

F G B

Fennell, Green & Bates

MINING ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

25 Smyth Street, Wakefield, West Yorkshire, WF1 1ED

T 01924 372197 **F** 01924 385559

E fgb@fgb-surveyors.co.uk **W** www.fgb-surveyors.co.uk

FCB

Fennell, Green & Bates

MINING ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

**FLOOD RISK ASSESSMENT FOR THE REDEVELOPMENT OF LAND AT
243 BURTON ROAD, MONK BRETTON, SOUTH YORKSHIRE**

ON BEHALF OF

MR W CONWAY

NOVEMBER 2008

Produced By:

**Fennell Green and Bates
25 Smyth Street
Wakefield
WF1 1ED**

**Tel: 01924 372197
Fax: 01924 385559**

FLOOD RISK ASSESSMENT FOR 243 BURTON ROAD, MONK BRETTON, BARNSLEY, SOUTH YORKSHIRE

1	INTRODUCTION.....	3
2	CURRENT SITUATION.....	3
3	INFORMATION FROM SITE VISIT.....	4
4	WATERCOURSE.....	5
5	REGIME.....	5
6	DISCUSSION.....	6
7	SUMMARY.....	9
8	LIMITS AND LIABILITY.....	11

APPENDIX A - Plans of the site

APPENDIX B - Site Photographs

FLOOD RISK ASSESSMENT FOR 243 BURTON ROAD, MONK BRETTON, SOUTH YORKSHIRE

1 INTRODUCTION

- 1.1 Mr Wilf Conway has instructed Fennell Green and Bates to assess and provide a flood risk assessment for the redevelopment of land at 243 Burton Road, Monk Bretton, Barnsley, South Yorkshire. The client is planning to redevelop the site for residential purposes to construct four detached residential dwellings.
- 1.2 The proposed development consists of four detached residential dwellings, associated hardstanding and soft landscaping. The site under investigation currently has a residential property on site and associated parking alongside soft landscaped gardens. The existing residential dwelling is proposed for demolition once Planning Permission has been granted and the site will then be redeveloped.
- 1.3 Following recent national flood events, guidelines have been developed to assist the planning authorities in situations where flooding is probable¹. The Environment Agency aims to ensure that all future developments are assessed with these guidelines in mind.
- 1.4 These planning guidelines emphasise the need to redevelop land in the flood plain rather than develop new areas. However, the restrictions on the suitability of using a particular site for any category of development in such areas, are becoming more rigid. The latest edition of PPS 25 discusses the sequential and exception test for development in flood risk areas.
- 1.5 A desk study of the site was undertaken and the Environment Agency were consulted with regard to the known flooding regime. The requirements of the guidelines have also been considered. The site is outwith of the flood risk zone and therefore the risk should be based on what effect this development will have on the water regime. The sequential and exception test are not required as the site is not within the flood zone.

2 CURRENT SITUATION

Existing Site

- 2.1 The site under investigation is of a medium size at approximately 1260m² and located directly south of Burton Road and located in Monk Bretton which is an area within the Barnsley district, South Yorkshire. The National Grid Reference is SE 3673, 0807.
- 2.2 The nearest surface water bodies to the site are small dikes and are known as Cudworth Dike and Small Bridge Dike and there is one unnamed watercourse to the south of the subject site. Cudworth Dike and Small Bridge Dike are approximately 1000m east of the site. Cudworth Dike flows in a north to southern direction and then adjoins Small Bridge Beck.

¹ Department of Transport, Local Government and the Regions
Planning Policy Statement Note 25: Development and Flood Risk 2006

- 2.3 In all directions of the site, residential dwellings and associated buildings are evident. The houses throughout Monk Bretton were constructed in the early 1900s with more development in the 1960s to the 1970s and more recently in the past five years. Further north and east of the site is agricultural land that is flat and used for cropping.
- 2.4 There is currently an existing drainage system on Burton Road due to the existing residential property on site. The surrounding area is drained due to evidence of manhole covers located on Burton Road and throughout the village. There are foul and storm water sewers on site and along the public highway.

3 INFORMATION FROM SITE VISIT

- 3.1 A site investigation was undertaken by A. Hanson of Fennell Green and Bates on 21st November 2007 to assess the level of the flood risk on the site. The weather on this occasion was fine and dry, following a period of rain.
- 3.2 The site currently consists of a stone built one storey detached bungalow with associated landscaped gardens and parking facilities on site. The existing property and garden areas are proposed for demolition if Planning Permission is granted for the redevelopment and construction of four detached residential dwellings with associated car parking and soft landscaped garden areas.
- 3.3 The nearest surface water body is a small beck to the north east of the site. This is known as Cudworth Dike. This flows from the north of Cudworth and then to the south of the village. The beck flows in a southern direction and adjoins Small Bridge Dike. This stream is located 1000m away from the site's proximity. The land to the east which is farmland would offer flood capacity in times of increased river flow, but as there are no major watercourses in very close proximity and this site is not at risk of flooding there are no issues.
- 3.4 The area of Monk Bretton is not within a flood risk zone with Cudworth Dike or Small Bridge Dike and the any other watercourses according to the Environment Agency flood risk map. The village currently has a risk of 0.1% or one in 1000 risk of being flooded from waters rising in Cudworth Dike. Please refer to plan WC/BR/FR 03.
- 3.5 The proposed development site does not offer any mitigation to flooding in the area and if there were an extreme event, the houses in the vicinity would not flood. Previous development around the site has improved the foul drainage and the small development here is designed to drain to the foul sewer on Burton Road.
- 3.6 Flooding did not occur in the recent heavy rainfall events on 15 June and 25 June 2007 or 21st January 2008 and this is due to the site being drained by sewer and the underlying strata which consists of mudstone and sandstone.

4 WATERCOURSE

- 4.1 Cudworth Dike and Small Bridge Dike are approximately 1000m east of the site. Cudworth Dike flows in a north to southern direction and then adjoins Small Bridge Beck. Once these two watercourses are combined, this watercourse then flows from the south west of Cudworth to the south east towards Grimethorpe. The watercourses adjoin easily and are able to flow continually due to the flat topography.
- 4.2 The surrounding topography consists of relatively flat land. The site is currently at 90m Above Ordnance Datum (AOD), then slopes gently to land to the east. The majority of the site is hardstanding and soft landscaping and there will be absorption of rainwater in the summer months, with up to 35% of the water being evaporated and 20% being absorbed into the soil. In the winter months, the evapo-transpiration will be less creating a slightly higher risk of ponding water and run off. There will be percolation into the underlying Oaks Rock which will allow water to percolate at the base feeding the watercourses.

5 REGIME

- 5.1 The Environment Agency shows the watercourse as being within the indicative area which may be affected by a 100 year event, i.e. the flood with a level that is statistically expected less than once every 100 years, or with a 0.1% (1 in 1000) probability of occurring in any one year. The indicative flood plain maps show that should such a flood occur, and disregarding the presence of any flood defences, any land surrounding the site would not flood. Please refer to plan number WC/BR/FR 03.
- 5.2 The land that is proposed for the development has not been flooded in living memory, and does not appear to have flooded ever. The underlying sandstone will provide storage and attenuate any flow of streams.
- 5.3 The 100 year flood has been modelled by the Environment Agency based on the levels taken on watercourses, canal and the river system, the contours of the land and benchmarks. The modelling does not take into consideration site specific levels and the flood plain can be modified by a site survey.
- 5.4 Levels from various floods over recent years were obtained from the Environment Agency. Of these, the December 2002 and the June 2007 events appear to be the most recent recorded flood to affect the area as a whole in this location, indeed in the Country.
- 5.5 On observation of the Environment Agency's Flood Map for the site and surrounding area, it can be noted that an area which is not shaded blue, is one which is low risk or no risk of flooding.
- 5.6 It should be noted that if climate change occurs, river characteristics alter or the statistical return periods are reassessed and currently the Agency use a multiplier of 2.2 x the 10 year return period for a 30 minute storm in a 30 year return period for river flow.

- 5.7 From the information obtained, it is clear that the site is outside the known flood risk zone but, as mentioned, this is based on the digital terrain models for the area and is not based on surveyed levels of the watercourse. The proposed development is sufficient distance away from the watercourse to be considered at minimal risk. It is eight metres above the watercourse and what should be considered is the development and how that may increase the flood risk to people and property on the site and in the surrounding area.

6 DISCUSSION

Planning Policy

- 6.1 It is likely that the Environment Agency and the Council's Flood Risk Officer may be concerned that any new development will be protected against flooding to at least the 100 year flood defence standard in the flood zone in Monk Bretton, the water flow regime is uninterrupted and the development will not have an adverse affect on the drainage by additional flow from the hard standing and buildings. They are unlikely to have any concerns about this site.
- 6.2 Considering the planning guidelines (PPS25), the available estimate of the 100 year flood and the fact that some is open land, the surrounding areas of the site are in the Low Risk Functional Flood Plain. Please refer to plan WC/BR/FR 03.
- 6.3 The probability of the land flooding is 0.1% (1 in 1000) or less. The location of the site falls inside the low risk barrier of flooding due to the distance and height above the nearest watercourses, which tend to be small becks.
- 6.4 It is likely that the Environment Agency would not have concerns regarding any built development in these areas, which appears to include all land within the vicinity of the watercourses and Monk Bretton outwith of Zone 2 and 3. There are no flood risk issues within the area, and around the vicinity of the village, the areas are in the white/blank areas.
- 6.5 The site, on Burton Road, is not at risk from flooding due to the distance of the watercourses and the site is on land which is raised. In addition, the access road onto the public road is also not at risk from flooding, therefore the public and vehicles will not be subjected any to flood risk. The site area is suitable for most types of development including the residential proposals, as in recent years, development in all directions has taken place, especially in the past forty years; new housing developments have taken place to the north east and west of the site.
- 6.6 Development of the site could reduce the area of permeable surface through the creation of hard standings and roofs. Due to the previous use of the land and buildings, the proposed redevelopment may not increase the total and peak run-off rates to the receiving watercourses or drains, that could cause increased flows downstream and thus increasing the risk of flooding to the surrounding region. The areas of hardstanding and roofs can be calculated to assess the surface water runoff from the houses.

- 6.7 PPS25 guidance advocates the use of sustainable drainage solutions. Mitigation measures such as allowing for permeable hard and soft surfaces should be allowed for a good design practice. The restriction and reduction of surface water run-off from new developments can be encouraged by the provision of surface water storage areas, flow limiting devices in conjunction with surface or sub-surface storage or, where ground conditions permit, the use of infiltration areas or soakaways.
- 6.8 The Environment Agency and Yorkshire Water could request that there be no increase in surface water run-off, and so some form of control may require further consideration.
- 6.9 As well as reducing total and peak flows of run-off, sustainable drainage systems can contribute substantially to good design in improving the amenity and wildlife interest of developments.
- 6.10 The roads and parking areas will have to be drained separately to the roof water as the parking areas can be contaminated with drips of fuel and other substances in the paved areas. The drainage water will have to run through gullies with traps and could be stored on site to provide some attenuation, before joining the clean water discharge to ground or drains.
- 6.11 There are to be four detached residential dwellings proposed for development. The dwellings are to be constructed over two and a half floors, which are the ground floor, first floor and the loft/void space is to be used. The application site is approximately 1260m² and this area will be used for the relevant calculations. The overall roof area is 284m² as this is the overall roof area for all four proposed dwellings combined.
- 6.12 In the proposed scheme, the hardstanding throughout the site is approximately 548 square metres of which is drained and sealed and consists of brick block paving. The roof water could run direct to a storage system and then run to the drain or be disposed of to the ground. It could be drained to the underlying sandstone by soakaways. The areas outwith of this application site are sealed and drained to sewer so the recharge will have been reduced as Monk Bretton was built on. There is also 386 square metres of soft landscaping on the proposed site which the majority is used for garden areas.
- 6.13 In the design work we need to consider the rainfall for a 30 minute event for a 30 year return and add for climate change. The multiplying factor for river flow used by the Environment Agency is 2.2 and therefore for 30 year event the water would be 44 mm, if we add 20% for climate change then the rainfall in a 30 minute event for a 30 year return period with climate change is 52mm:

$$\text{Roof Water} = 284\text{m}^2 \times 0.052 = 14.768\text{m}^3 \times 1000 = 14,769 \div 1800 = 8.21 \text{ l/s.}$$

$$\text{Hardstanding Water} = 548\text{m}^2 \times 0.052 = 28.496\text{m}^3 \times 1000 = 28,496 \div 1800 = 15.83 \text{ l/s.}$$

$$\text{Soft Landscaping} = 386\text{m}^2 \times 0.052 = 20.072\text{m}^3 \times 1000 = 20,072 \div 1800 = 11.15 \text{ l/s.}$$

6.14 From the current site, the water authority would probably limit run off per hectare from the proposed development to that existing but the total area of the site is roughly 1260 square metres, that would equate to the following in a 10 year return period storm.

6.15 In a ten-minute storm for a ten-year return period, the rainfall on the proposed development would be 20 mm.

$$\text{Roof Water} = 284\text{m}^2 \times 0.02 = 5.68\text{m}^3 \times 1000 = 5,680 + 600 = 9.47 \text{ l/s.}$$

$$\text{Hardstanding Water} = 548\text{m}^2 \times 0.02 = 10.96\text{m}^3 \times 1000 = 10,960 + 600 = 18.27 \text{ l/s.}$$

$$\text{Soft Landscaping} = 386\text{m}^2 \times 0.02 = 7.72\text{m}^3 \times 1000 = 7,720 + 600 = 12.87 \text{ l/s.}$$

6.16 In a ten minute storm for a ten-year return period the rainfall for the existing roof water run off for the existing residential property would be 20mm. The existing property is proposed for demolition. The calculation below is not calculated for climate change.

$$\text{Roof Water} = 84\text{m}^2 \times 0.02 = 1.68\text{m}^3 \times 1000 = 1680 + 600 = 2.8 \text{ l/s.}$$

6.17 In a thirty minute storm for a thirty-year return period the rainfall for the existing roof water run off for the existing residential property would be 44mm. The calculation below is not calculated for climate change.

$$\text{Roof Water} = 84\text{m}^2 \times 0.044 = 3.696 \times 1000 = 3696 + 1800 = 2.05 \text{ l/s.}$$

6.18 As the current water run off if we consider 50% of the plot to be drained and sealed concrete will be $1260\text{m}^2 \times 0.020$ for a ten minute storm = 25.2 cubic metres + 2 = 12.6 , the excess water will be disposed of via the combined sewer through the rainfall pipe gullies of the road gullies at rate of 23 l/s.

6.19 The proposed roof and car parking area could have storage equivalent to 7m x 1.5m x 1.5m. There are numerous systems for collection and storage such as concrete tanks with outlet pipes or a suburban drainage system that uses plastic mesh boxes to support the sides and allow water storage.

6.20 A drainage system can be designed to accommodate the storm water and this may require some site investigation and soakaway tests. Taking a 30 minute storm for a thirty year return period is 35.19 cubic metres (refer to paragraph 6.13), then the underlying Oaks Rock is $1260\text{m}^3 \times 10\text{m} = 12,600\text{m}^3$ if we take 10% of that volume as being able to store water then the capacity of the strata is 12,600 cubic metres.

6.21 Soakaways storage could be designed in the site to accept roof water from the houses. There may be some above ground storage for the roof water to be used for the gardens and toilet flushing but this would have to be considered at design stage.

6.22 The soakaways storage, if on rock head, can be backfilled with lump stone and covered with a geotextile membrane and flow to ground. The storage could be a trench alongside the car park area.

- 6.23 The soakaways can either be filled with coarse rockery/aggregate such as sandstone or limestone lumps from a nearby quarry or the egg crate structures to provide more volume.
- 6.24 The underlying solid geology of the site is part of the Middle Coal Measures Formation which is of the Westphalian age. The Westphalian age is a stratigraphic stage name for European strata of the Upper Carboniferous period.
- 6.25 The strata underlying the site is Oaks Rock which is predominantly a sandstone. The Oaks Rock is a younger rock associated with the Swinton Pottery Coal and extends eastwards and the direction of younger rock suggests a north east dip direction. The Oaks Rock is a small to medium grained moderately to strong yellow sandstone and can be up to 8m thick. Minor mudstone will be present as this is associated with the Carboniferous period and it has impermeable characteristics. Rocks of this age tend to be faulted due to the tectonic movement which formed the Pennine uplift. It is likely that a sandstone strata will have a permeability of 1x10⁻⁵ metres per second found in other sandstone in the north of England so the water will flow away if placed in the sandstone.
- 6.26 As is typical with the Carboniferous Period, the area has been subjected to much faulting, all apparently from one period of tectonic activity. Within 1000m of the sites proximity, there are a number of faults evident. Although the nearest fault lies to the north of the site, this strikes in a west to north eastern direction at approximately a 20° angle. Although there are many faults close to the site, there is no evidence of the faults running through the site.
- 6.27 Storm water from the development could be placed to ground via soakaways or storage to mitigate flow to the foul sewer. The site can be drained to the sewer though as there is no excess run off from this proposal.
- 6.28 The amount of rainfall draining to the combined sewer from the proposed development when compared with the existing property is the same or less and Yorkshire Water should have no concerns about storm water drainage from this site as there is no greater on the system.

7 SUMMARY

- 7.1 The small watercourses which are Cudworth Dike and Small Bridge Dike River Calder do not pose a significant flood risk to the site. The Environment Agency shows the land as being outside the indicative area which may be affected by a 100-year event, i.e. the flood with a level that is statistically expected once every 100 years, or with a 0.1% probability of occurring in any one year.
- 7.2 The site has a low probability of flooding and development in all directions of the site has taken place indicating further that the area within Monk Bretton is suitable for construction purposes.
- 7.3 The proposed development should not affect the flood risk or the capacity of the watercourses. By installing soakaways and storage into the design, this will be further ensured and water will flow through the underlying sandstone. The water drained off the roofs could run into the soakaways constructed for the apartments and be discharged to ground, or to the sewer system at a rate not exceeding that permitted by the current development.

- 7.4 The foul water from the residential dwellings should be routed to foul water system and the volume appears to be the same due to the existing development on site.
- 7.5 The nearest watercourse, Cudworth Dike, does not pose a flood risk to the site and the proposed development does not pose any further increase in flood risk within the surrounding area. Surface water run off will be produced on the development but this can easily be disposed off site.

Foul Water –

- 7.6 The foul water make consists of washing and toilet facilities and we can assume that each occupant will use up to 100 litres per day. The development is for four residential dwellings which will accommodate up to approximately four persons per house; hence the foul water will be up to 1600 litres per day. The properties will be drained to the foul sewer on Burton Road by drain runs from each system.
- 7.7 The storm water from the roof of the existing property is up to 3 litres per second and the hardstanding water is 21 litres per second and this will be drained to ground via rainwater swales and soakaways into the sandstone.
- 7.8 If the proposed development routes the roof and hardstanding water to storage and then disposes the water to the Oaks Rock there will be no increase in the combined foul and hardstanding water flow to the existing sewer in Burton Road.

8 LIMITS AND LIABILITY

Fennell Green and Bates have produced this report on the site at 243 Burton Road, solely for the use of the client and his professional advisor on matters appertaining to the planning conditions that allow redevelopment of the site for residential dwellings. Both the findings and opinions expressed within the report are relevant to the period of site visit and data supplied; they therefore should not be relied upon at a later date. No part of report may be reproduced or relied upon by any third party who may subsequently advise the client or undertake his own investigation without the prior written consent of Fennell Green and Bates. It is recommended that any other potential developer consult with the writer of this report prior to undertaking any site investigation work as the contents of this report cannot be relied upon for the design of a site investigation.



A L Hanson
Environmental Engineer

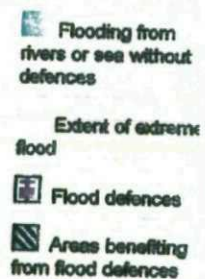


Eur Ing J Carlon (Hons) C.Eng, CEnv, MIMM MRICS MIQ MCIWM
Principal Consulting Engineer

Date: November 2008

Job No: 08-10-1193B

**APPENDIX A –
Plans of the site**

[illegible]

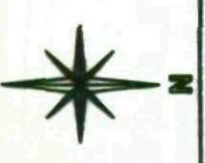


REVISIONS

No.	Date	Description	By
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

LEGEND

- Proposed Development
- Existing Development
- Water
- Highway
- Road
- Footpath
- Boundary
- Field
- Wood
- Grass
- Shrub
- Tree
- Building
- Structure
- Other



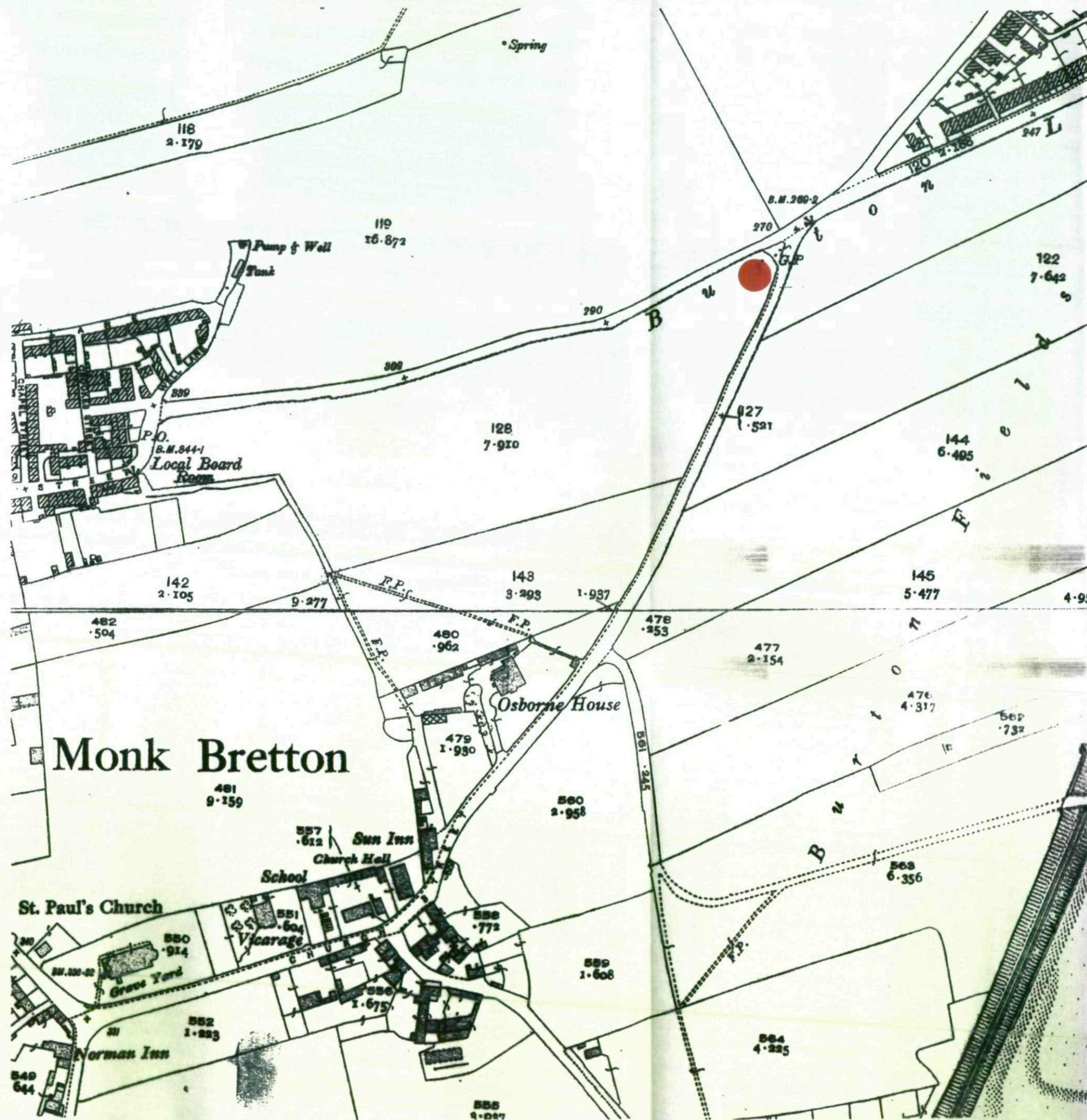
FGB Fennell, Green & Bates

243 Burton Road, North London
Flood Risk Assessment
1872 GEOLOGICAL PLAN

MR WILF CONWAY

1872 GEOLOGICAL PLAN

WCB/RGEO_04_00



Date	Description	By

Legend:

— Planning Permission Area	— Boundary/Tier
— Land Under Consideration	— Boundary/Tier
— Top of Bank	— Boundary/Tier
— Top of Bank Top	— Boundary/Tier
— Bottom of Bank	— Boundary/Tier
— Road	— Boundary/Tier
— Track	— Boundary/Tier
— Vign	— Boundary/Tier
— Fence Type 1	— Boundary/Tier
— Fence Type 2	— Boundary/Tier
— Fence Type 3	— Boundary/Tier
— Fence Type 4	— Boundary/Tier
— Fence Type 5	— Boundary/Tier
— Fence Type 6	— Boundary/Tier
— Fence Type 7	— Boundary/Tier
— Fence Type 8	— Boundary/Tier
— Fence Type 9	— Boundary/Tier
— Fence Type 10	— Boundary/Tier
— Fence Type 11	— Boundary/Tier
— Fence Type 12	— Boundary/Tier
— Fence Type 13	— Boundary/Tier
— Fence Type 14	— Boundary/Tier
— Fence Type 15	— Boundary/Tier
— Fence Type 16	— Boundary/Tier
— Fence Type 17	— Boundary/Tier
— Fence Type 18	— Boundary/Tier
— Fence Type 19	— Boundary/Tier
— Fence Type 20	— Boundary/Tier
— Fence Type 21	— Boundary/Tier
— Fence Type 22	— Boundary/Tier
— Fence Type 23	— Boundary/Tier
— Fence Type 24	— Boundary/Tier
— Fence Type 25	— Boundary/Tier
— Fence Type 26	— Boundary/Tier
— Fence Type 27	— Boundary/Tier
— Fence Type 28	— Boundary/Tier
— Fence Type 29	— Boundary/Tier
— Fence Type 30	— Boundary/Tier
— Fence Type 31	— Boundary/Tier
— Fence Type 32	— Boundary/Tier
— Fence Type 33	— Boundary/Tier
— Fence Type 34	— Boundary/Tier
— Fence Type 35	— Boundary/Tier
— Fence Type 36	— Boundary/Tier
— Fence Type 37	— Boundary/Tier
— Fence Type 38	— Boundary/Tier
— Fence Type 39	— Boundary/Tier
— Fence Type 40	— Boundary/Tier
— Fence Type 41	— Boundary/Tier
— Fence Type 42	— Boundary/Tier
— Fence Type 43	— Boundary/Tier
— Fence Type 44	— Boundary/Tier
— Fence Type 45	— Boundary/Tier
— Fence Type 46	— Boundary/Tier
— Fence Type 47	— Boundary/Tier
— Fence Type 48	— Boundary/Tier
— Fence Type 49	— Boundary/Tier
— Fence Type 50	— Boundary/Tier
— Fence Type 51	— Boundary/Tier
— Fence Type 52	— Boundary/Tier
— Fence Type 53	— Boundary/Tier
— Fence Type 54	— Boundary/Tier
— Fence Type 55	— Boundary/Tier
— Fence Type 56	— Boundary/Tier
— Fence Type 57	— Boundary/Tier
— Fence Type 58	— Boundary/Tier
— Fence Type 59	— Boundary/Tier
— Fence Type 60	— Boundary/Tier
— Fence Type 61	— Boundary/Tier
— Fence Type 62	— Boundary/Tier
— Fence Type 63	— Boundary/Tier
— Fence Type 64	— Boundary/Tier
— Fence Type 65	— Boundary/Tier
— Fence Type 66	— Boundary/Tier
— Fence Type 67	— Boundary/Tier
— Fence Type 68	— Boundary/Tier
— Fence Type 69	— Boundary/Tier
— Fence Type 70	— Boundary/Tier
— Fence Type 71	— Boundary/Tier
— Fence Type 72	— Boundary/Tier
— Fence Type 73	— Boundary/Tier
— Fence Type 74	— Boundary/Tier
— Fence Type 75	— Boundary/Tier
— Fence Type 76	— Boundary/Tier
— Fence Type 77	— Boundary/Tier
— Fence Type 78	— Boundary/Tier
— Fence Type 79	— Boundary/Tier
— Fence Type 80	— Boundary/Tier
— Fence Type 81	— Boundary/Tier
— Fence Type 82	— Boundary/Tier
— Fence Type 83	— Boundary/Tier
— Fence Type 84	— Boundary/Tier
— Fence Type 85	— Boundary/Tier
— Fence Type 86	— Boundary/Tier
— Fence Type 87	— Boundary/Tier
— Fence Type 88	— Boundary/Tier
— Fence Type 89	— Boundary/Tier
— Fence Type 90	— Boundary/Tier
— Fence Type 91	— Boundary/Tier
— Fence Type 92	— Boundary/Tier
— Fence Type 93	— Boundary/Tier
— Fence Type 94	— Boundary/Tier
— Fence Type 95	— Boundary/Tier
— Fence Type 96	— Boundary/Tier
— Fence Type 97	— Boundary/Tier
— Fence Type 98	— Boundary/Tier
— Fence Type 99	— Boundary/Tier
— Fence Type 100	— Boundary/Tier

FG B Fennell, Green & Bates
 FENNELL, GREEN & BATES
 25 Brough Street
 Wakefield
 West Yorkshire
 WF1 1ED
 Tel: 01924 372187
 Fax: 01924 385555
 e-mail: fgb@fgb-surveyors.co.uk

Client
 MR WILF CONWAY

Site Name
 243 Burton Road, Monk Bretton

Project Title
 Flood Risk Assessment

Date	1-2000	1-2000	1-2000	1-2000
By	ALM	ALM	ALM	ALM

Dep. No.
 1831 HISTORICAL PLAN

Scale
 WC/BR/HP 05 00



REVISIONS		
Date	Description	By

Legend:

Planning Permission	Land Under Development	Top of Bank	Top of Valley	Bottom of Bank	Foot	Track	Vegetation	Fence Type 1	Fence Type 2	Fence Type 3	Gate	Playground	Cricket Ground	Public	100m Contour	Distance Scale

FGB Fennell, Green & Bates
 25 Smyth Street, Wakefield, West Yorkshire WF1 1ED
 Tel: 01924 372197
 Fax: 01924 389999
 e-mail: fgb@fgb-surveyors.co.uk

Client:
MR WILF CONWAY

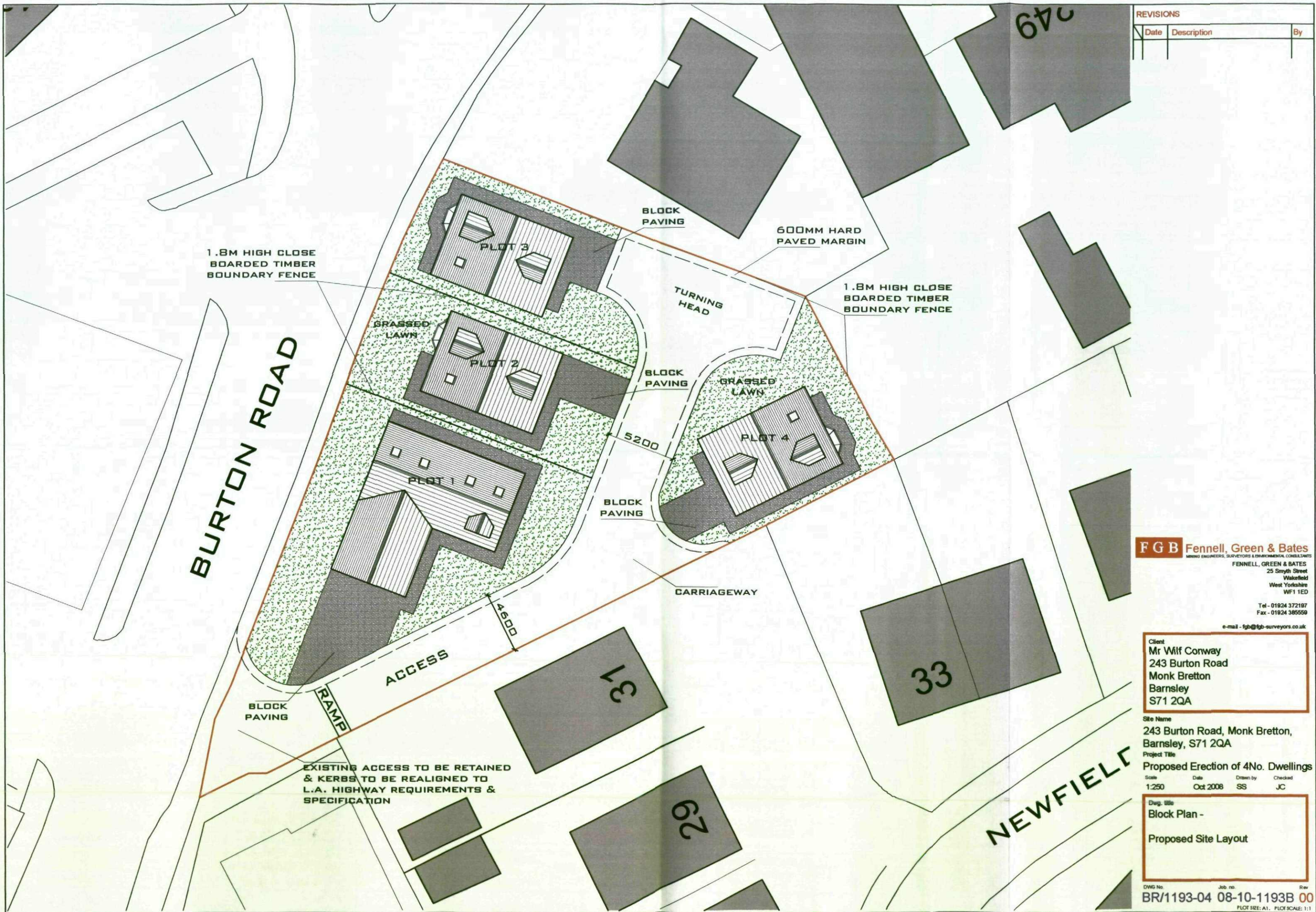
Site Name:
243 Burton Road, Monk Bretton

Project Title:
Flood Risk Assessment

Date	11/08/08	Drawn	ALH	Checked	JC
------	----------	-------	-----	---------	----

Map Title:
1885 HISTORICAL PLAN

DWG No: WC/BR/HP **07** **00**



REVISIONS		
Date	Description	By

F G B Fennell, Green & Bates
MINING ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS
FENNELL, GREEN & BATES
25 Smyth Street
Wakefield
West Yorkshire
WF1 1ED
Tel - 01924 372197
Fax - 01924 385550
e-mail - fgb@fgb-surveyors.co.uk

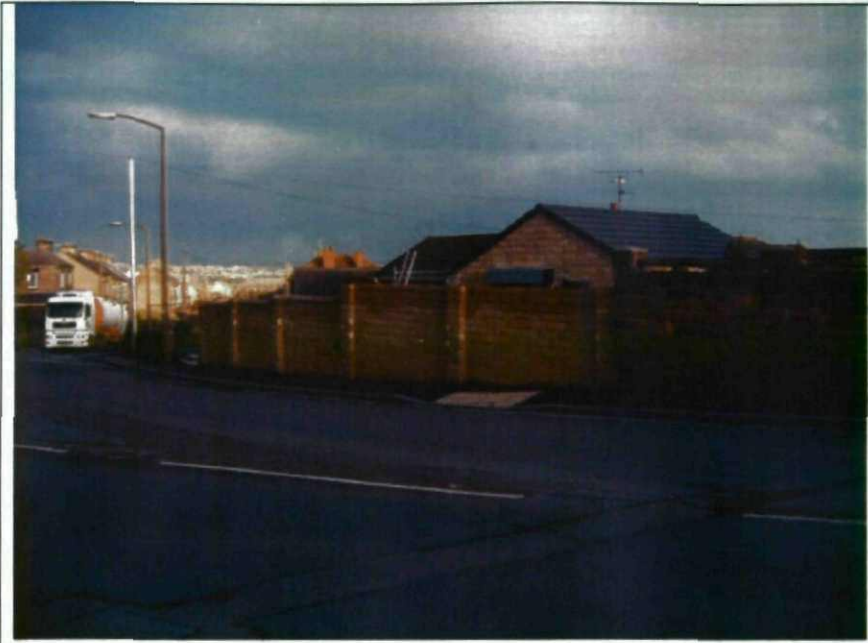
Client
Mr Wilf Conway
243 Burton Road
Monk Bretton
Barnsley
S71 2QA

Site Name
243 Burton Road, Monk Bretton,
Barnsley, S71 2QA
Project Title
Proposed Erection of 4No. Dwellings
Scale 1:250 Date Oct 2008 Drawn by SS Checked JC

Dwg. title
Block Plan -
Proposed Site Layout

DWG No. BR/1193-04 08-10-1193B 00
Job no. 08-10-1193B 00
Rev
PLOT SIZE: A1. PLOT SCALE: 1:1

**APPENDIX B –
Site Photographs**

243 BURTON ROAD, MONK BRETTON –**SITE PHOTOGRAPHS NOVEMBER 2007**

Photograph 1 – The above shows Burton Road in the foreground and part of the boundary wall to the existing property.



Photograph 2 – Again, the photograph shows the boundary of the site in the foreground and in the background what can be seen of the existing property.



Photograph 3 – The above shows the existing tarmacadam driveway which leads to the house from the gates.



Photograph 4 – The boundary wall to the right hand side of the entrance upon entering the site.



Photograph 5 – The boundary wall to the left hand side of the entrance upon entering the site. This boundary is adjacent to Burton Road.



Photograph 6 – The above shows the driveway and a small-concreted area to the left hand side of the driveway.



Photograph 7 – Above is the existing property which is on site, which is proposed for demolition once redevelopment takes place.



Photograph 8 – Showing a more detailed view of the small-concreted area on site to the left of the access.



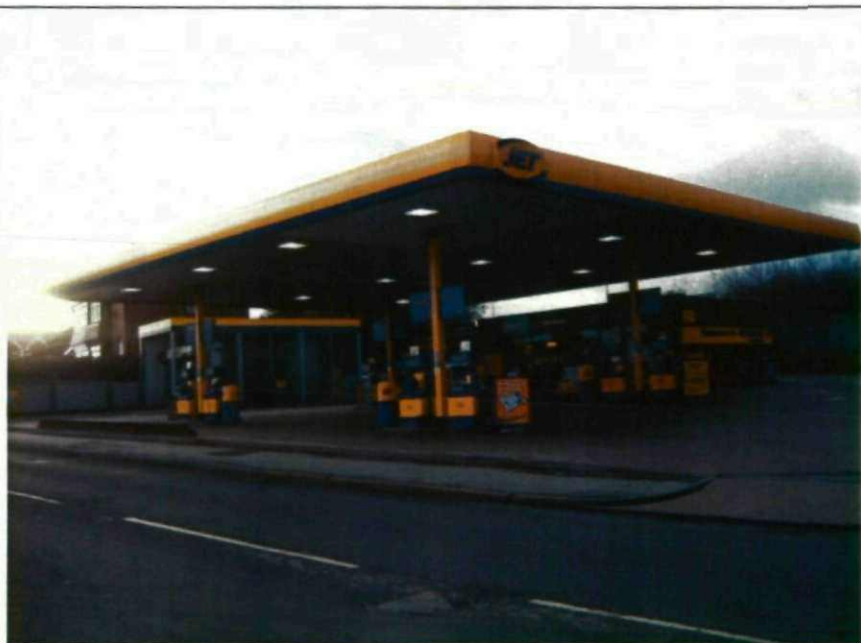
Photograph 9 – The above shows the side elevation and existing landscaped gardens on site.



Photograph 10 – Burton Road looking in a southern direction.



Photograph 11 – Burton Road looking in a northern direction.



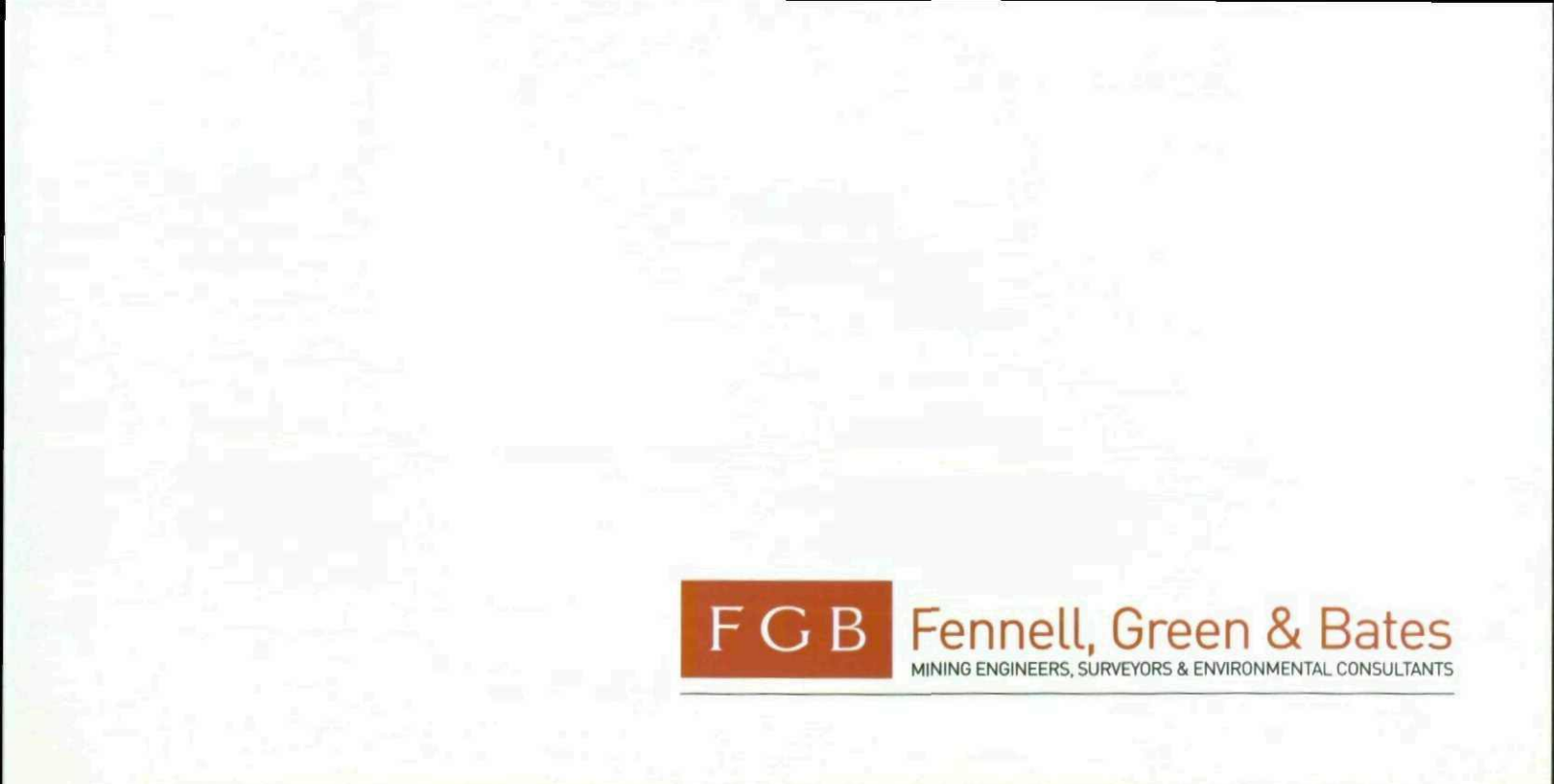
Photograph 12 – The above shows a fuel station adjacent to the existing site located on Burton Road.



Photograph 13 – Outside the north west boundary of the site on Burton Road was a manhole which indicates existing drainage channels.



Photograph 14 – Again, outside the north west boundary of the site on the pavement adjacent to Burton Road was another manhole.



F G B

Fennell, Green & Bates

MINING ENGINEERS, SURVEYORS & ENVIRONMENTAL CONSULTANTS

MINING ENGINEERS,
SURVEYORS & VALUERS

Unrivalled Professional Expertise