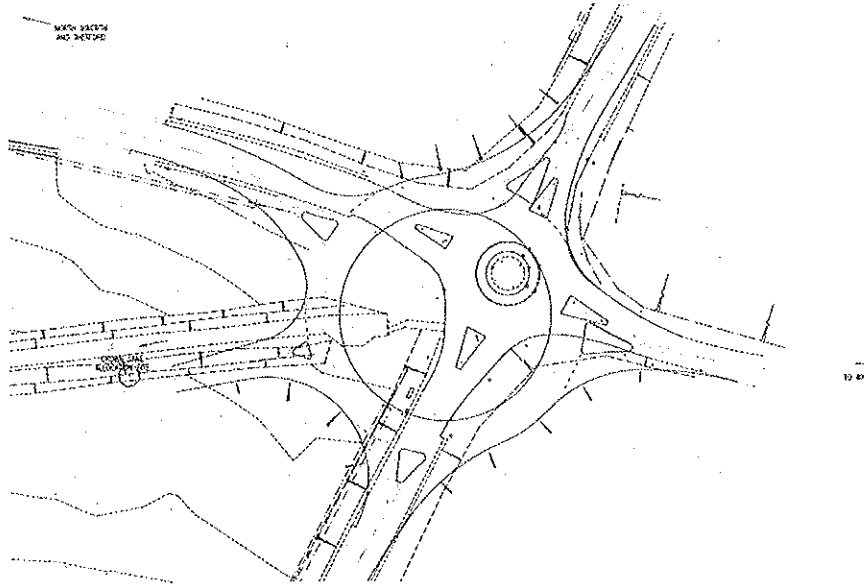


Appendix 2.0 (Part 2 of 2)

very little traffic either entering or leaving this arm, and when there are vehicles doing this, collisions may result.



Safety of 5 arm roundabouts

When Brian Lomax completed a simple review of 4 and 5 arm roundabouts in Suffolk in 2008, he came to the view that a new 5-arm roundabout would probably result in less accidents than a 4-arm roundabout and a new junction. This review however did not take into account retro-fitted roundabout designs.

It is my view, which is confirmed by national evidence, that accident numbers increase significantly with the number of arms.

The Design Manual for Roads and Bridges (TD 16 07) states that: "The number of accidents per year increases with the number of arms (because of corresponding increases in the number of potential conflict points and traffic flow)." This is based on a TRO report from 2004 which reviewed over 1000 roundabouts. The summary table of this information is shown below (table 2/1)

Table 2/1: Average Accident Frequency at Roundabouts Between 1999 and 2003

No. of arms	No. of sites	Accident frequency (accidents per year)				All roads	Accident severity (% fatal and serious)
		Single carriageway roads	Dual carriageway roads	Grade separated junctions			
3	326	0.63	1.28	2.70	0.79	9.3	
4	649	1.08	2.65	5.35	1.79	7.1	
5	157	1.72	3.80	7.67	3.66	7.1	
6	30	2.11	4.62	8.71	5.95	5.2	
All	1162	1.00	2.60	6.28	1.87	7.2	

With the issues discussed specifically with the roundabout design put forward, the probability of increasing accident frequency is high.

Alternatives to a 5-arm roundabout

During discussions with the applicant's technical advisors, a proposal for an improved 4-arm roundabout and a new ghost island right turn junction has been explored. It would appear that there is sufficient land that is controlled by the applicant or within the highway for this arrangement to be provided.

The existing 4-arm roundabout is not considered to have an unusually high number of collisions resulting in road casualties when compared to similar junctions in Suffolk. With two collisions in the last three years, it is in line with the national data shown above.

A newly constructed ghost island right turn junction on the A1088, designed in accordance with the Design Manual for Roads and Bridges, TD 42/95, is not likely to result in road casualties.

There are no collisions resulting in road casualties in the most recent three years related to the existing Bardwell Road / High Street junction with the A1088, immediately to the west. This is a ghost island right turn junction similar to that which could be constructed to access the site.

I have also reviewed the collisions resulting in road casualties in the last three years for the section of the A1088 from the A143 roundabout to the Norfolk border. It shows that of the nine larger junctions only two have resulted in any collisions resulting in road casualties.

One of those junctions had a single collision and the other had three collisions. This is an accident frequency of 0.15 collisions per year per junction and I would consider this a very worst case. This is significantly less than the increase one might expect from changing from a 4 to a 5 arm roundabout, which is approximately 0.65 collisions per year per junction.

Summary

This Authority does not consider that a 5 arm roundabout design is the safest access arrangement for this development site.

The proposed 5-arm roundabout design does not meet all the criteria of the Design Manual for Roads and Bridges TD 16/07– which is the standard to which Suffolk County Council require junctions to be constructed.

I have concerns about the safety of the junction and this is confirmed by national evidence.

A scheme which improves the 4-arm roundabout and provides a new ghost island right turn lane junction appears to be a feasible and preferable access arrangement.

There seems no reason to accept a less safe junction which does not fully comply with standards.

The applicant should further consider the improved 4-arm roundabout with a new ghost island right turn lane junction proposal for site access and continue to liaise with Suffolk County Council.

Yours sincerely,

Jon Noble
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