



FOUL AND SURFACE WATER DRAINAGE STRATEGY

FOR
REDBROOK MILL CLOSE, GAWBER

ON BEHALF OF
CADAM CONSTRUCTION LTD

ARP ASSOCIATES

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Foul and Surface Water Drainage Strategy for Redbrook Mill Close, Gawber 1487/04r1			
	Initial Issue 17th Nov 2021	Revision A	Revision B
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1.0 INTRODUCTION

- 1.1 Cadam Construction Ltd is proposing to develop a site off Redbrook Road, Gawber in Barnsley, with residential dwellings. To support the planning application and assist with the appraisal of the site, a Foul and Surface Water Drainage Strategy is required to outline the proposed means of sustainably managing foul effluent and surface water runoff from the development.
- 1.2 ARP Associates have been appointed to carry out a Foul and Surface Water Drainage Strategy for the development, implement appropriate consultations and prepare a report to satisfy the requirements of the Planning Authority.
- 1.3 The regulatory authority consultations and site appraisal for this current assessment were carried out between October and November 2021.
- 1.4 In 2007, Planning Permission was granted for the site, subject to legal agreement, including an area directly to the south. The combined area is shown on the screenshot from Barnsley Planning Portal shown in Appendix A. The Planning Application reference was B/05/0565/DT and was for residential development. The land directly south of the site has been developed with residential units and a formalised access via a ghost island off Redbrook Road. However, the application area which is the subject of this drainage report was not fully developed following the approval. The “undeveloped” area to the north is the focus of this report, which will share the access from Redbrook Road.
- 1.5 A separate planning application has since been made for this site i.e. north of the access road. Planning Permission has been granted for eight residential dwellings and associated works under planning application number 2021/0562. Planning Condition 13 relates to drainage.
- 1.6 The report has been initially prepared for the use and reliance of the Client only. The report shall not be relied upon or transferred to any other parties without the written agreement of ARP Associates. For the avoidance of any doubt, where ARP Associates enters into a letter of reliance for the benefit of a third party, that third party will be permitted to rely on the report.

No responsibility will be accepted where this report is used, either in its entirety or in part, by any other party without ARP Associates consent.

- 1.7 Attention is drawn to the requirements of the Construction Design and Management Regulations 2015, and in particular, the duties and obligations of the Client.

2.0 SITE DESCRIPTION

General

- 2.1 The site, which is centred on Ordnance Survey Grid Reference 432133, 407724, is located on the land to the west of Redbrook Road, Barnsley. The site is to the northwest of the centre of Barnsley and the nearest postcode is S75 2HA.
- 2.2 A site location plan is presented in Appendix B.
- 2.3 The application site is an irregular shaped piece of land and is approximately 0.27ha. The site is brownfield.

Current Use

- 2.4 The application site was historically developed, and this previous development has since been demolished. The demolition was undertaken sometime around 2010- 2011 and the site was then cleared. The site is therefore currently unoccupied, with no formal land use. Concrete surfacing is present across the width of the site towards the north, forming a band between the adjacent scrubland areas. A strip of tarmac surfacing is still present further north, and some of the original brick walls retaining an earth embankment are present along the western side of the site. A brick wall is also present along the eastern boundary, noted below.

Boundaries

- 2.5 There is no formal 'red line' boundary available for this report. A red site boundary line is shown on a site location plan, which is inset on the topographical survey presented in Appendix C. However, it is understood that the development will not extend to the full northern and western extents of this boundary. The site boundaries associated with this "red line" are discussed below.

- 2.6 The site is bounded on all sides by either metal railings, metal gates/fencing, or low brick wall and metal railings.
- 2.7 The site is wider at the north and tapers towards the south. The access is located close to the middle of the southern boundary. A continuous low brick wall with metal railings above is present along the remainder of the southern boundary. This wall continues along the whole of the eastern boundary, beyond which is a public footway, which is alongside Redbrook Road. Redbrook Road widens along the eastern side of the site to include a ghost island turning facility into the site access, and further east is the opposite footway and further residential properties.
- 2.8 A substation is present in the northeastern corner of the site. Metal railing forms the remainder of the northern boundary, and also the few metres between the substation and the brick wall on the eastern boundary. A footpath is present on the northern side of the northern boundary, with a café and parking beyond.
- 2.9 The western site boundary is formed by metal railing. The railing is at the top of a steep vegetated embankment which is present along the whole of the western side of the site. The embankment makes up the level difference between the site and the higher land to the west. Development proposals indicate that the embankment will remain “undeveloped”, with vegetation shown along the western side of the site.

Topography and Vegetation

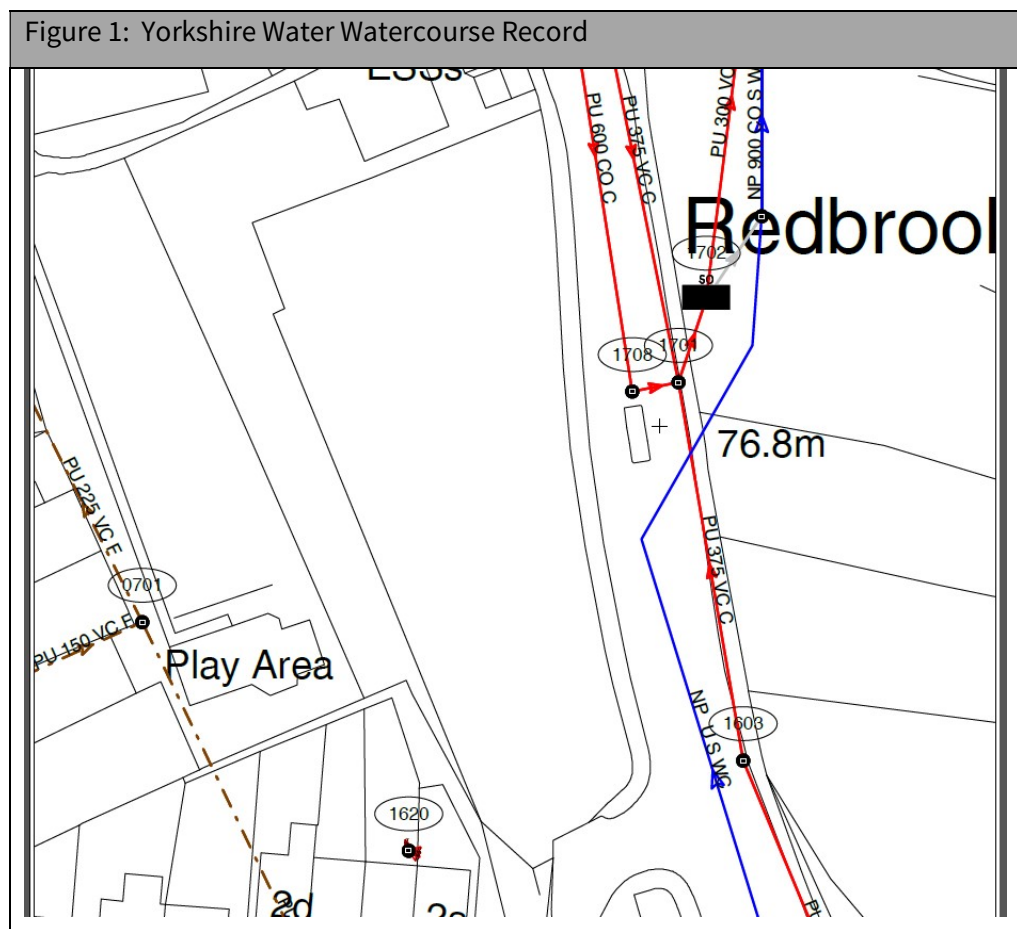
- 2.10 The site has been cleared and graded during the remediation works. Consequently, there is reasonable conformity in levels across the site, though some slight undulations. A topographical survey has been undertaken, which shows a concrete plateau across the northern part of the site being relatively flat around 76.7 – 76.8m AOD. The western side includes a brick wall, partially retaining an earth embankment on the western side of the site.

- 2.11 Across the site generally there is a gentle fall to the south and east. The lowest levels are in the south east corner, with a manhole cover level recorded as 75.95m AOD. A steep embankment is present along the western side of the site, some four metres in height, with a top level of around 81.5m AOD.
- 2.12 A copy of the topographical survey information for the site is presented in Appendix C.
- 2.13 Extensive mature vegetation in the form of bushes, shrubs and semi mature trees are present along the embankment on the western boundary. There is uncontrolled weeds and self-seeded vegetation throughout the unmade ground on the majority of the site.

Hydrology and Existing Drainage

- 2.14 The River Dearne is present some 1.5km north of the site. It is classified as a Main River by the Environment Agency. There is evidence of a culverted watercourse passing very close to the site, discussed below, and this watercourse is expected to ultimately outfall into the river.
- 2.15 The site was previously developed and drainage would have been present. During the remediation of the site, drainage may be been damaged or removed, or covered up. A manhole is present within the southeast of the site, but has not been lifted. A manhole is present within the concrete surfacing part of the site, thought to possibly be an oil interceptor. However, no gullies or similar infrastructure is present. Therefore, there is no evidence of functioning drainage systems within the site, though this cannot be ruled out.
- 2.16 It is likely that surface water currently falling within the development site would infiltrate to some degree, with the remainder of the surface water following the topographical trend and outfalling into the drainage system within Redbrook Road.
- 2.17 Yorkshire Water has provided their asset records plan which demonstrates that a network of combined sewers is present within Redbrook Road. These converge and flow northwards through a 300mm diameter public combined sewer. A sewer overflow is also present, shown discharging to the east.

2.18 YW also provided a separate record showing a watercourse, coloured blue, overlaid on their asset plan. An excerpt is shown below in Figure 1. The records indicate this is a 900mm diameter culverted watercourse, present within Redbrook Road. To the south of the site, it is shown towards the centre of the road flowing northwards, before a change of direction occurs approximately adjacent to the lower third of the site. A further change of direction occurs within private gardens on the east of Redbrook Road, and the watercourse is shown flowing in a more northerly direction again.

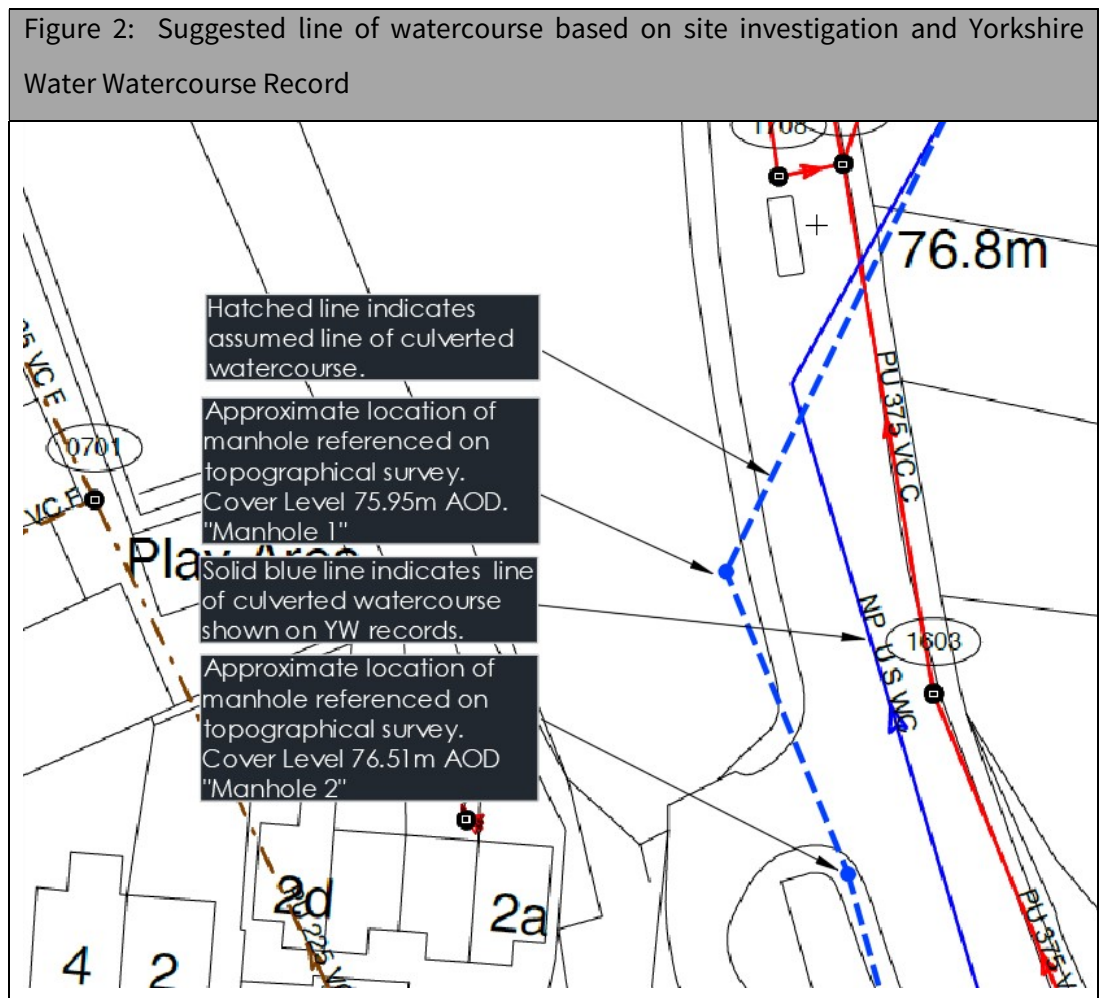


2.19 However, a site investigation has been undertaken, including lifting manhole covers and undertaking a dye test to demonstrate connectivity. A manhole within the housing development south of the site was lifted and substantial water flow was present, flowing northwards. The volume of water strongly suggests this is the watercourse. A dye test was undertaken within this manhole, and the dye flowed through to the manhole (referenced

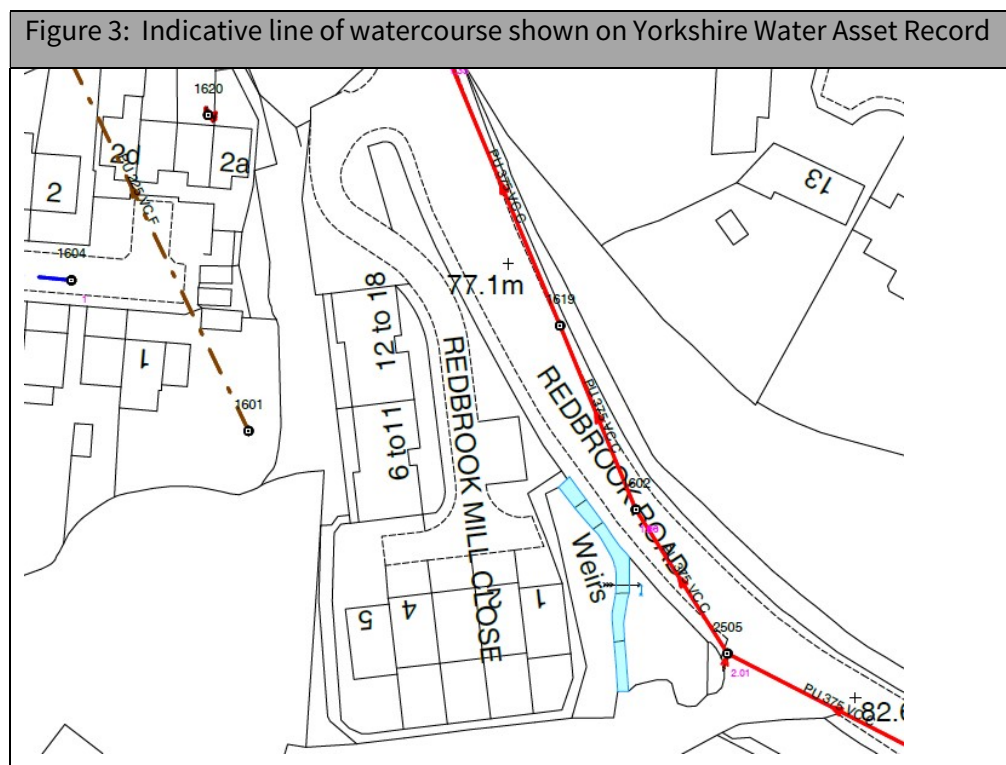
“Manhole 2” on Figure 2 below), present on the tangent of the southern bellmouth to Redbrook Mill Close, within the footway. This implies that the watercourse flows from the southern residential development to the western footway of Redbrook Road, where Manhole 2 is located.

2.20 “Manhole 2” was lifted as part of the dye test and this showed the downstream outlet pipe following the direction of the footpath i.e. northwards, across the site access junction. This orientation suggests connection with the manhole present within the site, reference “Manhole 1”.

2.21 Figure 2 below has been drawn to illustrate the likely route of the culverted watercourse.



- 2.22 As indicated above in Figure 2, there is a manhole in the south eastern corner of the site, referenced as “Manhole 2”. This is approximately level with where the YW records suggest a change in direction occurs with their record of the watercourse location. As shown above in Figure 2, it is considered more likely that the watercourse flows through to the application site, before changing direction and crossing Redbrook Road.
- 2.23 It should also be noted that an open watercourse is indicated on the public sewer record, slightly south of the site, shown to the west of the western footway. An excerpt is below in Figure 3. The drawing indicates the watercourse follows the line of the footway, rather than crossing the road at this point.



- 2.24 With reference to 2.16 above, it is therefore currently uncertain whether surface water currently falling within the development site ultimately discharges into the culverted watercourse or to the public combined sewer system.

3.0 CONSULTATION

Water Authority

- 3.7 Consultation was undertaken with Yorkshire Water, which is the Water Authority for this area, and a copy of the response, reference X019495 dated 4th November 2021 is presented in Appendix D for reference.
- 3.8 Yorkshire Water records suggest there are no public sewers within the site. However, it is noted that, due to the change in legislation in October 2011, there may be public sewers within the site boundary which are not recorded on the statutory sewer map, the presence of which should be taken into account in the design of the site.
- 3.9 It is noted that development of the site should take place with separate systems for foul and surface water drainage. The separate systems should extend to the point of discharge to be agreed.
- 3.10 It was confirmed that foul water domestic waste from the proposed development can be discharged to the public combined sewer recorded in Redbrook Road, at a point to the east of the site.
- 3.11 YW advised that they understood a 900mm culverted watercourse to be present within Redbrook Road, to the east of the site. The Water Authority confirmed that this appears to be the obvious place for surface water disposal (if SuDS are not viable).
- 3.12 Further restrictions on surface water disposal from the site may be imposed by other parties. The Water Authority strongly advise the Developer to seek advice/comments from the Environment Agency/Land Drainage Authority/Internal Drainage Board, with regard to surface water disposal from the site.

Lead Local Flood Authority

- 3.13 Consultation with Barnsley Council, which is the Lead Local Flood Authority (LLFA) for this area, has been undertaken. However, at the time of writing this drainage assessment, a response from the council was still awaited.

4.0 CLIMATE CHANGE

- 4.1 The NPPF and PPG have indicated that the Global sea level will continue to rise, depending on greenhouse gas emissions, and the sensitivity of the climate system and there will be an increase in rainfall across the country. United Kingdom climate change guidance was revised in February 2016 for peak rainfall intensities.
- 4.2 In accordance with the revised climate change data, the published figures show that for an expected development life of greater than 50 years, the anticipated increase in rainfall intensity could range from 20% to 40%, subject to the location within the country.
- 4.3 At this stage the outline surface water drainage strategy (discussed further below) has been defined with respect to a 40% allowance, as per the anticipated requirements of the LLFA.

5.0 DEVELOPMENT PROPOSALS

- 5.1 The development proposals for the site are for the construction of eight residential units with associated access, parking and landscaping areas. The development proposals are illustrated in the Proposed Site Plan in Appendix E.

6.0 SURFACE WATER DRAINAGE

- 6.1 It is a requirement of the NPPF to ensure that surface water run-off from any proposed development has negligible consequence on downstream areas, either in terms of impact upon downstream sewer capacity or flood risk impacts due to discharge to a watercourse. The existing and proposed surface water run-off regime is considered below.

Existing Surface Water Run-off

- 6.2 As set out above, the land has been cleared and levelled following demolition of previous infrastructure. There is no known functioning surface water drainage system in place. It is likely that surface water currently falling within the development site would infiltrate to some degree, with the remainder of the surface water following the topographical trend and outfalling into the drainage system within Redbrook Road. This may in turn discharge to the culverted watercourse or the public combined sewer system.
- 6.3 The site would be considered to be brownfield as it was previously developed. An existing discharge rate has yet to be established as the existing surface water outfall has not been identified. However, it is expected that surface water follows the topography of the site and ultimately discharges into the road gullies present in Redbrook Road in an uncontrolled/undefined rate.

Proposed Surface Water Runoff Destination

- 6.5 The proposed means of managing surface water runoff from the proposed development has been considered with respect to the hierarchy set out in Building Regulations Part H (2010).
- 6.6 Infiltration – Percolation testing has not been carried out on the site. However, the site comprises made ground following previous development, and it is considered that the use of soakaways is not a feasible way of discharging surface water from the proposed development.

- 6.8 Watercourse – As infiltration is considered unfeasible, discharge to a watercourse is considered to be the next most favourable option. As set out in Section 2, there is a culverted watercourse located to the east of the site. This watercourse may actually cross the south-eastern corner of the site. This is considered to be the most practical location for surface water discharge and is agreed in principle with the Water Authority. It is expected that the LLFA would have specific requirements to allow a future connection into the watercourse. There would also be a requirement for an area to be provided alongside the watercourse where no development can take place, in order to allow for future improvements or maintenance.

For the purpose of defining an appropriate rate of discharge for the proposed drainage system, the LLFA has been consulted on the principle of utilising 5l/s as a proposed discharge rate, with a view to formalising a connection into the culverted watercourse.

- 6.9 Sewers - In the event that connection to watercourse is proven to be unfeasible, then it would be appropriate to consider a surface water connection to the combined sewer system within Redbrook Road. Foul water is proposed to discharge to the public sewer network.

Proposed Surface Water Drainage

- 6.10 The suggested drainage strategy arrangement is indicated on ARP Associates Drainage Strategy drawing, reference 1487/04/05 Private Drainage Layout. As discussed above, it is expected that discharging surface water to the culverted watercourse will be the most appropriate measure for discharging proposed surface water. The proposed discharge rate for this development has been suggested as 5l/s, subject to approval by the Regulatory Authorities. It is anticipated that flow restriction would need to be achieved using a vortex flow control device.
- 6.11 The proposed development layout has been assessed as having a proposed impermeable area of 0.09ha.

- 6.12 The proposed surface water system should be designed to accommodate a 1 in 30 year storm event without flooding and, to accord with the expected requirements of the LLFA, the drainage system will need to accommodate the 1 in 100 year plus 40% climate change allowance event without causing flooding of property or third-party land.
- 6.13 Restricting the discharge rate to no greater than 5l/s will require on-site storage to be provided for a 1 in 100 year plus 40% climate change event. It is envisaged that this volume will be accommodated on site by means of underground storage.
- 6.14 Detailed calculations and proposals will need to be prepared and submitted to the Planning Authority for approval prior to construction.
- 6.15 Preliminary assessment of levels indicates that surface water can most likely be discharged by means of a gravity connection, however this will be confirmed at the detailed design stage. If a gravity connection is not possible, then a pumping station will be required.

Alternative Surface Water Drainage Option

- 6.16 However, surface water connection to the culverted watercourse may be found to be unfeasible. In this instance, a connection to the combined public sewer system may be appropriate. Indeed, it is possible that there may be an existing connection to the public combined sewer system within Redbrook Road. If connection is proven then a proposed discharge rate equating to 70% of the existing run-off would be appropriate (in accordance with planning condition 13 of Planning Permission relating to Application No 2021/0562).
- 6.17 The strategy above is subject to agreement with the Regulatory Authorities.

Exceedance Flow Routes

- 6.18 For rainfall events in excess of the design standard (i.e. greater than 1 in 100 year plus climate change event) the capacity of the drainage system is likely to be exceeded. There also remains

a residual risk of flows leaving the surface water drainage system in the event of a blockage. Additionally, as detailed earlier in this report, an existing surface water flow path has been identified in the northern part of the site.

- 6.19 So that exceedance flows do not adversely affect properties on or off site, site levels should be designed to direct flows away from the building entrances where possible, so that any flooding remains in landscaped areas, car parking areas, or roads, where the consequences of surface water flooding would be less significant.
- 6.20 Exceedance flow routes will be reviewed as part of the detailed drainage and levels design, with details provided to the LLFA for review. The arrangement will need to be indicated on design drawings. At the time of writing this report, ARP Associates has prepared external works design, shown on drawing 1487/04/08, and a private drainage layout, reference 1487/04/05.

Sustainable Drainage Systems (SuDS)

- 6.21 NPPF requires that SuDS are implemented in ‘major development’, if feasible, and it is considered good practice to introduce such methods if possible during residential development. It must be recognised that not all types of SuDS are feasible or appropriate for all development sites, with factors such as available space, ground conditions, and site gradient influencing the feasibility of their use.
- 6.22 As noted above, infiltration drainage systems are considered unlikely to be suitable for the site. However, SuDS in the form of attenuation of surface water flows within an underground storage tank and regulating the surface water discharge rate are proposed as part of the drainage strategy.
- 6.23 It is envisaged that it may be feasible to utilise further SuDS components within the surface water drainage network, but the proposals for these will be confirmed at the detailed design stage.

7.0 FOUL DRAINAGE

- 7.1 This section sets out the proposed means of managing foul discharge from the development.
- 7.2 Yorkshire Water has advised that foul water domestic waste from the proposed development can be discharged to the public combined sewer recorded in Redbrook Road, at a point to the east of the site.
- 7.3 Preliminary assessment of levels indicates that foul water can most likely be discharged by means of a gravity connection, however this will be confirmed at the detailed design stage. If a gravity connection is not possible, then a pumping station will be required.
- 7.4 The strategy above is subject to agreement with the Regulatory Authorities.

8.0 MAINTENANCE

- 8.1 There is a residual risk of flooding from drainage systems in the event of siltation or a blockage occurring. It is therefore essential that drainage systems are subject to periodic inspection and maintenance, so that the design standard is not compromised, and to reduce the risk of blockage.
- 8.2 The inspection and maintenance of any drainage infrastructure serving a single property, and located within the curtilage of that property, will remain the responsibility of the relevant property owner.
- 8.3 Responsibility for the ongoing inspection and maintenance of the remainder of the drainage systems will be confirmed following detailed design. It may be feasible for some parts of the drainage system to be adopted by Yorkshire Water. Where drainage remains unadopted, it is envisaged that the responsibility for ongoing inspection and maintenance of the remainder of the drainage systems will be assigned by the developer to appropriate individual property owners, or an appropriate group of property owners, through specific clauses in individual property deeds. Alternatively, the ongoing inspection and maintenance may remain the responsibility of the site/building owner or to be transferred to an appropriate Management Company.
- 8.4 An appropriate inspection and maintenance plan will be developed prior to building occupation, and implemented thereafter by responsible party, using suitably qualified professionals. The plan shall be agreed with the LLFA.

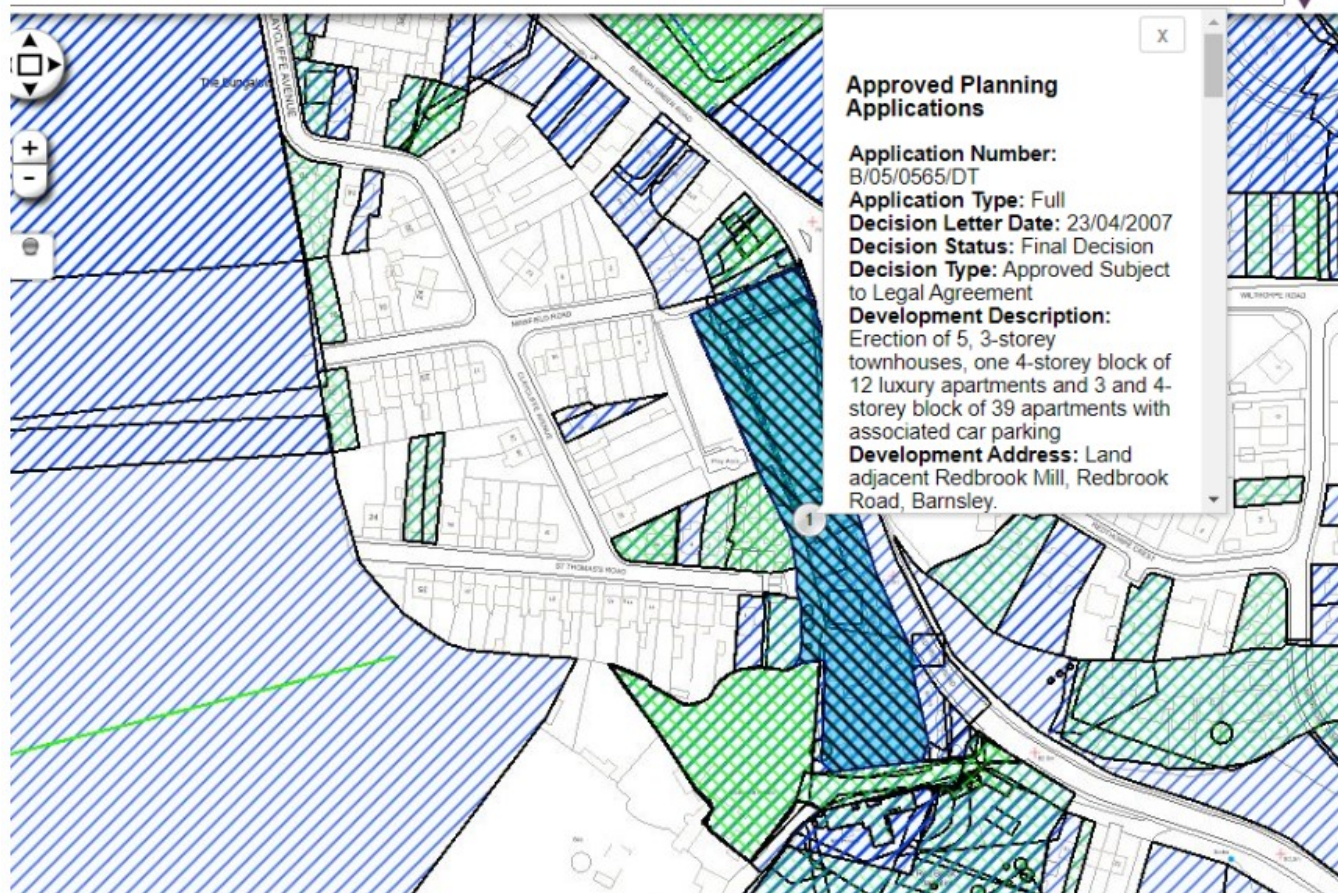
9.0 SUMMARY

- 9.1 The principles of a sustainable surface water management strategy for the proposed development are outlined within the report. Infiltration techniques are unfeasible on this particular site, and direct connection to a culverted watercourse is proposed.
- 9.2 The preferred proposed surface water discharge will be to culverted watercourse, attenuated to a maximum rate of 5l/s, subject to agreement with the relevant authorities. Storage will be provided in an attenuation tank, to manage surface water up to the 1 in 100 year plus climate change event before discharge to the sewer. A 40% increase in rainfall intensity has been incorporated into the proposals to account for the projected impacts of climate change.
- 9.3 If connection to the culverted watercourse is determined to be unfeasible, connection to the combined sewer network is the next most preferable option.
- 9.3 Exceedance flow routes should be reviewed at the detailed design stage to mitigate any potential adverse off-site impacts.
- 9.4 Yorkshire Water has advised that foul water domestic waste from the proposed development can be discharged to the public combined sewer recorded in Redbrook Road, at a point to the east of the site.
- 9.5 Preliminary assessment of levels indicates that surface and foul water can most likely be discharged to the river by means of a gravity connection, however this will be confirmed at the detailed design stage. If a gravity connection is not possible, then a pumping station will be required.
- 9.6 Suitable maintenance regimes will be required for proposed drainage infrastructure. Details of maintenance plans will be confirmed and agreed at the detailed design stage.

- 9.7 The findings of this report are subject to the approval of the Regulatory Authorities. The detailed design and calculations shall be submitted to the Planning Authority for approval prior to construction on the development site.
- 9.8 Subject to compliance with the above, the proposed development can satisfy the requirements of the National Planning Policy Framework and the Planning Practice Guidance in relation to surface water management and foul drainage.

APPENDIX A

BARNSELY PLANNING APPLICATION REFERENCE



Approved Planning Applications

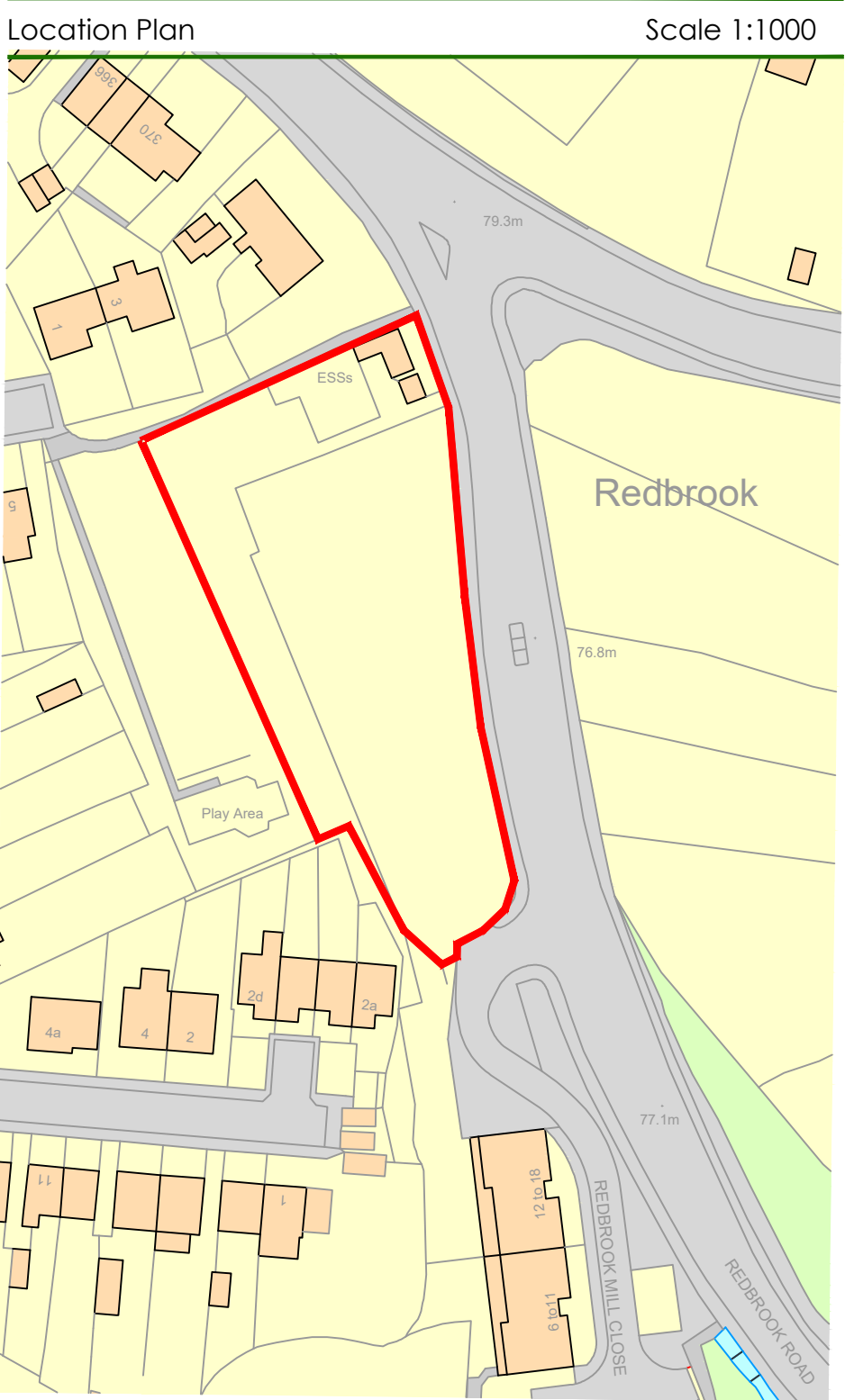
Application Number: B/05/0565/DT
Application Type: Full
Decision Letter Date: 23/04/2007
Decision Status: Final Decision
Decision Type: Approved Subject to Legal Agreement
Development Description: Erection of 5, 3-storey townhouses, one 4-storey block of 12 luxury apartments and 3 and 4-storey block of 39 apartments with associated car parking
Development Address: Land adjacent Redbrook Mill, Redbrook Road, Barnsley.

APPENDIX B

SITE LOCATION PLAN

APPENDIX C

TOPOGRAPHICAL SURVEY



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Survey Control Co-ordinates				
Reference	East	North	Elevation	Description
GPS01	432139.672	407778.738	77.88	Survey Station
H02	432145.156	407721.583	76.02	Survey Station
H03	432145.046	407682.740	76.11	Survey Station
H04	432143.713	407675.646	76.72	Survey Station

Site Survey Control & Datum Information

Grid Orientation:
Survey related to Ordnance Survey "OSGB15" at control point GPS01
and the survey data was processed on a plane grid. [No Scale Factor]
Level Datum:
OS Orthometric HTs

Control & Datum Information

Co-ordinates and levels are based upon OSGB 1936 National Grid (OSGB36) and Ordnance Survey Datum Newlyn (ODN).
They are derived using realtime on site GPS survey, that utilises the National Grid Transformation OSTN15GB and the National Geoid Model OSGM15GB.

This data obtained for use in this drawing involved the use of realtime GPS survey and total station survey.
Contours are shown at 0.5m intervals.

Rev	Description	By	Date
Surv.	Drawn	Date	Chkd
NH	NH	30.03.21	

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Holden Surveys Ltd
Topographical Building & Site Surveys - CAD Services

T: 0773 493 6469 E: holdensurveys@msn.com

Title. Site Plan

Site. Redbrook Hill
Gawber
Barnsley
South Yorkshire

COMPUTER GENERATED DRAWING - DO NOT ALTER

Dwg No. CAD_07_Redbrook Hill

Sheet No. 1

SCALE	1/200	REV.	
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APPENDIX D

WATER AUTHORITY CONSULTATION



YorkshireWater

Mr Carter
Arp Associates
Unit 5/6 Northwest Business Pk
1ST FLR Servia Hill
Woodhouse
Leeds
LS6 2QH
paulcarter@arpassociates.co.uk

Yorkshire Water Services
Developer Services
Pre-Development Team
PO BOX 52
Bradford
BD3 7AY

Tel: 0345 120 8482

Fax:

Your Ref: 1487/04
Our Ref: X019495

Email:
technical.sewerage@yorkshirewa
ter.co.uk

For telephone enquiries ring:
Chris Roberts on 0345 120 8482

4th November 2021

Dear Mr Carter,

Redbrook Road, Barnsley, S75 2HA - Pre-Planning Sewerage Enquiry
U436941 (RESIDENTIAL)

Thank you for your recent enquiry. Our charge of £165.00 plus VAT will be added to your account with us, reference ARP013. You will receive an invoice for your account in due course.

Please find enclosed a complimentary extract from the Statutory Sewer Map which indicates the recorded position of the public sewers. Please note that as of October 2011 and the private to public sewer transfer, there are many uncharted Yorkshire Water assets currently not shown on our records. The following comments reflect our view, with regard to the public sewer network only, based on a 'desk top' study of the site and are valid for a maximum period of twelve months:



Development of the site should take place with separate systems for foul and surface water drainage. The separate systems should extend to the points of discharge to be agreed.

Foul Water

Foul water domestic waste can discharge to the public combined sewer recorded in Redbrook Road, at a point to the east of the site.

Surface Water

The developer's attention is drawn to Requirement H3 of the Building Regulations 2000. This establishes a preferred hierarchy for surface water disposal. Consideration should firstly be given to discharge to soakaway, infiltration system and watercourse in that priority order.

Sustainable Drainage Systems (SuDS), for example the use of soakaways and/or permeable hardstanding etc, may be a suitable solution for surface water disposal appropriate in this situation. You are advised to seek comments on the suitability of SuDS in this instance from the appropriate authorities.

It is understood that a 900 mm culverted watercourse is located in Redbrook Road to the east of the site. This appears to be the obvious place for surface water disposal (if SuDS are not viable). Please note Yorkshire Water cannot provide plans of culverted watercourses or highway drains. To obtain plans please contact the Lead Local Flood Authority for more details.

Please note further restrictions on surface water disposal from the site may be imposed by other parties. You are strongly advised to seek advice/comments from the Environment Agency/Land Drainage Authority/Internal Drainage Board, with regard to surface water disposal from the site.



YorkshireWater

Other Observations

Any new connection to an existing public sewer will require the prior approval of Yorkshire Water. You may apply on line or obtain an application form from our website (www.yorkshirewater.com) or by telephoning 0345 120 84 82.

An off-site foul and surface water sewer may be required which may be provided by the developer and considered for adoption under Section 104 of the Water Industry Act 1991. Please telephone 0345 120 84 82 for advice on sewer adoptions. Alternatively, the developer may in certain circumstances be able to requisition off-site sewers under Section 98 of the Water Industry Act 1991 for which an application must be made in writing. For further information, please telephone 0345 120 84 82.

Prospectively adoptable sewers and pumping stations must be designed and constructed in accordance with the Codes for Adoption as supplemented by Yorkshire Water's requirements, pursuant to an agreement under Section 104 of the Water Industry Act 1991. An application to enter into a Section 104 agreement must be made in writing prior to any works commencing on site. Please contact our Developer Services Team (telephone 0345 120 84 82) for further information.

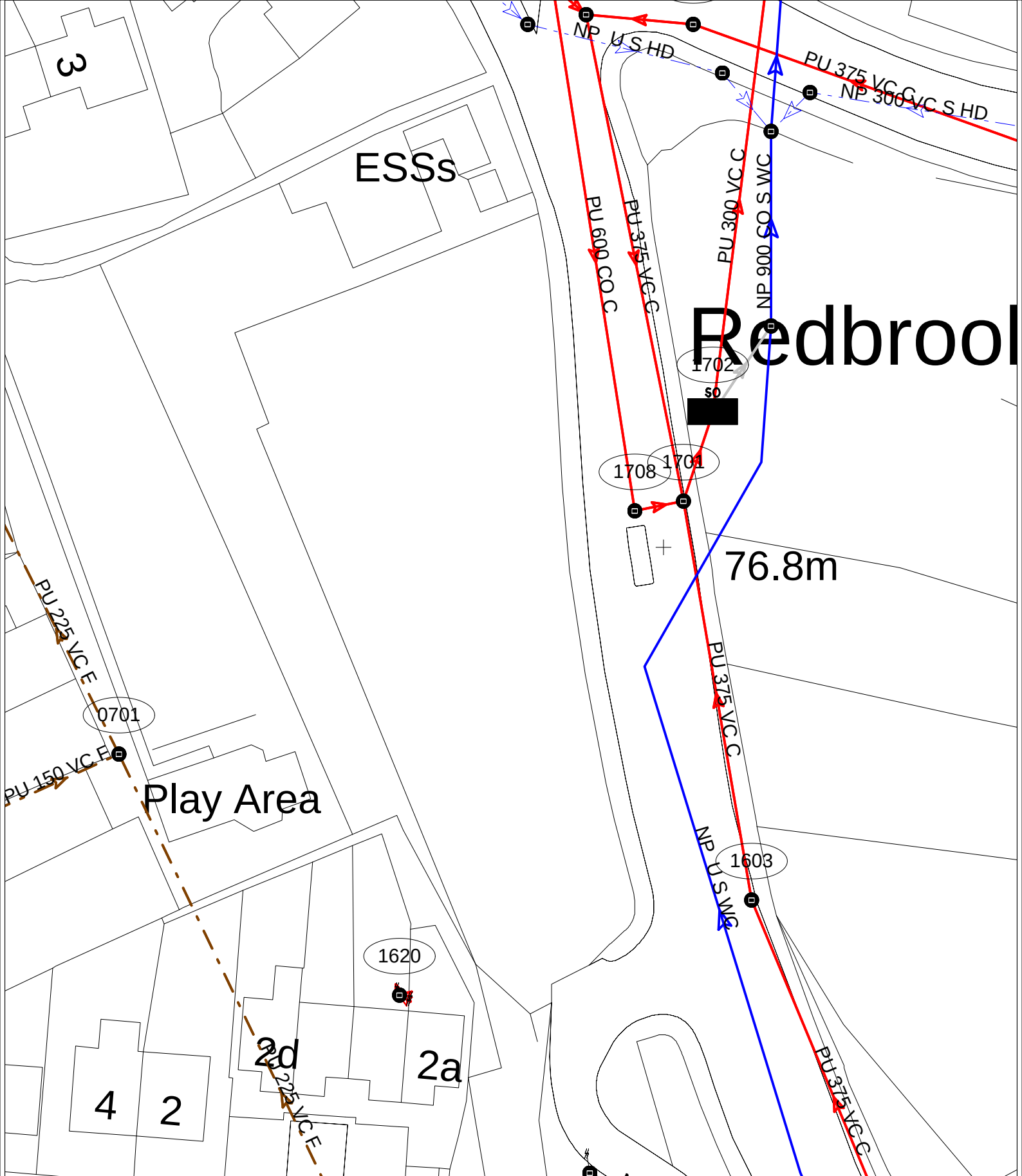
All the above comments are based upon the information and records available at the present time and is subject to formal planning approval agreement. The information contained in this letter together with that shown on any extract from the Statutory Sewer Map that may be enclosed is believed to be correct and is supplied in good faith. Please note that capacity in the public sewer network is not reserved for specific future development. It is used up on a 'first come, first served' basis. You should visit the site and establish the line and level of any public sewers affecting your proposals before the commencement of any design work.

Yours sincerely

Chris Roberts
Development Services Technician



YorkshireWater



432090 : 407661		Map Name : SE3207NW		Title	
 Yorkshire Water, PO Box 500, Halifax Road, Bradford BD6 2LZ Contact Name : YorMap Advisor C ROBERTS Contact Tel 87 2582 (Ody) COPYRIGHT STATEMENTS: Reproduced by permission of Ordnance Survey on behalf of HMSO © Crown copyright and database 2014. All rights reserved Ordnance Survey Licence number 100022432		Notes			
		Partial Key		This plan is furnished as a general guide only and no warranty as to its correctness is given or implied. This plan must not be relied upon in the event of excavations or other works made in the vicinity of public sewers. No house or property connections are shown.	
		Foul Sewer = F			
		Combined Sewer = C			
		Surface Water Sewer = SW			
		Trade Sewer = TD			
		Partially Separate = PS			
		Date Req : 04/11/2021, 11:52:12		Date Gen : 04/11/2021, 11:52:21	
		Source : Sewer Network Enquiry			

APPENDIX E

DEVELOPMENT PROPOSALS



Verify relevant dimensions on site before commencing work or preparing shop drawings.



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CAG

- Service Legend
- Single light switch.
 - 2 way light switch.
 - 3 way light switch.
 - External Lantern (Stainless)
 - Chrome Down light (50W Equivalent LED)
 - *Chrome down light with integrated extractor
 - Occupancy Sensor to lighting
 - Min 18 Watt LED decorative bulkhead, IP rated to suit location
 - Single pendant light point (Low E).

- Under Plinth light sized to suit unit or Tri lights see kitchen design
- Supply 30mm decking lights 1m per 1000mm of plinth, fitted by others, allow for socket under unit
- Wall mounted light point.

- Fused spur.
- Double switched socket.
- *Smoke alarm.

- Honeywell CM907 7 Day Programmable Room Thermostat
- Extract fan socket (2150 high)
- *Ceiling mounted extractor fan.
- BT point.
- TV point.

- TV point 1500mm from floor for wall mounted TV. Ply pattress on partitions
- Sky and TV point (Labgear-PSW351T)
- Position of cabling to be agreed on site

- Pull chord light with built in shaver socket above sink.
- Shaver socket above sink.
- Door bell push.
- Consumer unit.

- Double socket below worktop.
- Double socket 1500mm from floor for wall mounted TV
- Cooker isolator switch with socket (1050 high)
- Single switched socket above worktop.
- Double switched socket above worktop.

- External grade socket at low level with RCD
- Alarm processor
- External alarm box
- Remote Key pad
- Door intruder entry sensor (top of door)

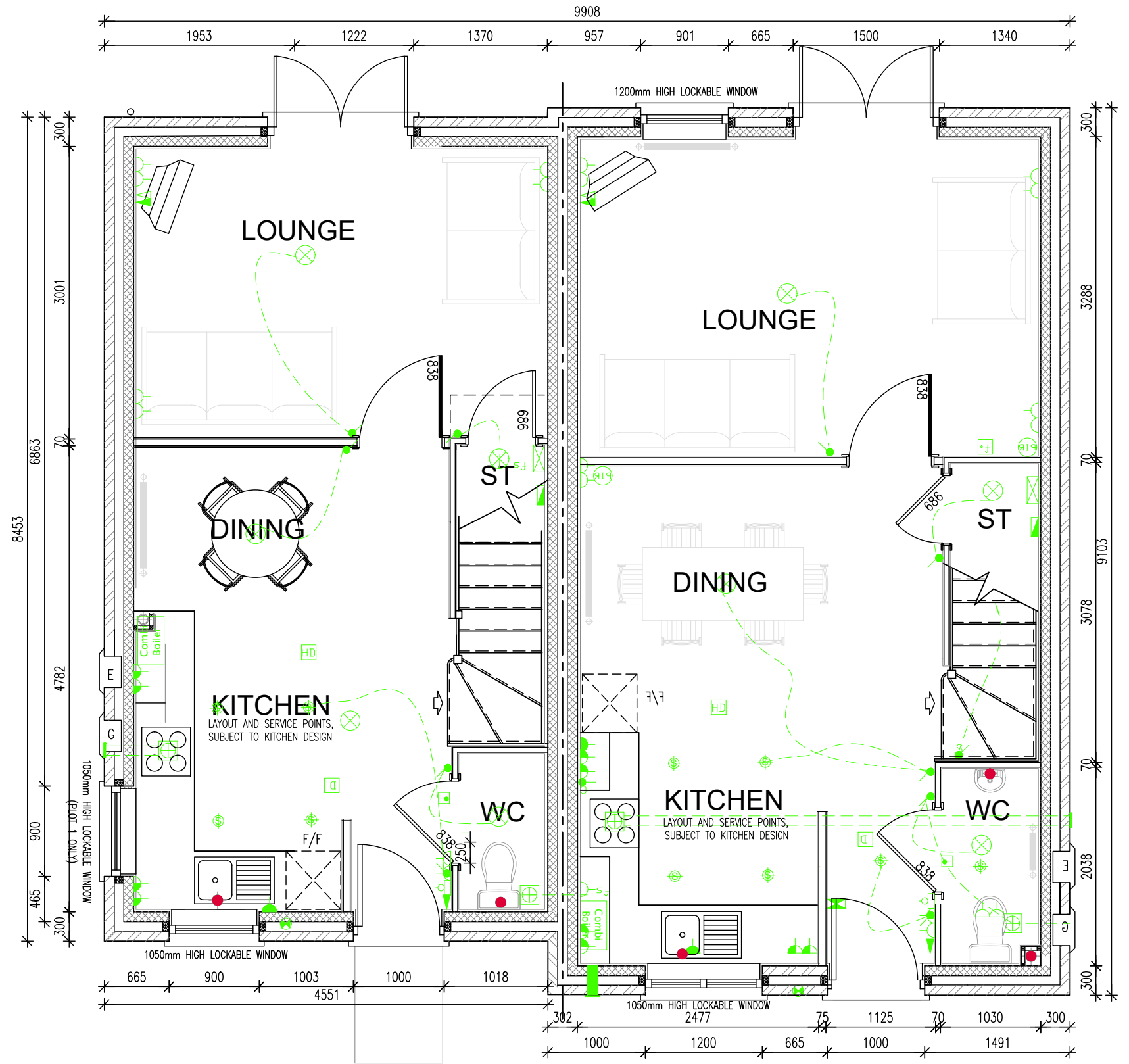
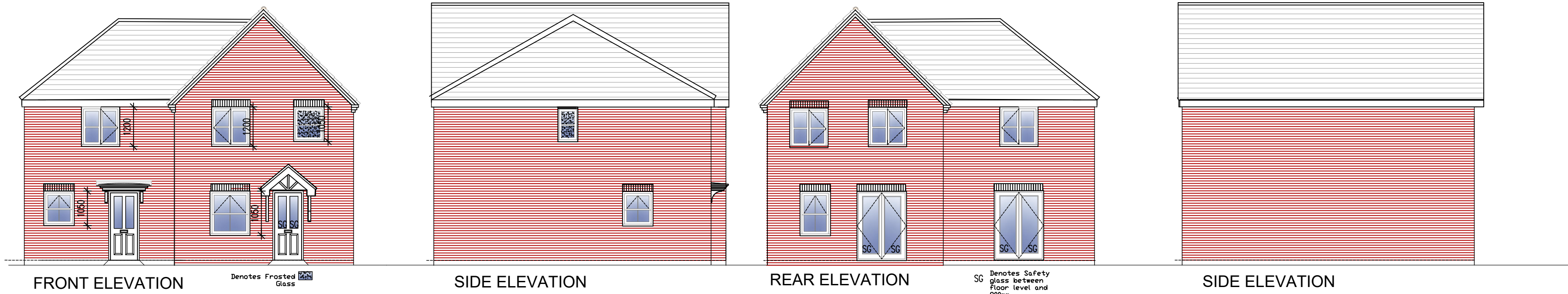
- PIR Alarm Sensor (T) Timed
- Alarm Loud Speaker (2150mm High)
- Radiator Position (Size by Contractor) or Chrome TR (Towel Rail) Where Stated.
- Joiner to fix ply pattress on partitions

- 50 x 225mm pattresses to, radiator, towel rail, sink WC and kitchen units, wardrobe shelves, where shown.

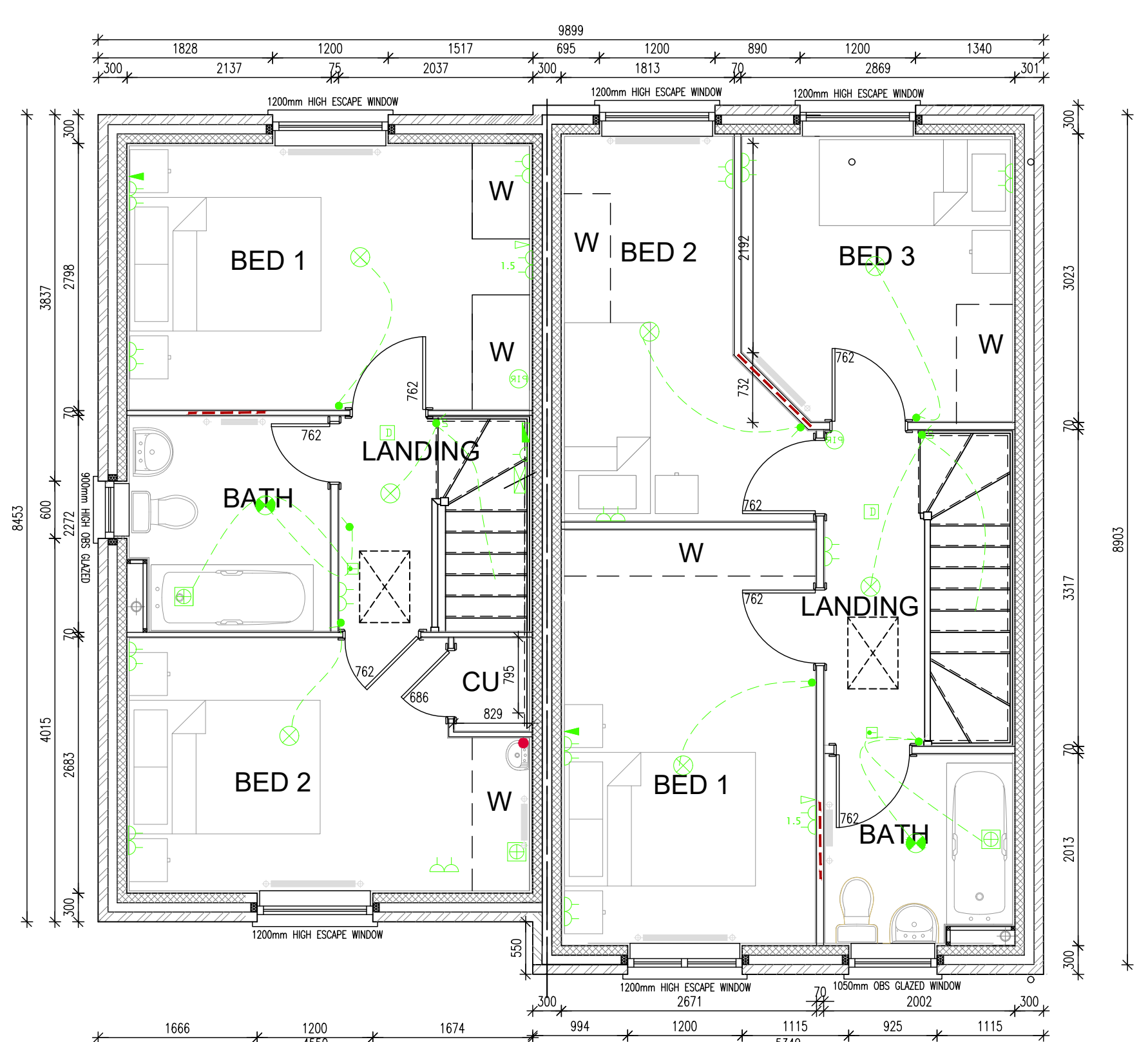
- (*) - See specification for more details
- NB: ELECTRICAL COMPONENT HEIGHTS ABOVE F.F.L TO COMPLY WITH APPROVED DOCUMENT PART M, L AND E. 100% OF LIGHTS TO BE ENERGY EFFICIENCY UNITS

- ALL POSITIONS ON LAYOUT ARE A GUIDE AND WILL NEED TO BE FULLY SETOUT PRIOR TO INSTALLATION

- APPLIANCES AND BOILERS ETC MAYBE SHOWN WITH NO POWER SYMBOL. THESE WILL REQUIRE THE INCLUSION OF POWER AND CONTROLS BY THE ELECTRICAL CONTRACTOR. PLEASE LIASE WITH INSTALLER

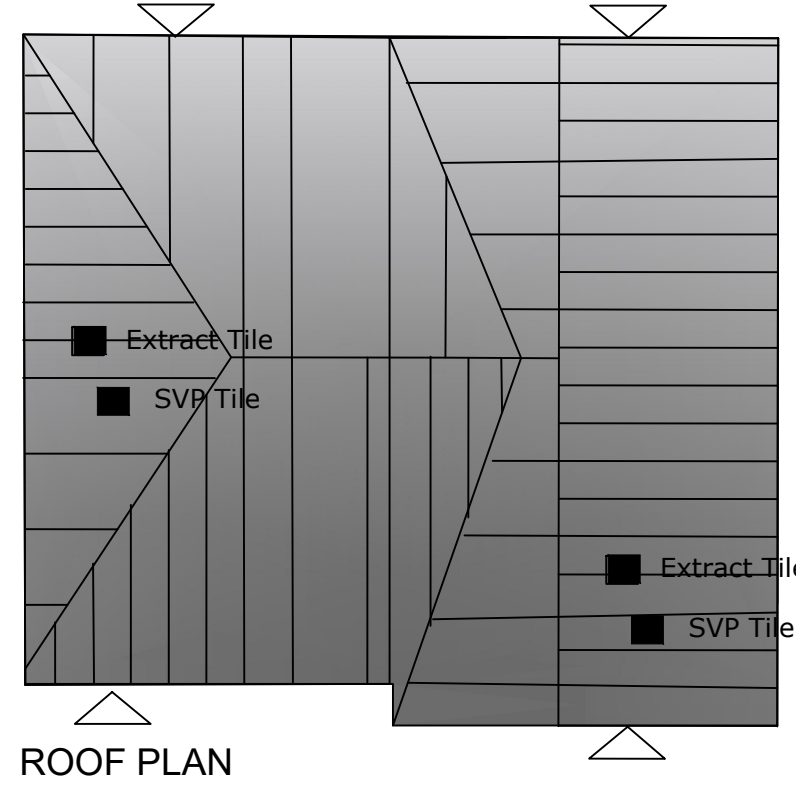


GROUND FLOOR PLAN



FIRST FLOOR PLAN

PLOT 1 & 2, 3 & 4

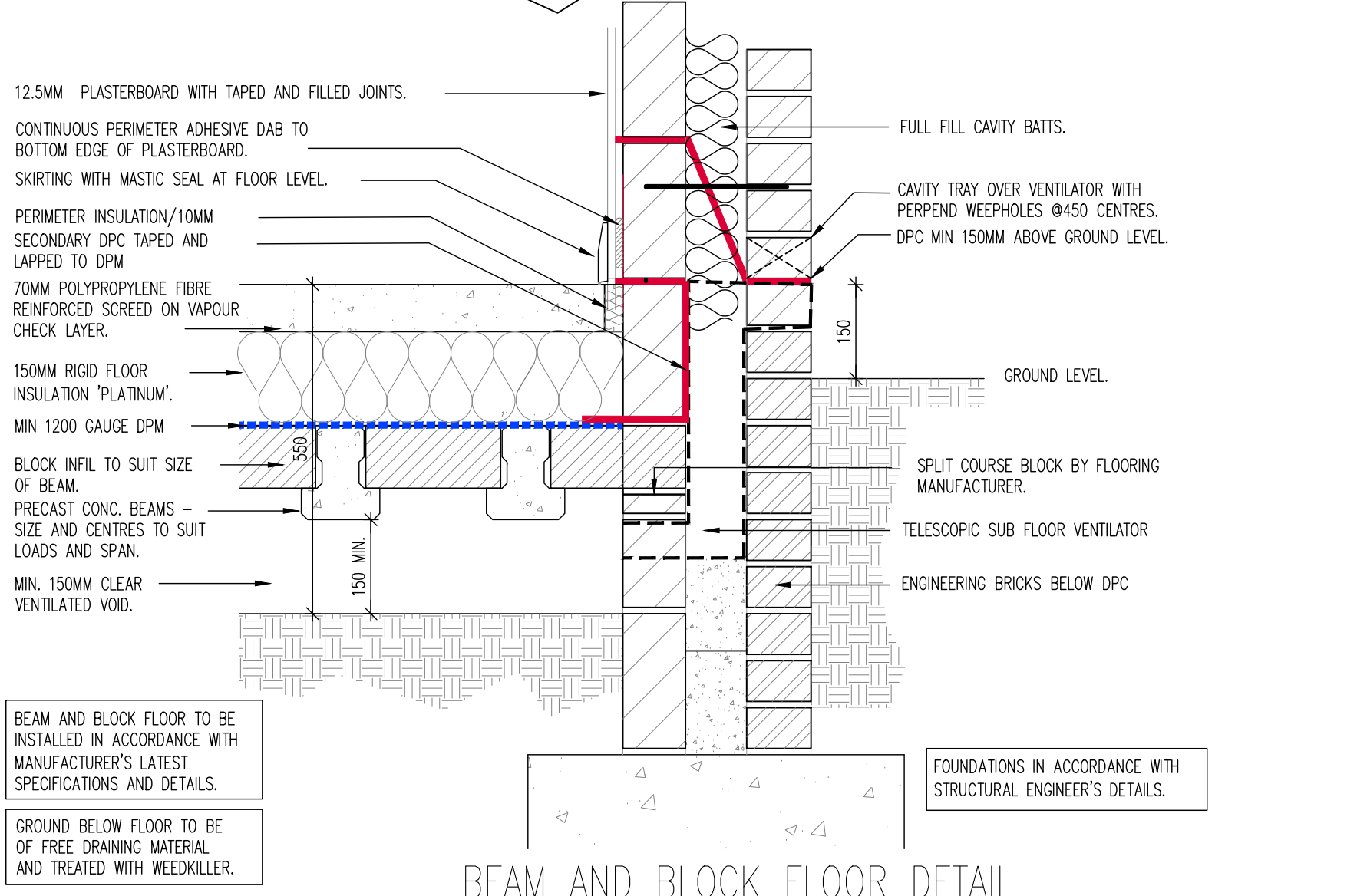
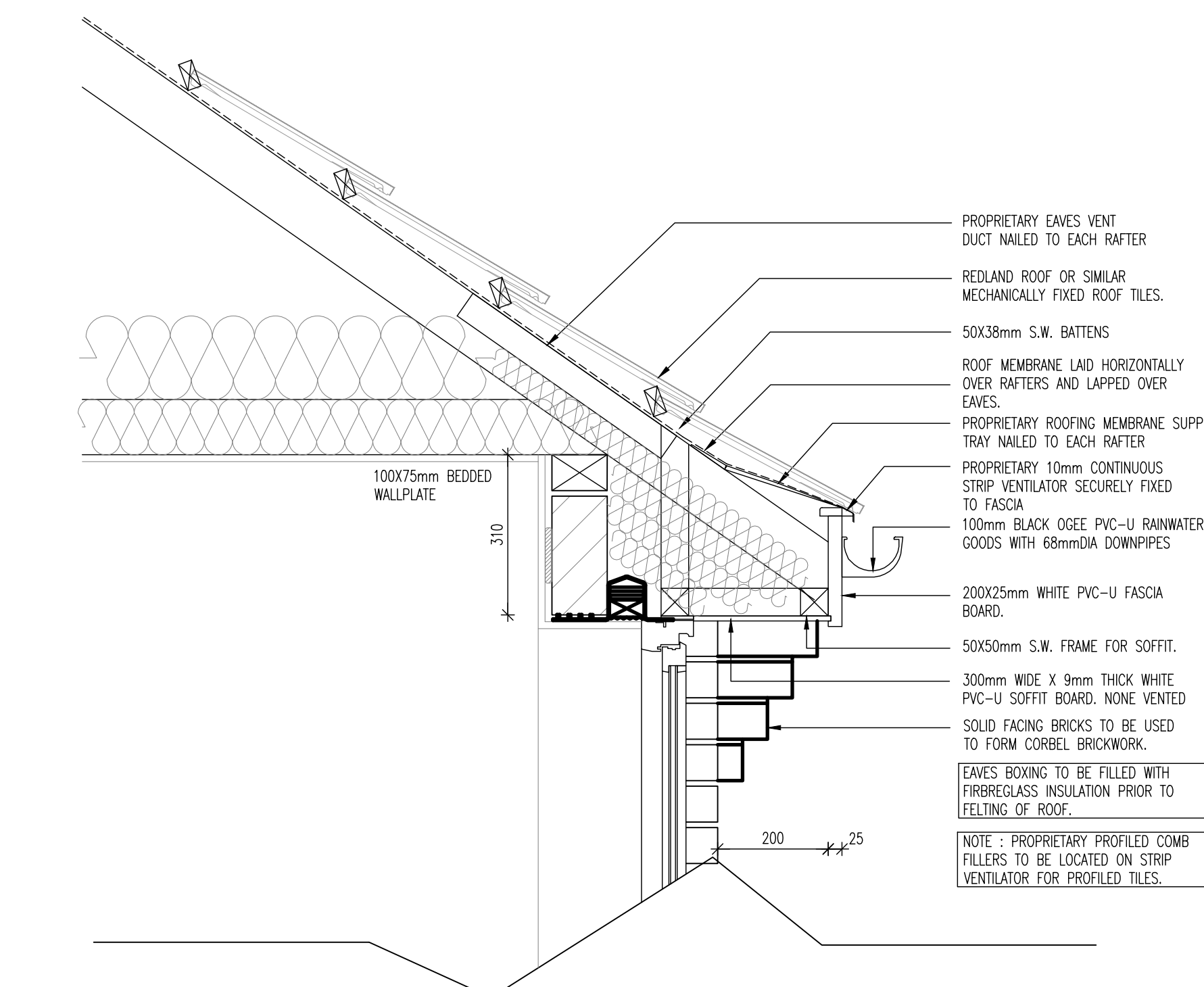


ROOF PLAN

- KEY TO WALL TYPES
- Refer to Specification for detailed technical requirements of wall types
- Facing Material
 - 27 N/mm² brick piers in class (iii) mortar
 - 100mm 4.2 N/mm² lightweight blockwork
 - 70mm Metal studs with 50mm Acoustic roll to 40db

See Engineers drawing for details of wall construction below Ground Floor F.F.L.

ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATION



BEAM AND BLOCK FLOOR DETAIL



Professionalism and Integrity in Construction

All work to be carried out in accordance with the requirements of the Building Regulations, Water Authority and the Construction (Design and Management) Regulations currently in force.

Do not scale from this drawing. Architect to be notified of any discrepancies.

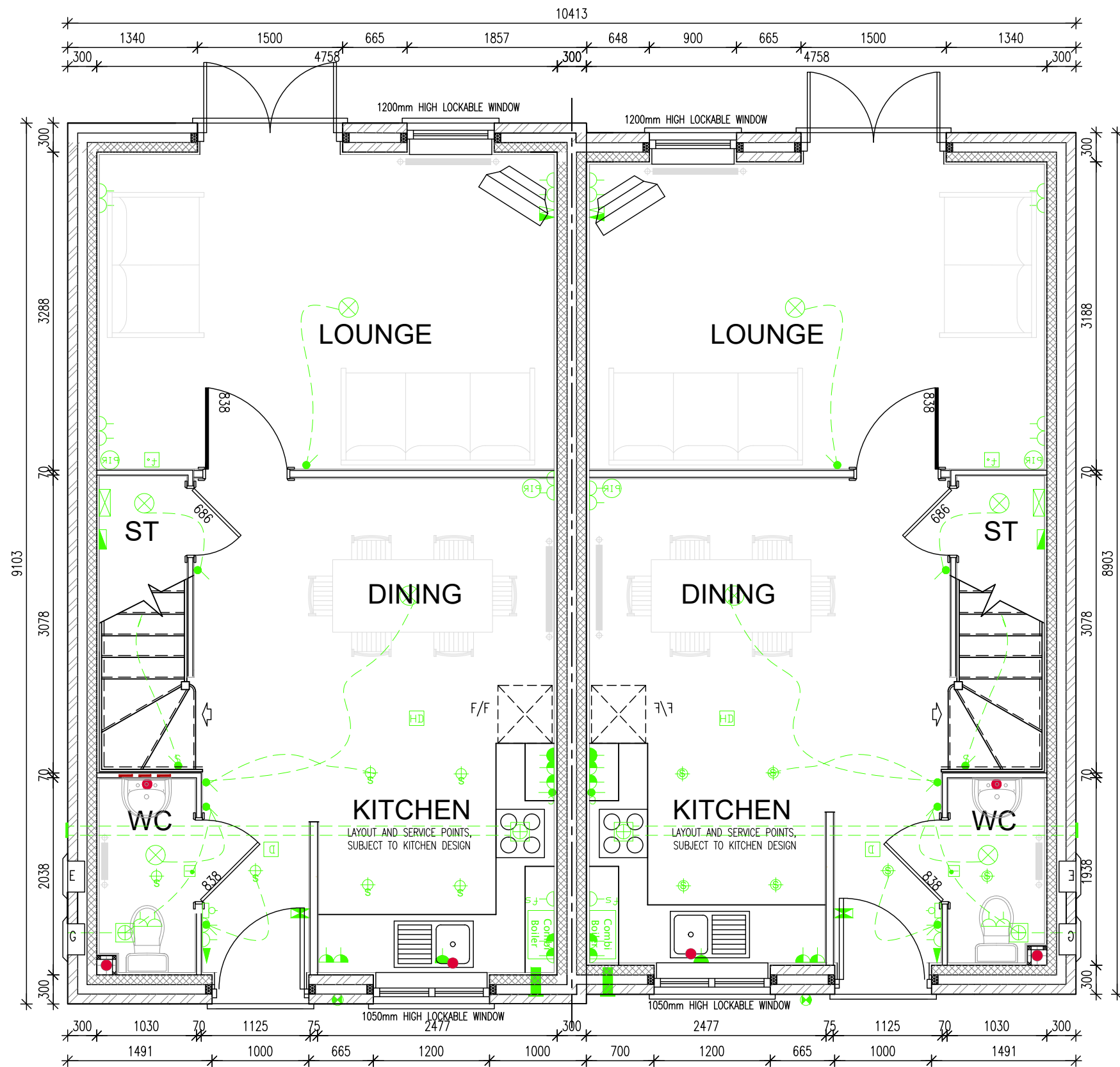
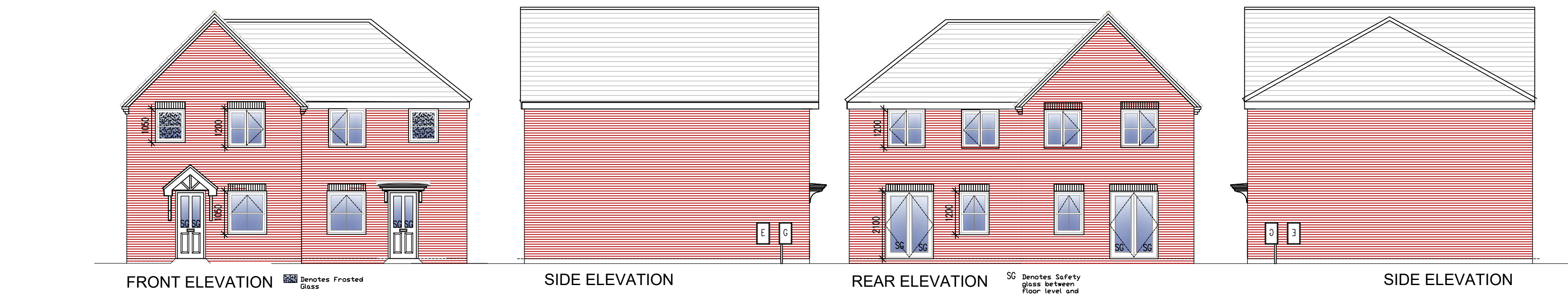
Verify relevant dimensions on site before commencing work or preparing shop drawings.

**PRELIMINARY....SUBJECT TO LABC APPROVAL
DRAWING NOT FOR CONSTRUCTION**

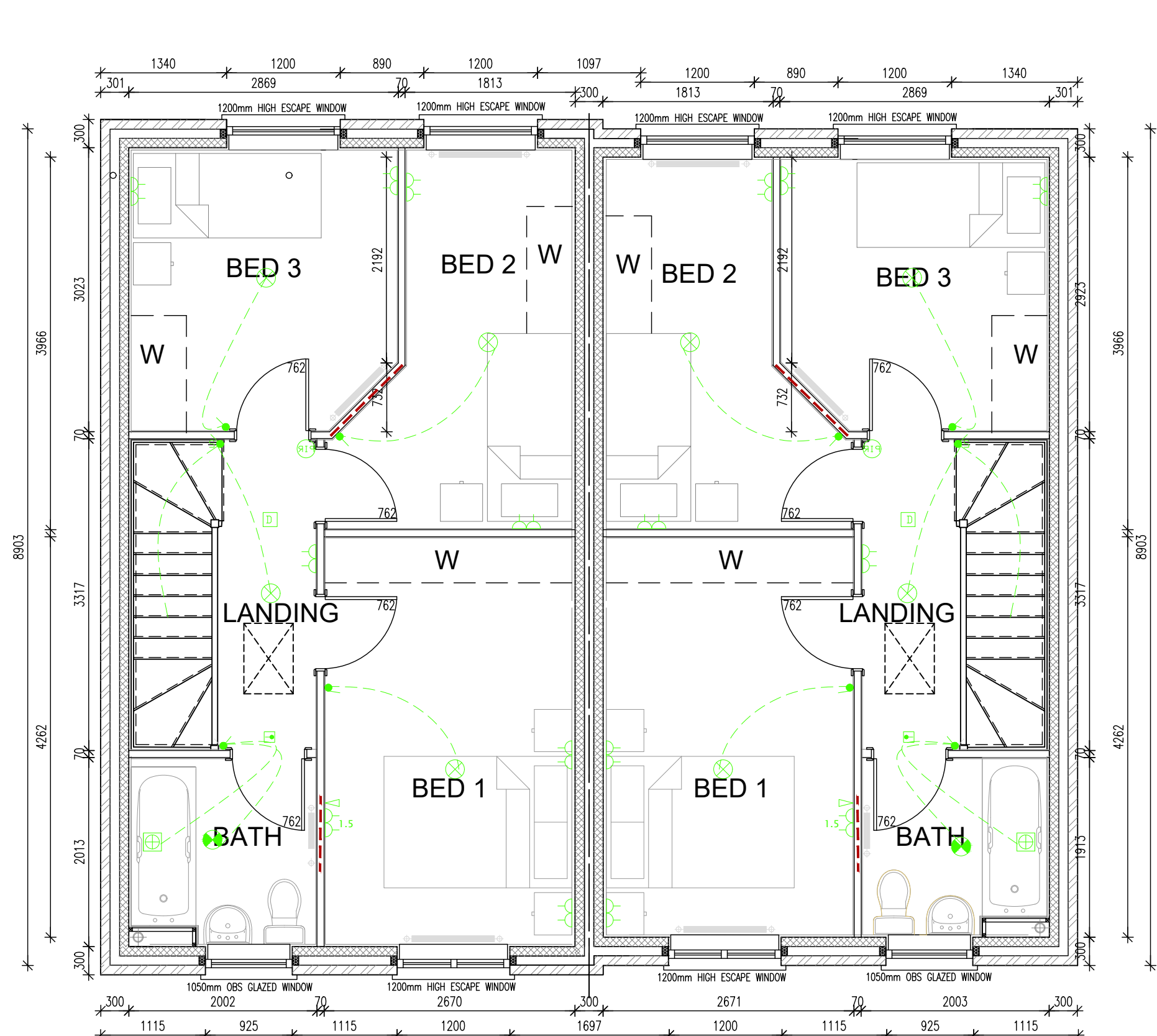
-	(IC)	Issued for Building Control	01/10/21
-	(IC)	Issued for Client Comments	08/04/21
Rev:	ISSUE	Description:	By: Date:
Rev A-Z:	ISSUES	Rev A-Z (PA) - Planning Application (BC) - Building Control Application (P) - Preliminary (IC) - For Information/Comments (A) - For Approval (C) - For Construction	(T) - For Tender

		ARCHITECTURAL DESIGN & BUILDING CONSULTANTS	
Website: www.kudosarchitecture.co.uk Email: info@kudosarchitecture.co.uk Mob: 07890 515 857 - Tel: 01709 380 947			
Project:		Proposed Development Land off: Redbrook Road, Gawber, Barnsley, S75 2RG	
Drawing:		Floor Plans and Elevations - 2 and 3 Bed Block	
Client:		Vernon Holdings	
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Scales:		Issue:	
1:50 & 1:100 @ A1		Planning	
Drawing Number:		Revision:	
RR-04		-	
		Drawn by:	
		CAG	

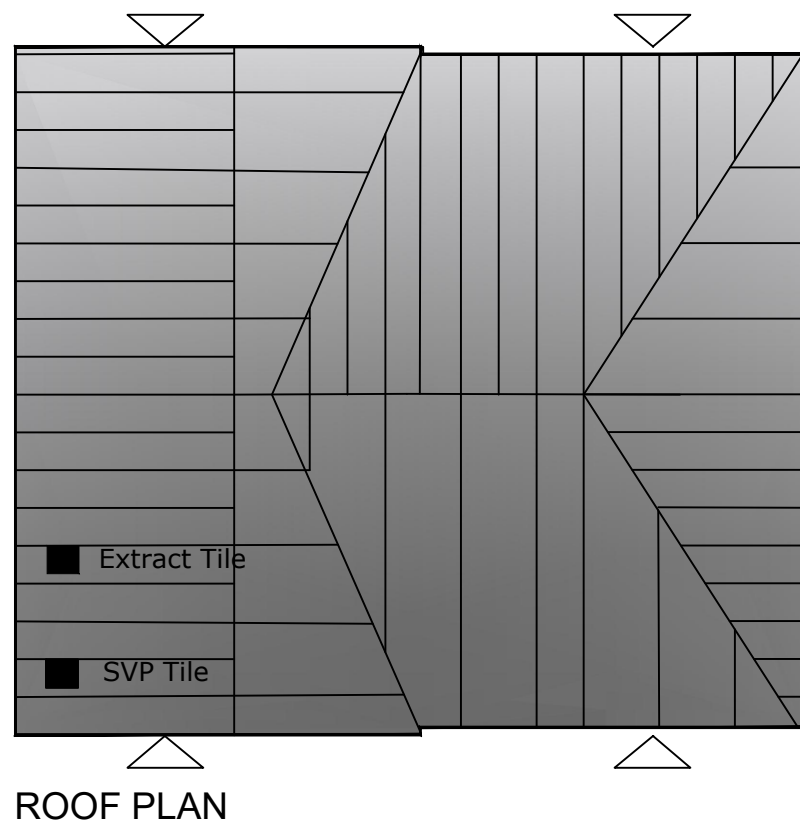
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GROUND FLOOR PLAN



FIRST FLOOR PLAN



ROOF PLAN

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- ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATION



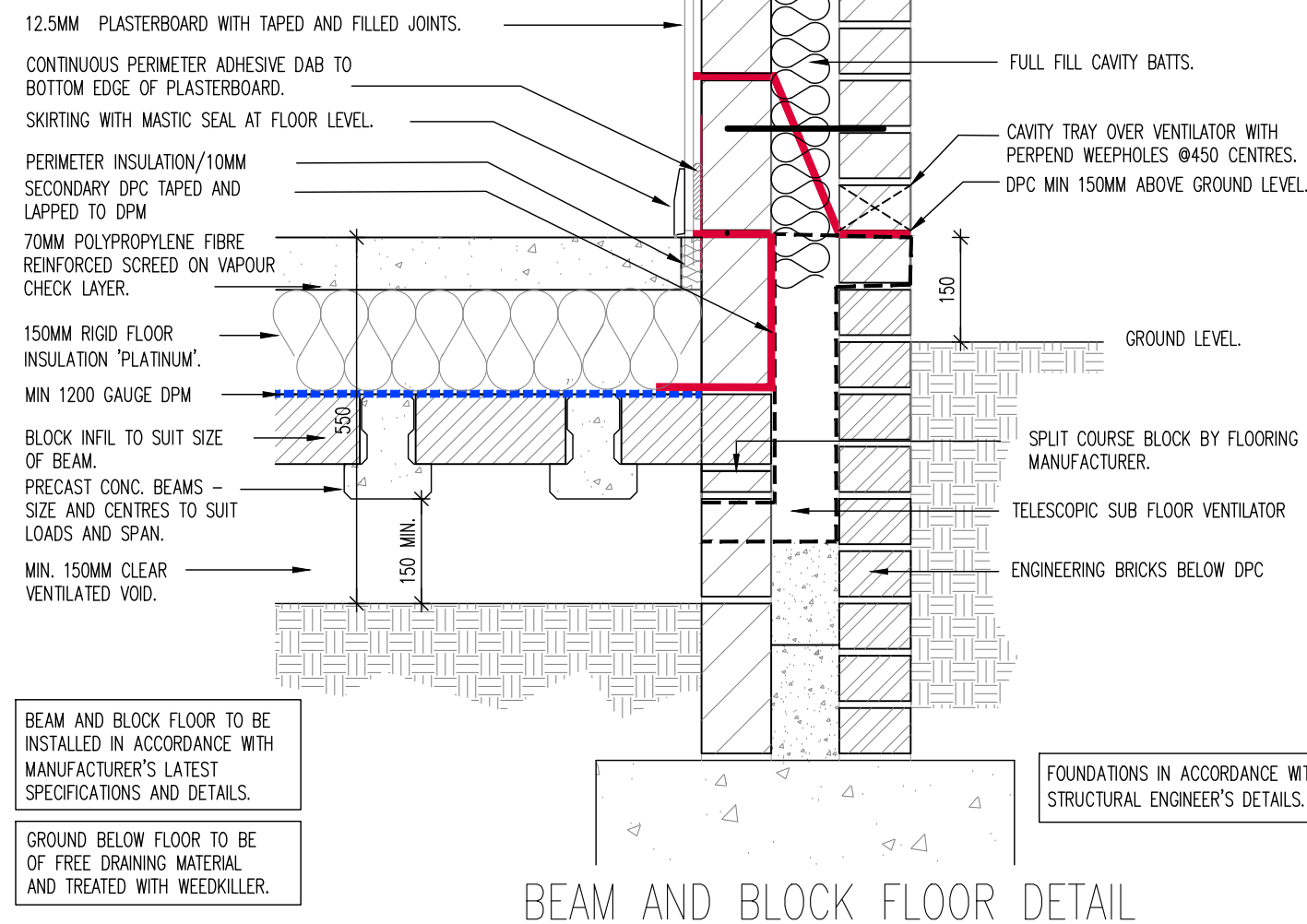
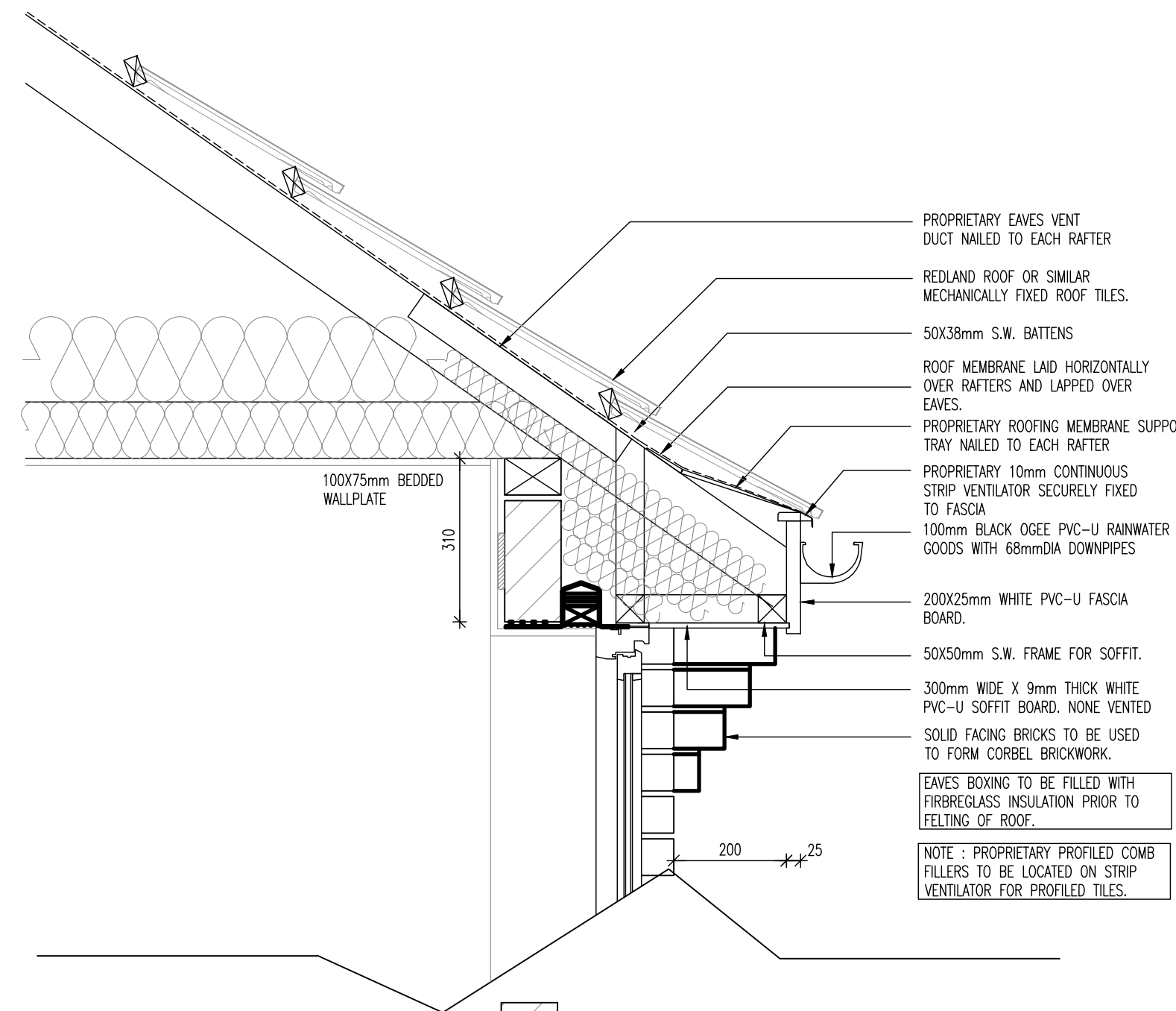
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BEAM AND BLOCK FLOOR DETAIL

-	(BC)	Issued for Building Control	01/10/21
Rev:	ISSUE	Description:	By: Date:
Rev A-Z	ISSUES	Rev A-Z (PA) - Planning Application (BC) - Building Control Application (P) - Preliminary (IC) - For Information/Comments (A) - For Approval (C) - For Construction	(T) - For Tender
 ARCHITECTURAL DESIGN & BUILDING CONSULTANTS Website: www.kudosarchitecture.co.uk Email: info@kudosarchitecture.co.uk Mob: 07890 515 857 - Tel: 01709 380 947			
Project: Proposed Development Land off: Redbrook Road, Gawber, Barnsley, S75 2RG			
Drawing: Floor Plans and Elevations - 2Nr 3 Beds			
Client: Vernon Holdings			
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Scales: 1:50 & 1:100 @ A1		Issue: Building Control	
Drawing Number: RR-02		Revision: - Drawn by: CAG	