

STRUCTURAL INSPECTION REPORT

AT

REDUNDANT OUTBUILDINGS

BROAD OAK FARM

LLYNDIR LANE

ROSSETT

LL12 0AU

Huxtable Hodgson

Consulting Civil and Structural Engineers

100 Brook Street

Chester CH1 3DU

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6538/DHU/CHe

10 October 2017

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Letter to Mr S Trowbridge dated 3rd October 2017
Sketches SK08-SK12

1. Introduction

- 1.1 We confirm having visited the property on 3 July 2017 to review its structural condition with a view to its conversion into domestic accommodation.
- 1.2 This report is intended for the benefit of the Planning Department to gauge whether the condition of the buildings have significantly altered since the previous structural 'planning' report undertaken by Adams Consulting Engineers dated 10 October 2008.
- 1.3 The ACE report related to all the various buildings A-K and Farmhouse as referenced on their enclosed sketch (SK01).
- 1.4 The current proposed scheme prepared by Cassidy & Ashton, Architects, intends only to convert buildings A, B and K which C & A refer to as buildings B, A and D respectively.

Barn B is intended as Units 1-2

Barn A is intended as Units 3-8

Barn D is intended as Units 9-13

Refer to their enclosed sketches (SK02 and SK03)

- 1.5 Our inspection consisted of a visual appraisal of Barns B, A and D with respect to gauging the condition of the external walls and their likely need for repair.

Our internal inspection was limited to viewing part of Barn A at ground floor and all of Barn D.

- 1.6 We understand that Broad Oak Farm was a pig farm until 2000/2001.

We are unaware of the age of the buildings.

We would estimate that the brick built Barns A and B are at least 100 years old, Barn D is much more recent consisting of a precast concrete portal framed structure clad in brick external walls.

- 1.7 The ACE report concluded that (their) buildings A, B and K were considered to be structurally sound and suitable for conversion.

2. Survey

Barn A

Refer to our sketch SK04 noting our following main observations.

East Elevation

- 2.1 Rendered wall above lean-to roof.
- 2.2 Timber pattress 'plates' and tie rods.
- 2.3 Undulating roof.
- 2.4 Wall leans out noticeably.
- 2.5 Wall leans out slightly.

South Elevation

- 2.6 Ivy covered wall.
- 2.7 Stonework section.
- 2.8 Noticeable cracks.
- 2.9 Rebuilt verge brickwork.
- 2.10 Weathered brickwork below stonework at ground level.
- 2.11 Blocked in openings along length of steel framed building.
- 2.12 White painted wall above blocked in openings.
- 2.13 Undulating Roof.
- 2.14 Severely undulating roof and slipped/missing slates.
- 2.15 First floor gable set back from single storey section below.
- 2.16 More recent single storey structure.
- 2.17 Stonework section at high level appears in poor condition.

North Elevation

- 2.18 Rebuilt brickwork above first floor window.
- 2.19 Wall out of plumb.

Widespread eroded mortar joints.
- 2.20 Wall takes an undulating line on plan together with some out of plumb most noticeable below eaves level.

- 2.21 Damp and weathered brickwork behind rwp.
- 2.22 Undulating roof.
- 2.23 Severely undulating roof.

West Elevation

- 2.24 Ivy covered wall.
- 2.25 Timber pattress plates and tie rods.
- 2.26 Older style brickwork.
- 2.27 Rebuilt section below window.
- 2.28 Bricked in window.
- 2.29 Undulating roof.
- 2.30 Straight joint/cracked and weathered brickwork.
- 2.31 Wall takes an undulating line on plan, cannot gauge behind ivy.

Barn B

Refer to our sketches SK05-SK06 noting our following main observations.

West Elevation

- 2.32 Rendered wall above lean-to roof.
- 2.33 Bricked in openings.
- 2.34 Long timber pattress plate and 2No. rods.
- 2.35 Stepped full height vertical crack.
- 2.36 Rebuilt brickwork.
- 2.37 High level stepped vertical crack.
- 2.38 Diagonal crack.
- 2.39 Low level weathered brickwork.
- 2.40 No significant wall out of plumb noted.
Wall appears in good condition.
- 2.41 No significant undulating roof line noted.

South Elevation

2.42 No significant out of plumb noted.

Wall appears in good condition.

2.43 Wall section not viewed.

East Elevation

2.44 Adjoining steel framed structure effectively conceals majority of wall, lower approximately 2 metre height only partly viewed.

No significant defects noted.

North Elevation

2.45 No significant defects noted.

Barn D

Refer to our sketch 6538/SK07 noting our following main observations.

2.46 Precast concrete portal framed building with brick external cladding walls and a mix of low level and full height brick internal walls.

Asbestos cement roof covering supported on concrete purlins.

2.47 No significant defects noted.

3. Discussion and Conclusions

Barn A

- 3.1 Comparing the past ACE external wall observations to our current observations we would say that there has been no significant changes in the condition of the walls which, whilst exhibiting widespread distortions in particular to the West and North elevations have remained stable.
- 3.2 With regard to the proposed conversion we would as normal envisage that the roof and floors will be replaced.
- 3.3 Subject to Planning considerations we would envisage that the most noticeable wall distortions would be corrected/rebuilt e.g. the upper sections of the walls which are leaning out due to roof spread.
- 3.4 In anticipation that widespread rebuilding will not be acceptable it will be necessary to give careful consideration as to how the new internal walls can be used to buttress/restrain the external walls and also allow the current unsightly pattress plates etc. to be removed.
- 3.5 As normal in due course the existing foundations will need to be inspected.

Barn B

- 3.6 The external walls, where visible, appear in good condition and we do not envisage the need for any major rebuilding.

Local repairs will be necessary e.g. to replace isolated weathered bricks or undertake crack stitch repairs and it will likely be a matter of discretion/agreement whether non matching sections of walling are replaced.
- 3.7 The East elevation is largely hidden by the adjacent steel framed building, however from what we could see we did not note any significant defects.
- 3.8 The roof line is very good, indicative of a sturdy roof.
- 3.9 Notwithstanding, we understand that a new second floor will present some headroom issues requiring at minimum modifications to the main roof trusses structure and this will need to be assessed at Building Regulations Stage as normal.
- 3.10 As normal we would expect that the first floor will be replaced, taking support from the new internal wall arrangement.
- 3.11 The existing foundations will need to be inspected in due course.

Barn D

- 3.12 It would appear that the precast concrete structure and external cladding walls are in good condition and suitable for re-use.
- 3.13 It has been suggested that the 'At cost' portal frames may be suitable to carry additional weight from the proposed replacement slated roof; this will need to be assessed in due course.

In the past we have overcome any doubts as to the strength of similar frames by ensuring that additional support is afforded by for example building cross walls up to the underside of the portal rafters.

- 3.14 The existing foundations will need to be inspected in due course, in particular the portal frame foundations should they be subject to increased loads.

4. Limitations

This report is limited to the items mentioned. We have not inspected woodwork or other parts of the structure which were covered, unexposed or inaccessible and we are therefore unable to report that any such part is free from defect.

Belgrave Developments
 1000 Rotorua Road
 Rotorua 9002
 T 06 919 0002
 F 06 919 0003
 E info@belgrave.co.nz
 W www.belgrave.co.nz

Adams Consulting Engineers

2000 Report

Site Layout

6538/Sk01

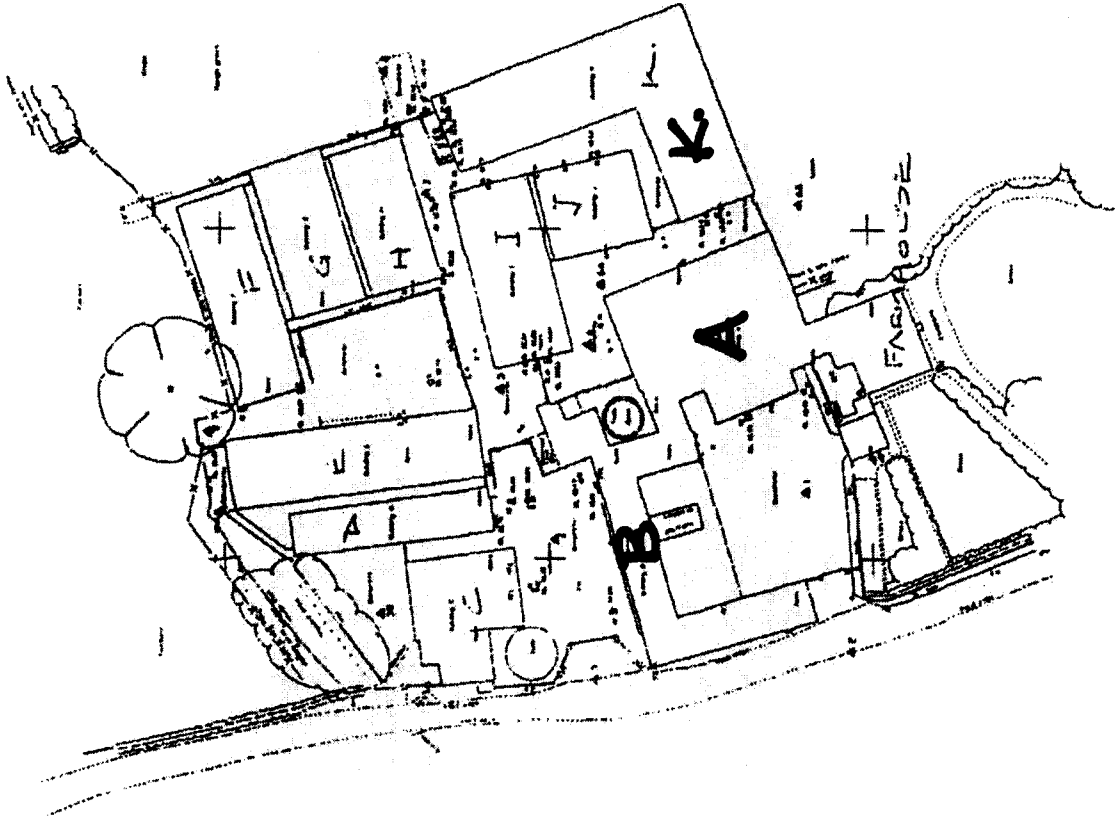
BELGRAVE DEVELOPMENTS

A2

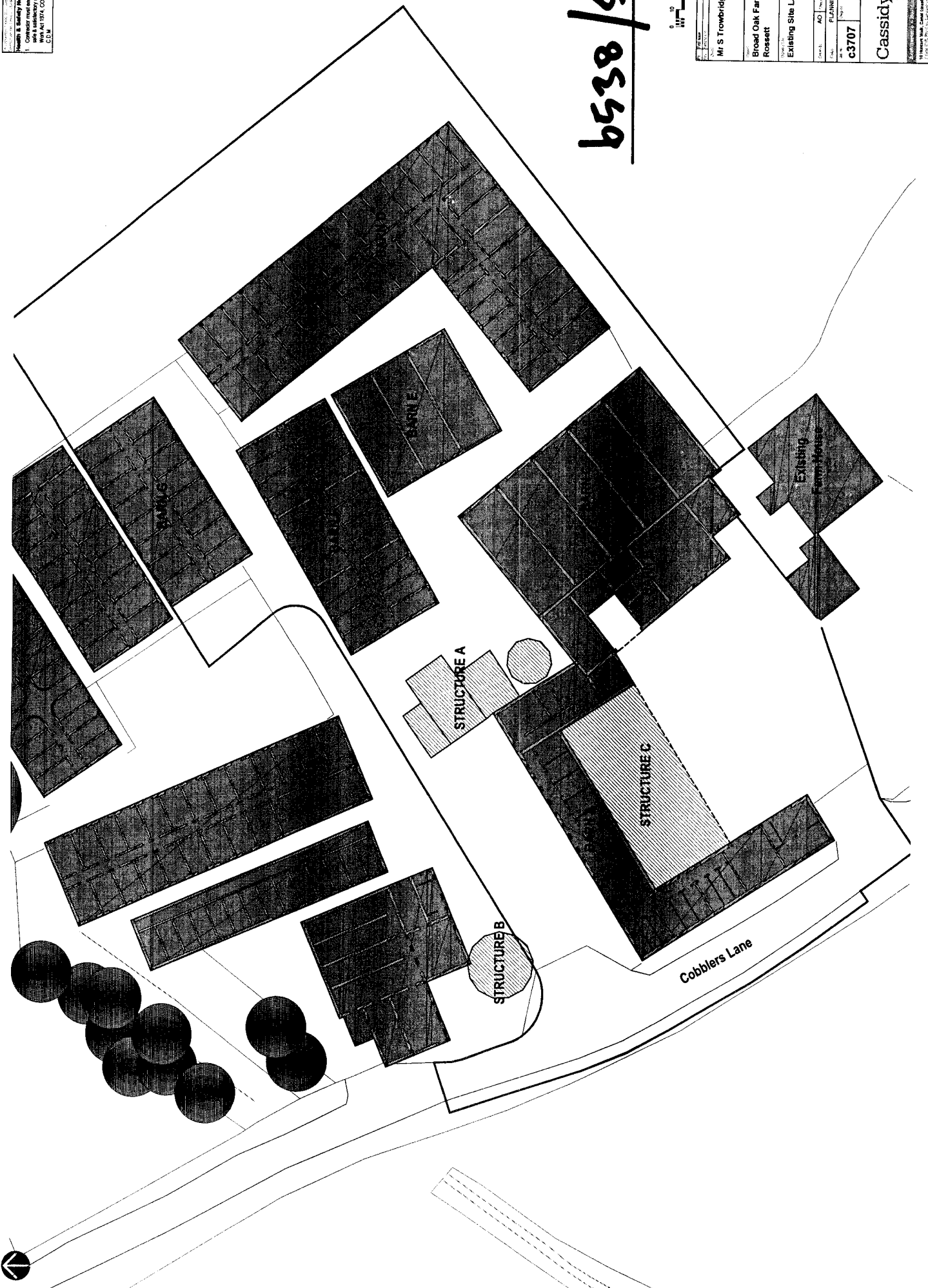
PLANNING

TOPOGRAFICAL SURVEY

Project No.	0002
Client	BELGRAVE DEVELOPMENTS
Scale	1:500
Date	01/09/02



Health & Safety Notes
 1. Contractor must ensure that all work on site is carried out in a safe & satisfactory manner in accordance with Health & Safety Act 1974, CDM Regulations 2002 & requirements of CDM.



b538/sk02



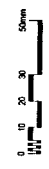
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Client	Broad Oak Farm Rossett
Project Title	Existing Site Layout
Drawn By	AO
Check By	XS
Date	30.05.2017
Scale	1:200
Sheet No	c3707
Sheet Count	L02
Project Code	P1
Client Logo	CIA
Company Name	Cassidy+Ashton
Company Address	19 Ffynnon Walk, Llandudno, Gwynedd, LL30 1ED
Company Phone	01248 400 400
Company Email	info@cassidy-ashton.co.uk
Company Website	www.cassidy-ashton.co.uk

1:1000

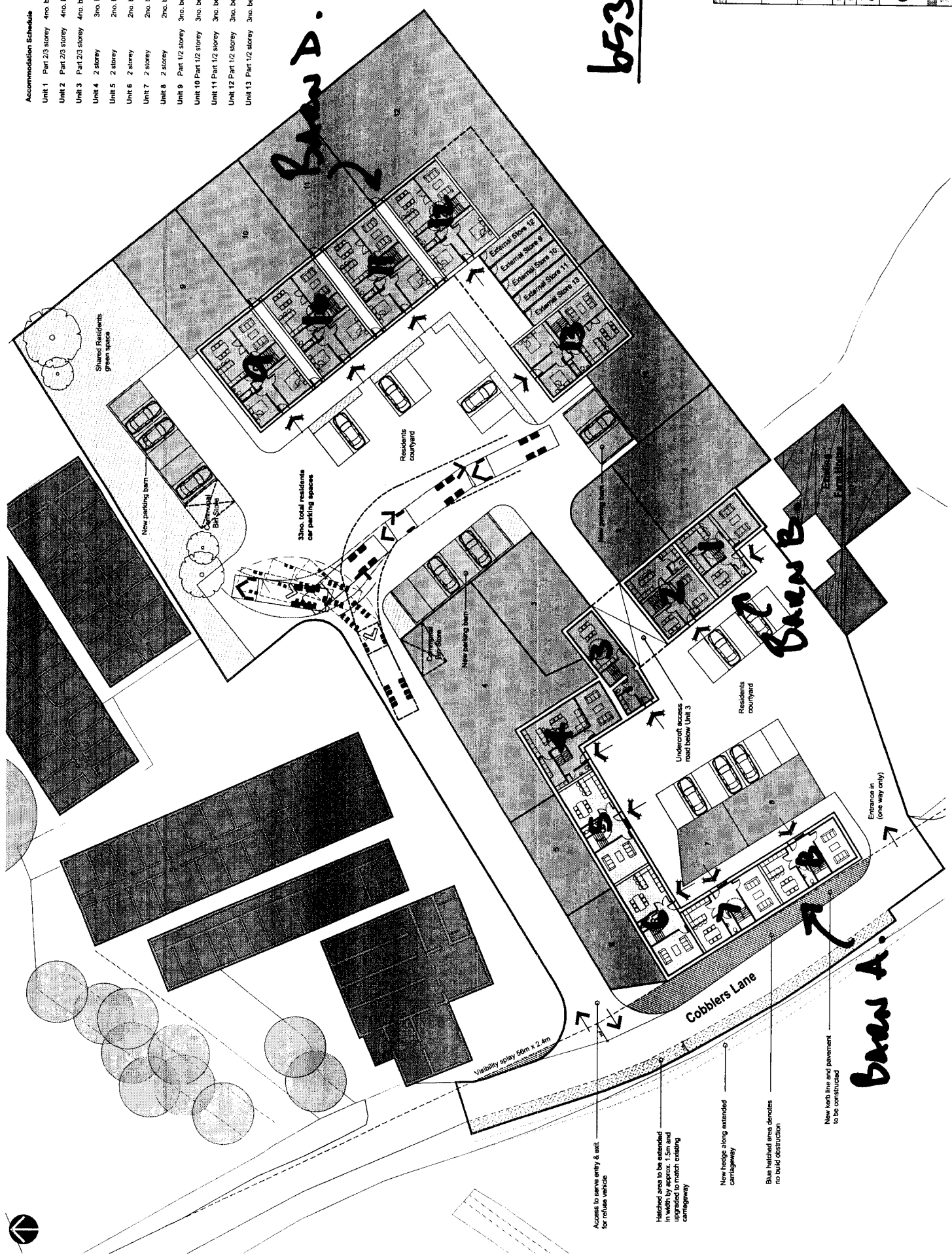
Accommodation Schedule

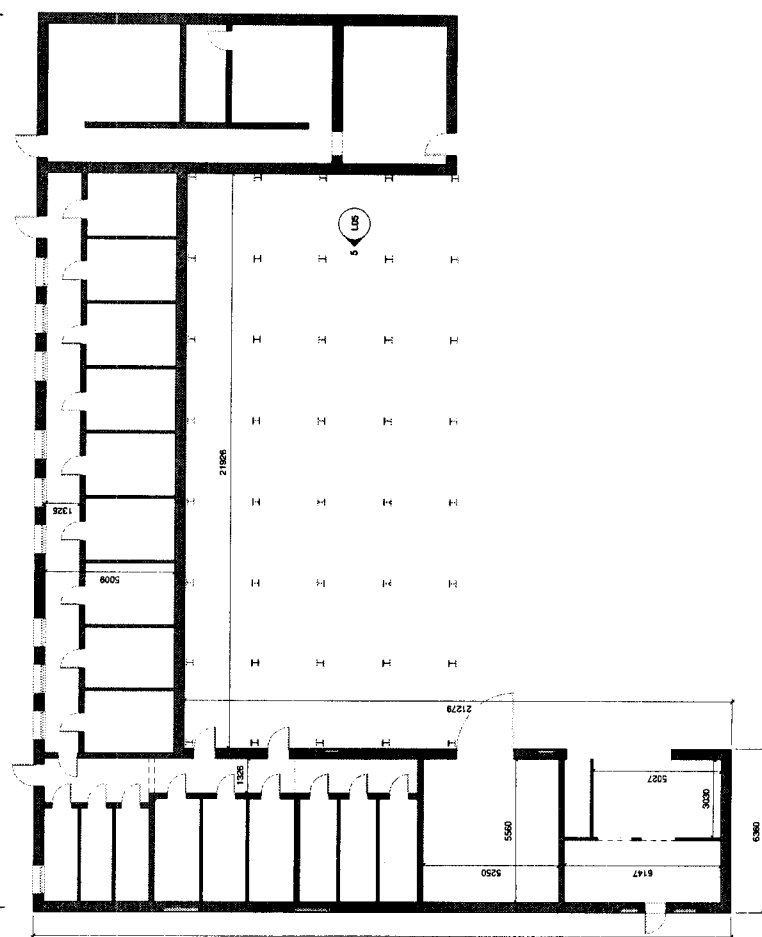
Unit 1	Part 2/3 storey	4no. bed	138sqm	(1,485sqft)
Unit 2	Part 2/3 storey	4no. bed	147sqm	(1,582sqft)
Unit 3	Part 2/3 storey	4no. bed	147sqm	(1,582sqft)
Unit 4	2 storey	3no. bed	120sqm	(1,292sqft)
Unit 5	2 storey	2no. bed	105sqm	(1,130sqft)
Unit 6	2 storey	2no. bed	102sqm	(1,098sqft)
Unit 7	2 storey	2no. bed	92sqm	(990sqft)
Unit 8	2 storey	2no. bed	92sqm	(990sqft)
Unit 9	Part 1/2 storey	3no. bed	107sqm	(1,152sqft)
Unit 10	Part 1/2 storey	3no. bed	107sqm	(1,152sqft)
Unit 11	Part 1/2 storey	3no. bed	107sqm	(1,152sqft)
Unit 12	Part 1/2 storey	3no. bed	107sqm	(1,152sqft)
Unit 13	Part 1/2 storey	3no. bed	107sqm	(1,152sqft)

b538/5603

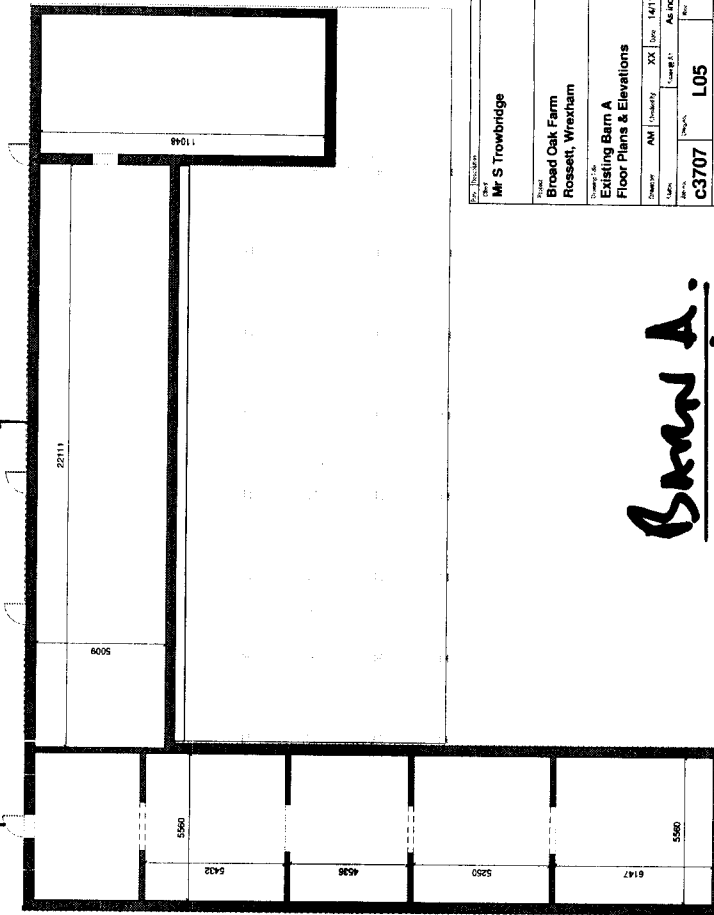


Mr S Trowbridge		AC	XX	30.06.2017	1,300
Broad Oak Farm Rosssett		PLANNING			
Proposed Site Layout		c3707	L04	P1	C+A
Cassidy+Ashton					





2 01 First Floor FFL 4-100



2 01 First Floor FFL 4-100

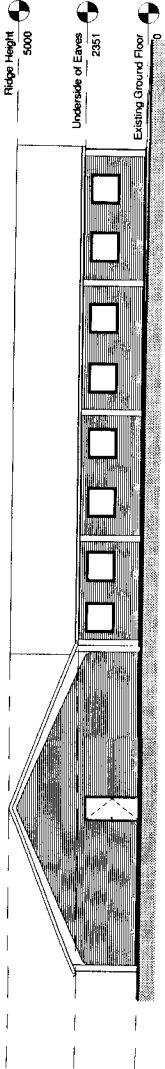
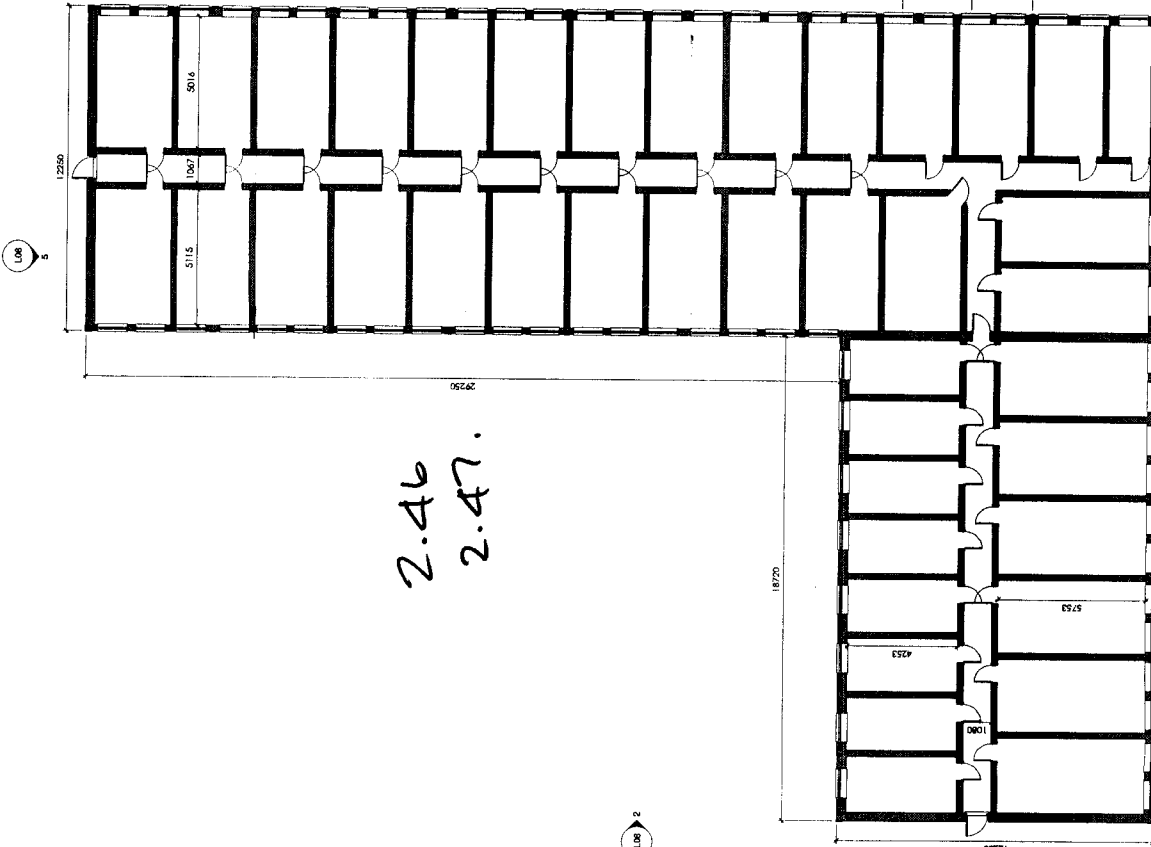
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TO THE
LAW.

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6538/604

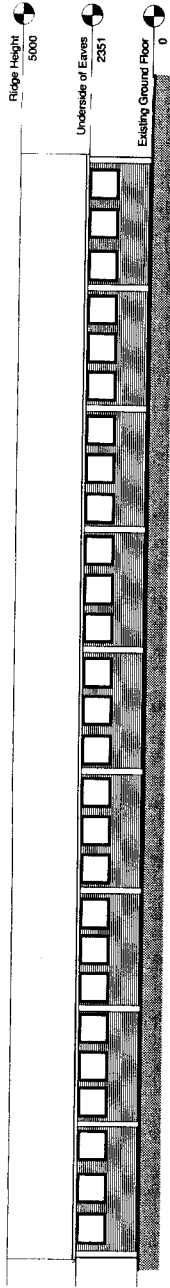
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Mr S Trowbridge Broad Oak Farm Rossett, Wrexham		14/11/2016 As indicated	
Existing Barn A Floor Plans & Elevations		14/11/2016 As indicated	
Drawing No c3707	Project No L05	Date 14/11/2016	
Cassidy+Ashton Architects		14/11/2016 As indicated	

[illegible]

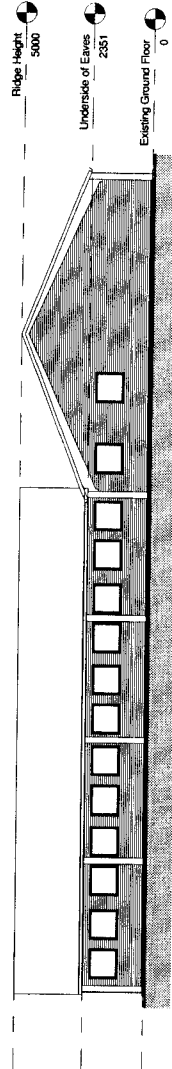
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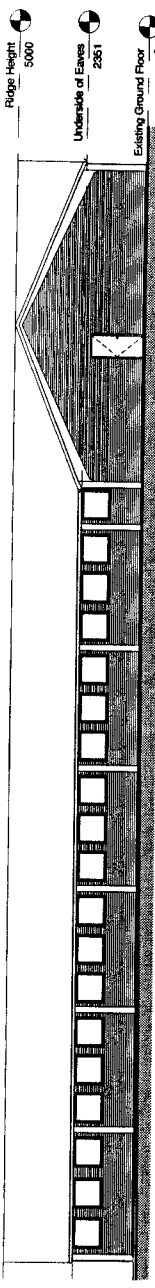
5 North Elevation
1 : 100



4 East Elevation
1 : 100



3 South Elevation
1 : 100



2 West Elevation
1 : 100

1 Existing Ground Floor
1 : 100

Barn D.
6538/Sk07

City	San Jose	State	CA
Client	Mr S Trowbridge		
Project	Broad Oak Farm, Rossett Wretham		
Drawing No.	Existing Barn D, Floor Plans & Elevations		
Drawn	AM	Checked	Time
Date	16/11/2015	Scale	1 : 100
Sheet	C3707	Project	L08
Author	Cassidy + Ashton		

BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN A



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN A



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN A



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN A



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN A



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN B



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN B



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN B



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN D



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN D



BROAD OAK FARM
SURVEY PHOTOS
3 JULY 2017

BARN D



7. Addendum Discussion and Conclusions

- 7.1 It is understood that the Planning Officer wishes for additional comment regarding the following:
- (a) that the condition of the buildings essentially remain as reported in the Adams Consulting Engineers report dated October 2008
 - (b) that the current conversion proposals prepared by Cassidy and Ashton can be implemented without prejudicing the integrity of the buildings.
- 7.2 With regard to 7.1 (a) we enclose our letter to Mr Trowbridge dated 3 October 2017 confirming in our view that the structural condition of the buildings essentially remain as reported in the ACE report dated October 2008.
- 7.3 With regard to 7.1 (b) we enclose copies of the C & A conversion proposals for Barns A, B and D. (Sketches SK08-SK12).

The proposed layouts are essentially cellular in form with many internal sub-division walls within units together with party walls between units.

The party walls in particular will act as sturdy buttressing walls across the buildings and will substantially enhance the overall future stability of the buildings.

The upper floors will be strapped/connected to the external walls to provide improved lateral restraint to the walls.

The roof will be detailed to ensure that the potential for ongoing roof spread is minimised.

Hence, it is clear that the overall stability of the buildings will be considerably enhanced by virtue of the proposed conversion works.

6538st/DHU/CHe

3 October 2017



Huxtable Hodgson

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100 Brook Street Chester CH1 3DU
tel: 01244 409490 fax: 01244 409022

Mr S Trowbridge
84 Cherry Lane
Lymm
Cheshire
WA13 0PD

Sent via e-mail to: strowbridge@hotmail.co.uk

Dear Mr Trowbridge

Broad Oak Farm, Rossett

Further to our recent discussion.

I understand that Planners are asking for confirmation that, in my view, the structural condition of the buildings essentially remain as reported in the Adams Consulting Engineers Report dated October 2008.

Accordingly, I would respond as follows:

Barn A

My point 3.1 state that 'there has been no significant change in the condition' compared with the Adams Report.

Hence, I believe that Barn A remains in a similar structural condition to its condition in October 2008.

Barn B

Adam's Report, point 3.1.4 states that the barn is considered to be structurally competent.

My report, point 3.6, states that it appears in good condition.

Hence I believe that Barn B remains in a similar structural condition to its condition in October 2008.

Barn D

Adam's Report, point 3.9.3, states that the existing frames and brick infill are structurally sound.

My report, point 3.12, states the same.

Hence, I believe that Barn D remains in a similar structural condition to its condition in October 2008.

Cont.../

(2)

I hope that this addendum letter clarifies my view that the condition of the buildings have not substantially altered since October 2008.

Yours sincerely

A handwritten signature in black ink, consisting of a series of loops and a vertical line, positioned below the text 'Yours sincerely'.

Huxtable Hodgson

e-mail: info@huxtablehodgson.co.uk

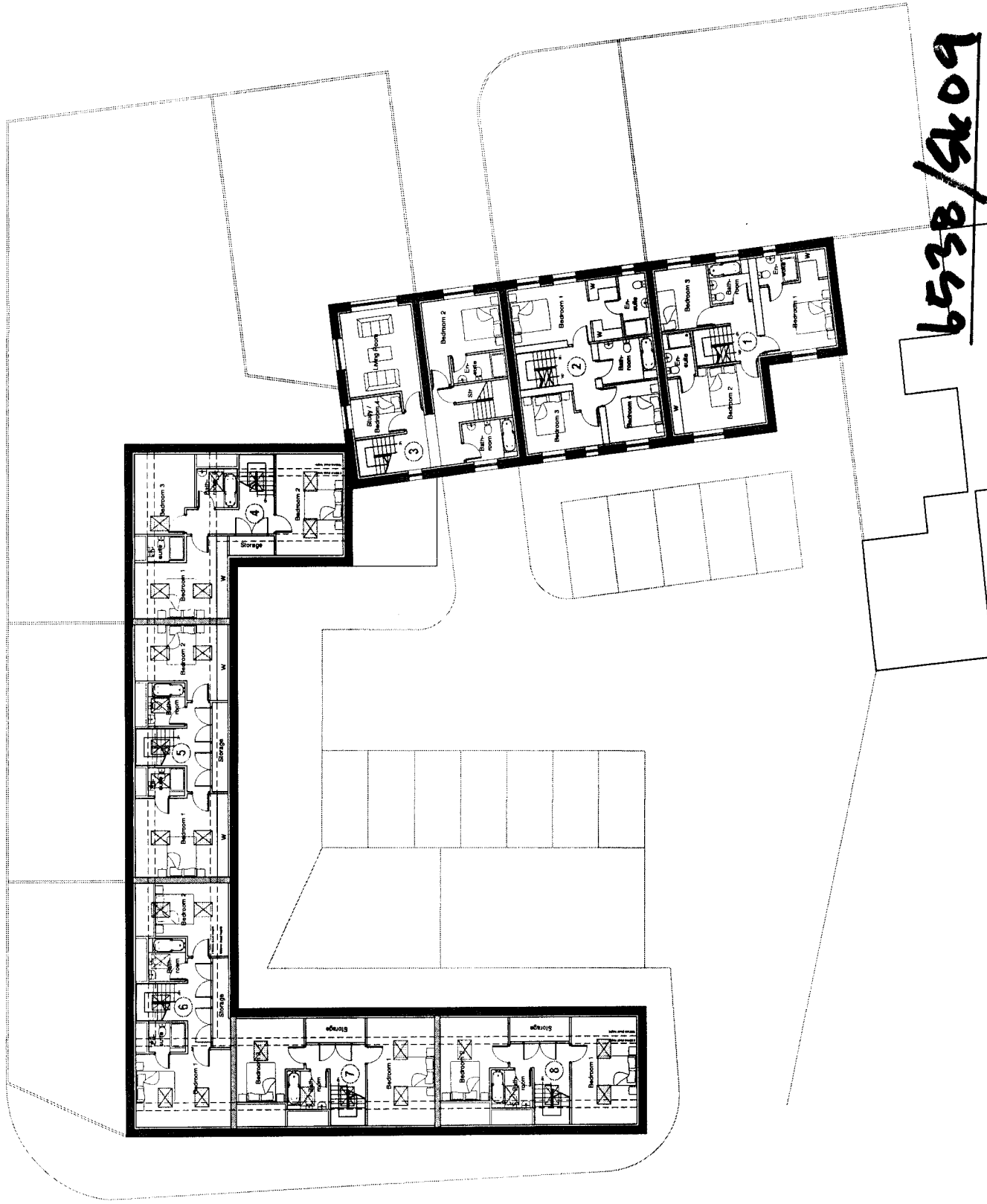


Entrance in
(one way only)

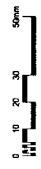
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Mr S Trowbridge		1:1000	1:1000
Broad Oak Farm Rossett		1:1000	1:1000
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AG	XX	30.06.2017	1:1000
PLANING	1:1000		
c3707	L12	P2	
Cassidy+Ashton		1:1000	1:1000
1:1000		1:1000	1:1000

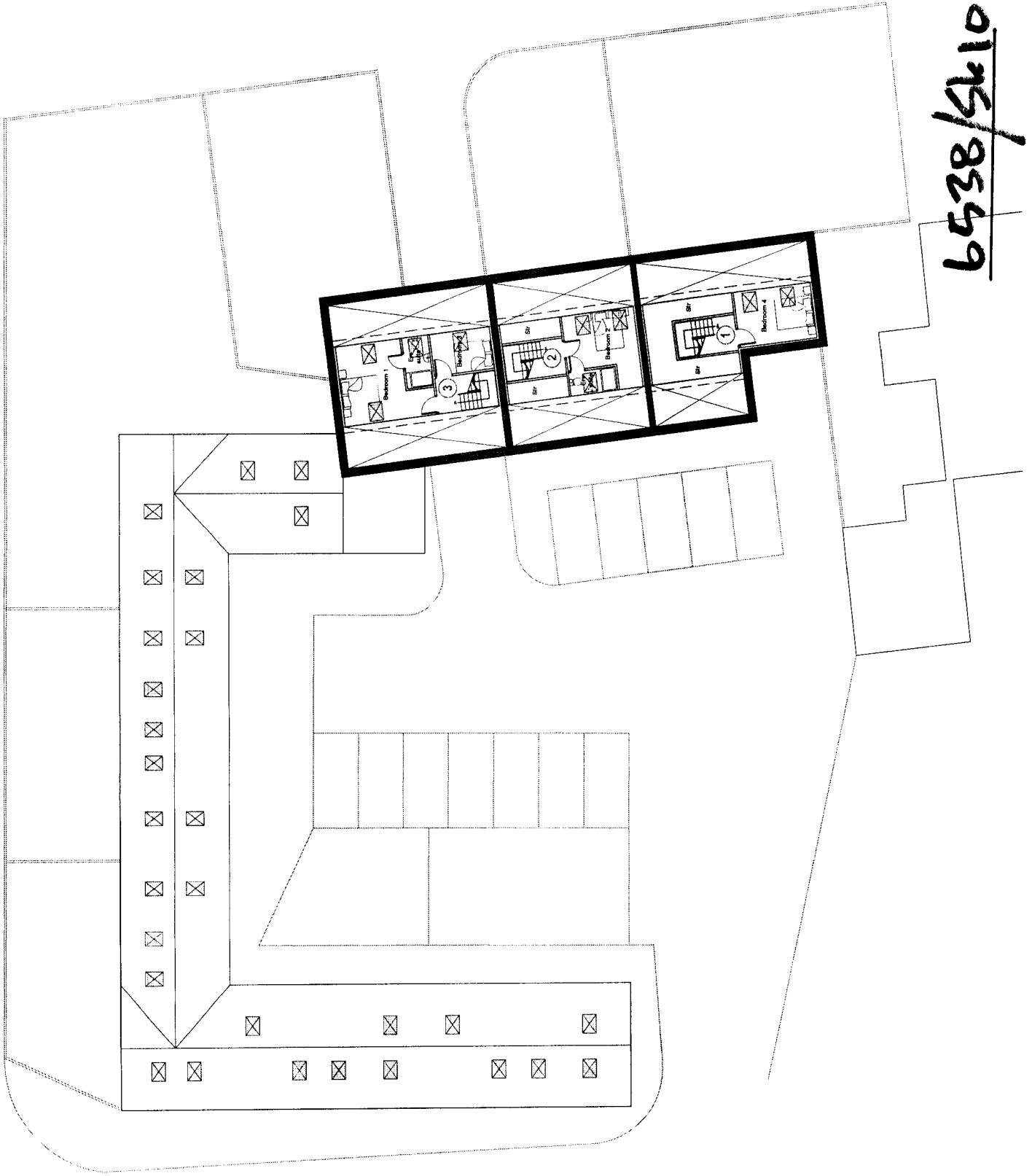
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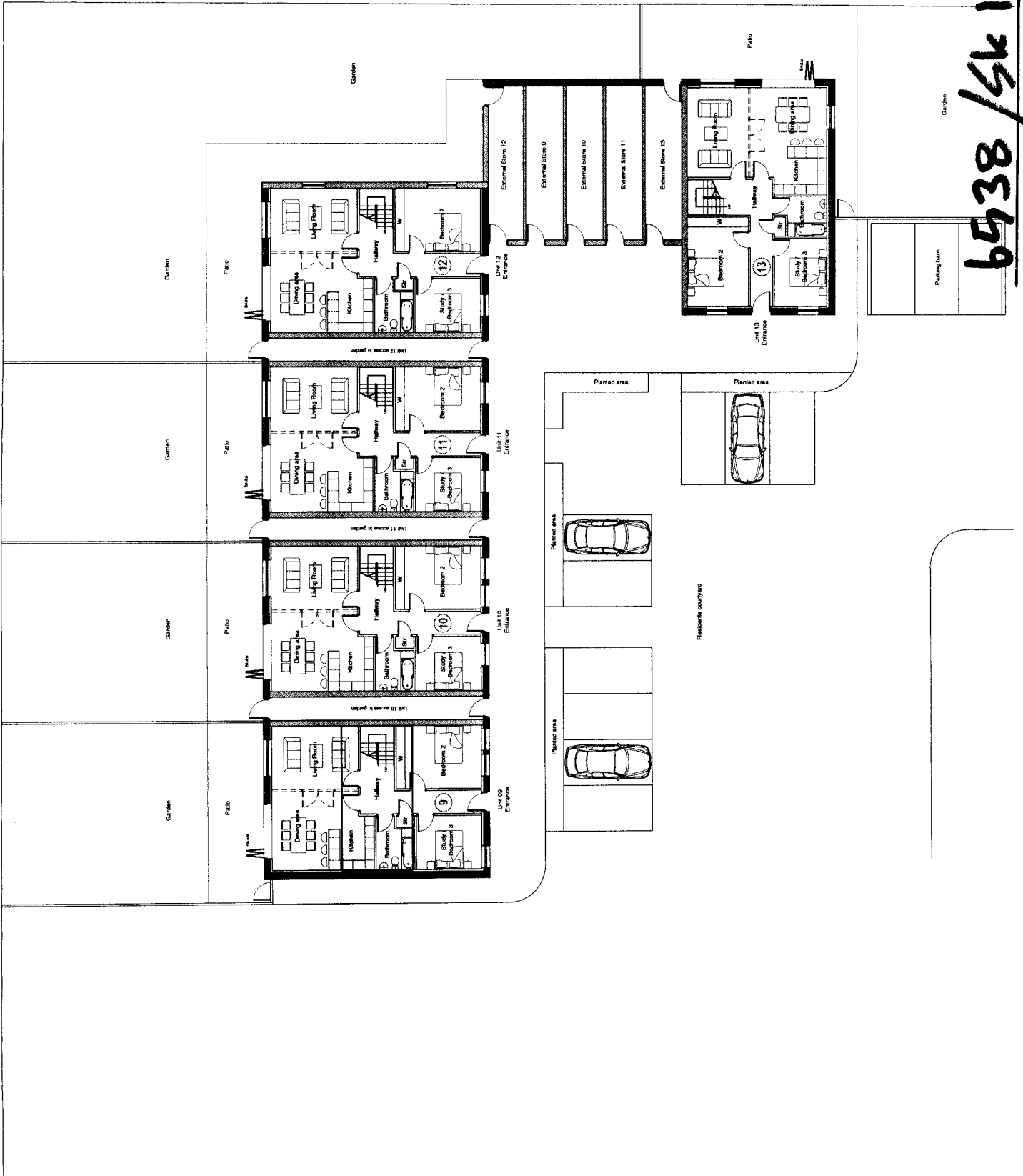
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Client	Broad Oak Farm Rossett			Check By	30.05.2017
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Project No	AD	XX	XX	Project Name	1:100
Project Name	P2			Project No	1:100
Project No	L13			Project Name	1:100
Project Name	c3707			Project No	1:100
Project No	P2			Project Name	1:100
Project Name	Cassidy+Ashton			Project No	1:100



0 10 20 30 50mm

Project Name	Mr S Trowbridge		
Site Name	Broad Oak Farm Rossett		
Unit	Residential Unit 1 - 8		
Proposed	Proposed Second Floor GA		
Scale	AO	XX	30.05.2017
Planning	1:100		
Drawn	c3707	L14	P2
Check	Cassidy Ashton		
Client	Cassidy Ashton		
Project Manager	Cassidy Ashton		
Architect	Cassidy Ashton		
Structural Engineer	Cassidy Ashton		
Electrical Engineer	Cassidy Ashton		
Mechanical Engineer	Cassidy Ashton		
Environmental Engineer	Cassidy Ashton		
Acoustic Engineer	Cassidy Ashton		
Fire Engineer	Cassidy Ashton		
Transport Engineer	Cassidy Ashton		
Other	Cassidy Ashton		

6538/Sk10



0 10 20 30 50mm

Project Name		Mr S Trowbridge	
Client		Broad Oak Farm Rossett	
Residential Unit 9-13		Proposed Ground Floor GA	
Drawn by	AO	Check by	XX
Date	14/05/2017	Date	30/05/2017
Scale	1:100	Scale	1:100
Project No	c3707	Project No	L17
Project No	P1	Project No	P1
Cassidy Ashton		Cassidy Ashton	

6538/sk 11

1:1000

0 10 20 30 50mm

Mr S Trowbridge	
Broad Oak Farm	
Rossett	
Residential Unit 9-13	
Proposed First Floor GA	
AD	XX
PLANNING	30.06.2017
1:100	
c3707	L18
P2	
Cassidy Ashton	

6538/sk12