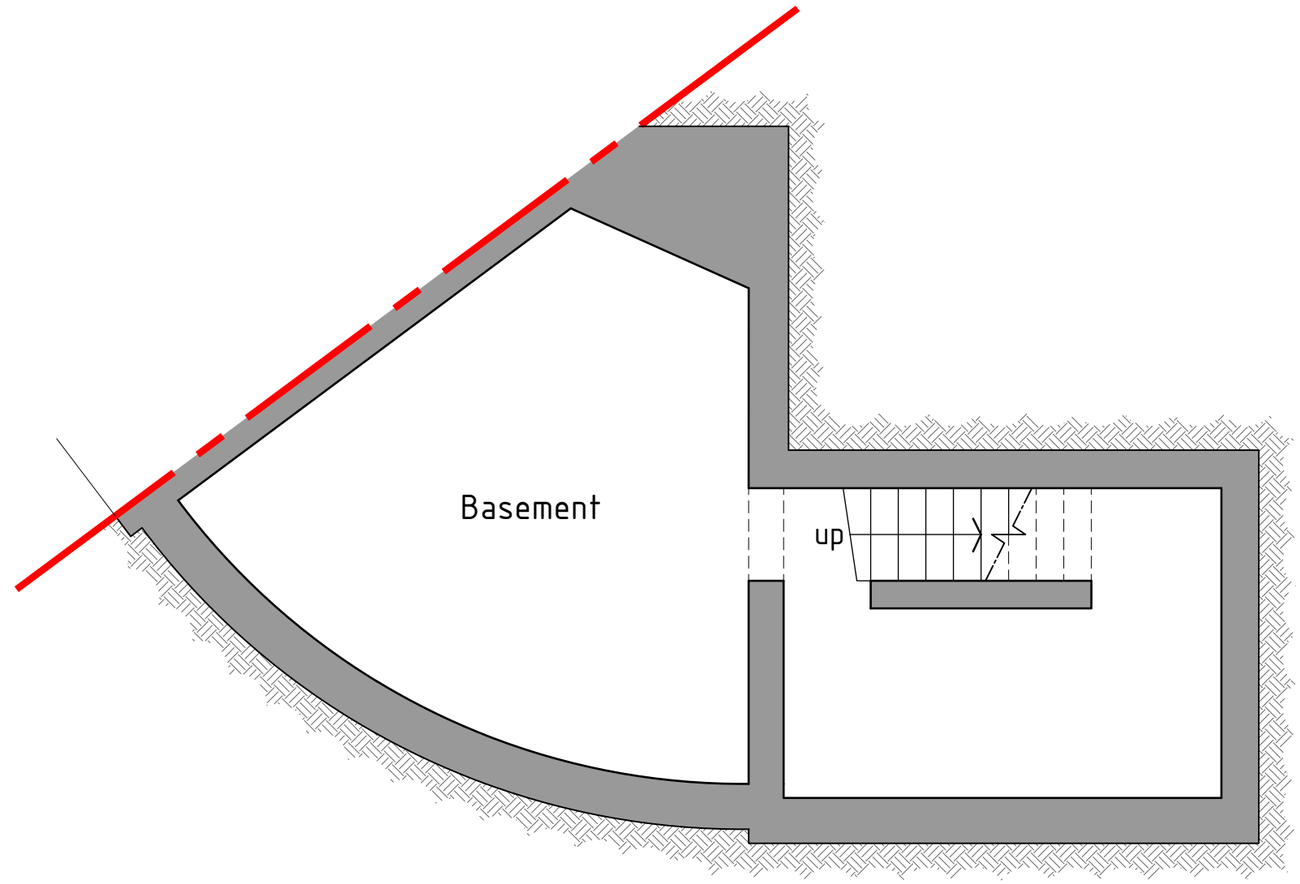
HDS ARCHITECTURAL SERVICES
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Project;	Dwg No;	Date;
67 King Street, Wrexham, LL11 1HR	KS/PD/10	27.01.25

Title;	Scale (A3);	Revision;
10-Proposed Front Elevation	1:100	Rev-A window and repair information added 20.06.25

N





Side-01 Elevation 1:100

Basement 1:50

Proposed

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	Title; 12-Proposed Side Elevation & Basement Plan	**Scale (A3);** 1:50/100	**Revision;**