TECHNICAL NOTE

Transportation Planning : Infrastructure Design

Wilthorpe, Barnsley

Assessment of Roundabout Access

GWB/14901/TN01 - 30 October 2014 Rev A

INTRODUCTION

1. This Technical Note is written to consider the possibility of providing a roundabout junction to access the proposed residential development at Wilthorpe Road, Barnsley.

2. In the first instance, Persimmon Homes considered the possibility of providing a roundabout layout of an appropriate scale but concluded that the layout was unsafe, could not comply with design standards and nor could it pass a Road Safety Audit.

3. The site specific constraints on the roundabout are (i) the limited length of site frontage on to A635 Wilthorpe Road, (ii) the absence of the land within the applicant's control on the opposite side of Wilthorpe Road and (iii) a level difference of some 4 m between the existing road levels and the site.

4. Subsequently, Barnsley Council officers provided an alternative, preliminary roundabout design with a much bigger central island.

5. The plan at **Appendix 1** shows Barnsley's proposed roundabout design overlaid onto the site layout which was recommended for approval at the meeting of Planning Board on the 23rd September 2014.

APPRAISAL OF DRAFT BARNSLEY COUNCIL ROUNDABOUT DESIGN

6. SCP have reviewed the draft design provided by Officers of Barnsley Council to Persimmon Homes. This includes for a very much larger central island and raises the following issues:

- Amenity of existing residents.
- Impact on scheme layout and S106 package
- Further engineering works.

7. Amenity of Existing Residents

8. Introducing a roundabout at the proposed location alters the alignment of the A635. The result of this is that Wilthorpe Road is nearer to existing properties on Wilthorpe Farm Road and Wilthorpe Road itself.

9. The impact of this realignment has not been tested in detail. However it is anticipated that the following matters would need to be considered:

- Noise – particularly with respect of through traffic on Wilthorpe Road having to brake on the approach to the roundabout and accelerate when leaving the roundabout.
- Air Quality.
- Road safety in general and the safety of pedestrians crossing Wilthorpe Road in this location.
- Land Compensation Act.

10. Impact On Scheme Layout and S106 Package

11. The roundabout design has clear implications for the scheme layout as currently proposed. Persimmon Homes estimate that 10 – 15 plots will be lost as a result of the new roundabout proposed by Barnsley Council. This is either as a result of the roundabout and access road utilising land previously shown for new houses, or through the required change in levels to ensure the road meets maximum access road gradients of 1 in 12.

12. The loss of 15 plots would result in the following reduction of S106 benefits:

- Number of affordable homes on site reduce by 2 (to 43)
- Off-site affordable contribution reduced by £68,252 (to £989,650)
- Education contribution reduces by £21,072 (to £400,368)

- Reduction in POS contribution costing by circa £14,500 (cannot quantify without reviewing amended housing mix). It would also impact on the costings for the tennis courts.

13. **Further Engineering Works Required**

14. The scheme proposals for the roundabout as shown would require additional engineering works over and above those which have previously been proposed in the planning application.

15. The more obvious of these works relates to the access road and provision of roundabout with associated earthworks and creation of earth retaining structures.

16. There is also the potential for the roundabout works to impact on the culvert of the adjacent beck, which runs under Wilthorpe Road. This has not been explored in detail.

17. **Site Boundary**

18. The proposed roundabout extends beyond the site boundary onto Third Party Land which lies south side of the application boundary on land which is not within the control of Persimmon Homes.

19. **Design Standards**

20. The current scheme does not meet current design standards. However, it is accepted that the design is a draft layout and it may be possible to meet standards as a result of more detailed design work.

21. **Other Issues**

22. The size of the roundabout and the associated embankment would have a significant visual impact and would impact on the housing layout.

23. The cost of providing the roundabout alone is of the order of £350,000. This, associated with as yet unknown costs associated with the loss of plots, the potential for further engineering works and any claims under the Land Compensation Act could potentially make the site unviable.

24. The roundabout solution is unsustainable, provides far more capacity than is needed and has a far greater impact than necessary.

25. When compared with the proposed ghost island junction, the roundabout alternative would unnecessarily delay through traffic on A635 whereas the ghost island junction does not impact on through traffic.

PROPOSED JUNCTION SOLUTION

26. Following the September 23rd 2014 meeting of Planning Board and discussions with officers, SCP has taken the opportunity to review the previously proposed right turn ghost island junction layout.

27. Whilst the original layout meets design standards and has considerable spare capacity, it is understood that there is some concern relating to the safety of right turners leaving the site and potential for queuing on exit during the morning and evening peak hours.

28. This issue has been addressed by an amended ghost island junction as shown at **Appendix 2**. This will include for the widening of the access road on the approach from the development to Wilthorpe Road to provide segregated lanes for exiting traffic. Hence vehicles waiting to turn 'right out' will not delay vehicles waiting to turn 'left out' and vice versa.

29. The improved ghost island junction accords with guidance, it has even more spare capacity than the original access proposals and would pass a Road Safety Audit.

30. Guidance in 'Manual for Streets' confirms that a development of this size is capable of being served by a single access.

CONCLUSION

31. Following the presentation of the scheme to the 23rd September meeting of Planning Board, the concerns expressed by Members have been reviewed by both Officers and SCP on behalf of Persimmon Homes. SCP proposed a design which does not comply with design standards or Road Safety Audit criteria.

32. Officers of Barnsley Council produced a draft design for a roundabout (Appendix 1) scheme and Persimmon Homes have commented that this option has a considerable

impact on amenity, the number of units proposed, the S106 contributions and construction cost.

33. Persimmon Homes propose that the concerns of Members can be addressed through the provision of an additional lane for traffic leaving the site i.e. segregated lanes for left and right turning traffic. This is shown on drawing at **Appendix 2**.

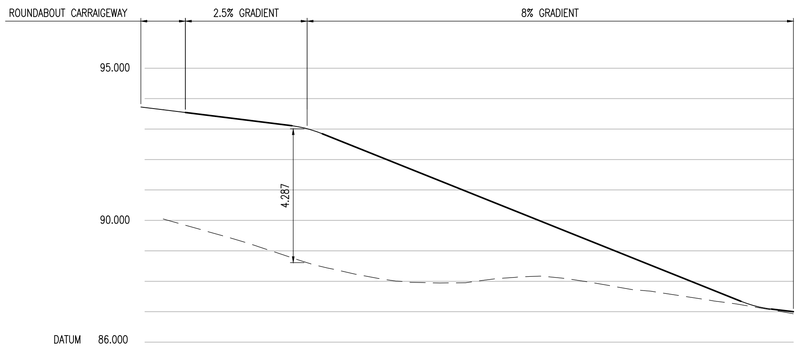
34. The design meets all highways standards and represents a safe junction solution suitable for a scheme of 301 homes accessed via Wilthorpe Road. The junction will operate in a similar manner to the existing Dayhouse Way / Wilthorpe Road junction, to the west of the site.

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APPENDIX 1

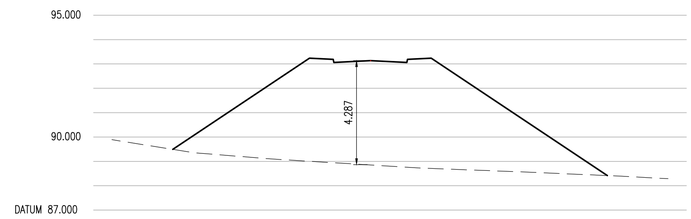


PLAN
SCALE – 1:500



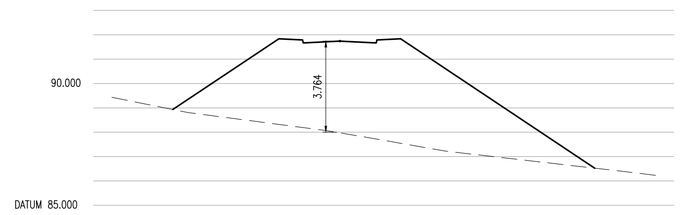
CHAINAGE	0.000	20.000	40.000	60.000	80.000	100.000
EXISTING LEVEL	90.049	88.851	87.975	88.160	87.675	87.056
ALIGNMENT LEVEL		93.138	91.739	90.139	88.539	87.084

LONGITUDINAL SECTION A–A
SCALE – 1:500 HORIZONTAL, 1:100 VERTICAL



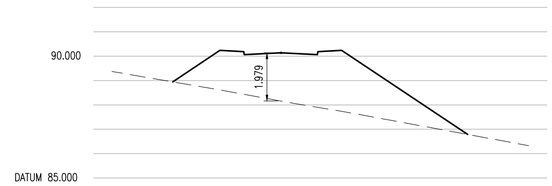
EXISTING LEVEL	89.493	88.851	88.417	
ALIGNMENT LEVEL	89.493	93.138	88.417	

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SCALE – 1:250 HORIZONTAL, 1:125 VERTICAL



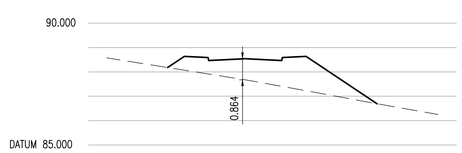
EXISTING LEVEL	88.933	87.975	86.523	
ALIGNMENT LEVEL	88.933	91.739	86.523	

CHAINAGE 40.00
SCALE – 1:250 HORIZONTAL, 1:125 VERTICAL



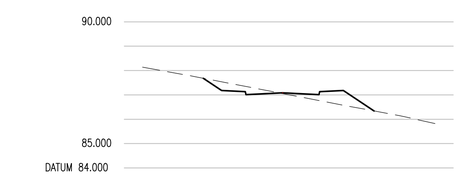
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ALIGNMENT LEVEL	88.946	90.139	86.787	

CHAINAGE 60.00
SCALE – 1:250 HORIZONTAL, 1:125 VERTICAL



EXISTING LEVEL	88.180	87.675	86.690	
ALIGNMENT LEVEL	88.180	88.539	86.690	

CHAINAGE 80.00
SCALE – 1:250 HORIZONTAL, 1:125 VERTICAL



EXISTING LEVEL	87.683	87.056	86.341	
ALIGNMENT LEVEL	87.683	87.084	86.341	

CHAINAGE 100.00
SCALE – 1:250 HORIZONTAL, 1:125 VERTICAL

THE INFORMATION SHOWN ON THIS DRAWING IS INDICATIVE AND IS FOR DISCUSSION PURPOSES ONLY

NOTES

REVISIONS

REV	DESCRIPTION	DATE	BY
–	FIRST ISSUE	22.10.14	TS

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Client Name:
PERSIMMON HOMES WEST YORKSHIRE

Project Title:
WILTHORPE,
BARNSLEY

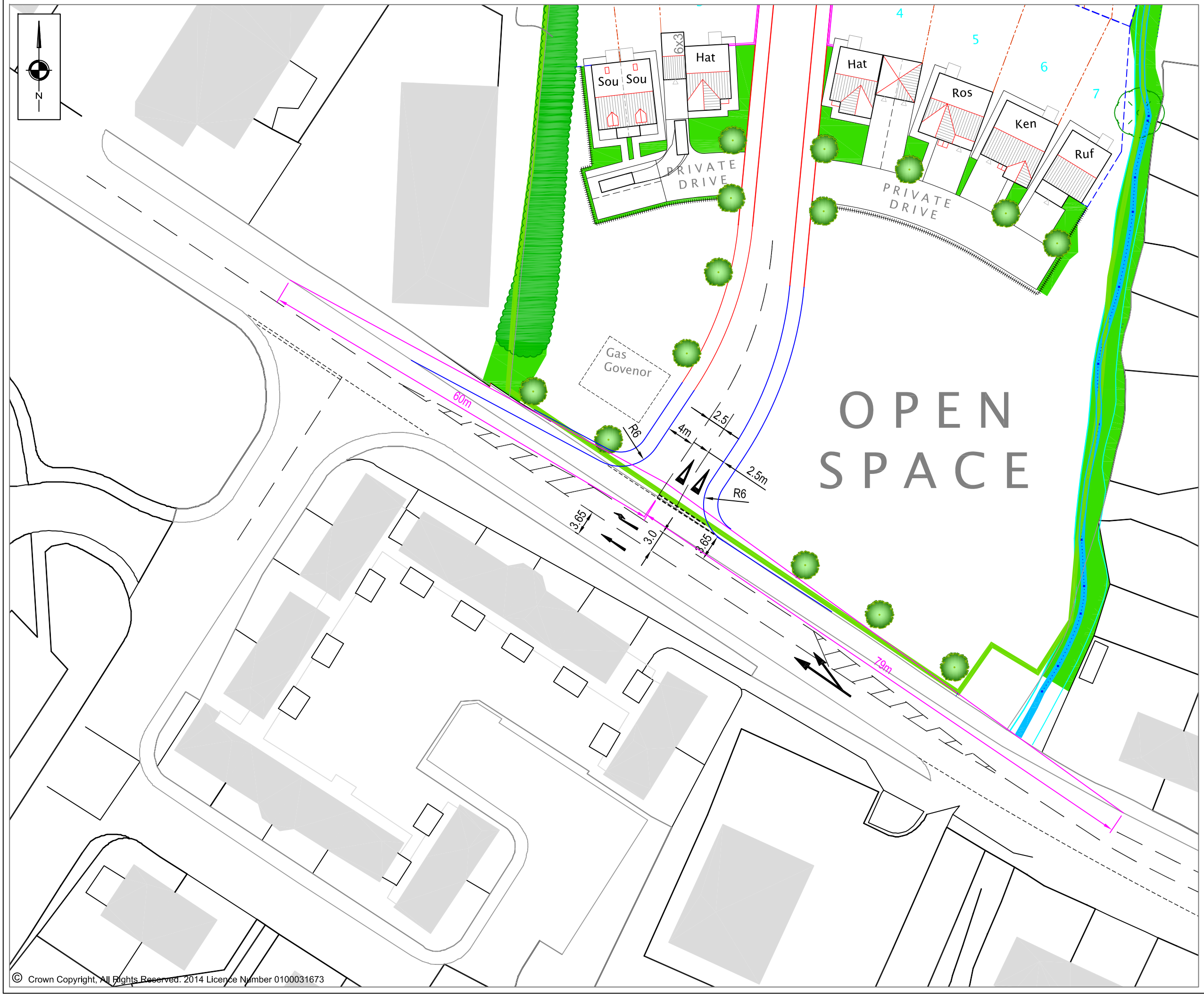
Drawing Title:
BARNSLEY COUNCIL
ROUNDABOUT OPTION

Date:	22.10.14	Drawn By:	TS
Scale:	AS SHOWN @ A1	Checked:	GB
Status:	FOR INFORMATION	Approved:	APPROVED
Drawing No.	SCP/14901/SK/101	Rev.	-

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APPENDIX 2



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NOTES

REVISIONS

REV	DESCRIPTION	DATE	BY
A	Amended Site Access Width	06.03.14	NS
B	Minor amendment to Access	07.03.14	GS
C	Amended Carriageway Width and Ghost Island Right Turn	18.03.14	NS
D	Visibility Splays Added	24.03.14	GS
E	Extent of ghost island right turn amended	31.03.14	FJT
F	Left turn flare added	14.10.14	FJT

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Client Name:
PERSIMMON HOMES (WEST YORKSHIRE)

Project Title:
A635 WILTHORPE ROAD, BARNSLEY

Drawing Title:
PROPOSED GHOST ISLAND RIGHT TURN

Drawn By:	Date:
FJT	06.02.2014
Checked: GS	Scale: 1:500 @ A3
Status: PLANNING	Approved/Unapproved: -
Drawing No. SCP/14901/F01	Rev. F