

By way of background I trained as a Civil Engineer, and became a Chartered Engineer and Member of the Institute of Civil Engineers in 1986. I majored in transportation, road design and drainage. I was a design engineer working as a Consultant for the Department of Transport and I was involved in the design and supervision of the construction on major parts of the following road schemes, the M42 - Water Orton to Tamworth, the M54 in entirety, the A5 Improvement scheme Telford to Shrewsbury and the Shrewsbury bypass, the A483 Oswestry by pass as well as the many smaller road improvement schemes involved with each of these major projects. I am well versed in the design and safety of highways.

I object to the application to build 43 properties on land adjacent to Oakhurst rise for many reasons but will speak today primarily because of the lack of sustainability in the transport plans and more importantly the unsafe nature of the proposed sole access via Oakhurst Rise and its junction with Ewens Road/Beaufort Road .

I am aware that the Council Planning Committee did not officially use Highways and Access as grounds for refusal and the Council have chosen not to give evidence on this matter but, given the Inspector's brief to examine all aspects of this proposed development afresh, I would like to introduce my concerns to the appeal hearing.

The history of the recent planning applications is informative. At the planning committee on 19th July 2018 there was, amongst other matters, considerable debate on Highways and the proposed unsafe access and the Planning Committee voted to refuse the proposed 90 dwellings development for a number of reasons including highways issues. At the planning committee on 21st February 2019 there was again considerable debate on the proposed unsafe nature of the only access via Oakhurst Rise's 15% gradient and the committee noted that on their site visit "their bus could not make it up the access road and they had to walk up the very steep approach." This time the planning committee refused the proposed 69 dwellings development for again a variety of reasons including highways issues.

However, at their next planning committee meeting on 21st March 2019 in a restricted section of that meeting, Members reconsidered the reasons for refusal and the Highways reason for refusal was removed because of “the likely extent of costs should there be an appeal.” Their valid concerns about the Highways issues and safe access were not changed. At the subsequent appeal Mr Sims, the Inspector, decided that he would consider, as a main issue, the provision of access and the effects of road traffic that would be generated by the development and found that “the sole access route, as a whole, is tortuous and far from ideal,” and, “notwithstanding the lack of objection from the highway authority this factor militates to some degree against the grant of permission for built development for the appeal site.”

So, we can see from the history that there is a clear and objective belief that the sole access to the site is a major planning issue. It is the Gradient of both the access site and the gradient on the proposed development location itself that is an unavoidable and unpalatable feature of this site -- there are no alternatives to this access route and the construction on such a contoured landscape will affect the ecology on the site, it will prevent any attempts to encourage sustainable travel and, most importantly it is unsafe.

Just briefly on the ecology, and I do not claim any expertise on ecology BUT, I can read an engineering drawing and when you dig a trench up to 10 metres deep directly next to a tree root protection area then you are highly likely to damage that tree. This site will require some extraordinarily deep trenches to make the drainage work. At Appendix A to this statement you can see the developers proposed drainage design next to tree numbers 3014 and 3015. You can see a cover level of 117.85 metres and a drainage invert level of 108.41 metres. To install this will necessitate a trench of 10 m in depth right next to the RPA. These trees will be damaged.

On sustainable travel, the NPPF requires that a development of this type promotes and encourages sustainable travel such as promoting walking and cycling. The statutory Cycling and Walking Investment Strategy (CWIS) sets clear ambitions in this regard and Local Transport Note 1/20 acknowledges on its front page that “Much has changed in the world of cycle infrastructure since LTN 2/08 was published.” Despite this change, the Residential Travel Plan (RTP) prepared by the Appellant’s Consultant AND the assessment carried out by Gloucestershire Highways utilises the out of date guidance contained in LTN 2/08. In LTN 1/20 we have at para 14.3.1 - “new housing development provides a major opportunity to create new and improved cycle infrastructure.” I can find nothing in the RTP for this development that improves cycle infrastructure.

Disappointingly, every Consultant-prepared Travel Plan associated with this development completely ignores the gradient issue. I have already mentioned that the last 50 metres of Oakhurst Rise before its junction with Beaufort Road falls at a gradient of just under 15%. The climb from the bottom of Oakhurst Rise to the top of the new development will be just under 30m and yet if you carry out a word search on any of the Travel Plans that have been prepared, you will not find the word “gradient” mentioned at all.

The multiple prepared RTP’s go further in trying to hide this issue by manipulating data to try to convince us that all is good. If we look at Table 3.2 on page 7 of the latest RTP, we can see that it was prepared using some of the advice given in the old LTN 2/08 in relation to walking and cycling times. It is reproduced here in this report and in [Appendix B](#) to the report. It does a number of things to manipulate the data. Firstly, it utilises average walking or cycling times that are for flat journeys, not for very steeply rising journeys. And secondly, a far more dubious practice, is the selection of points of access used in this analysis.

For both cycle and walking times, gradient should be considered. The RTP uses cycle times based upon “the lower limit” of 4m/s which is 9 mph. Actually, LTN 1/20 suggests at para 5.1.2 the average speed on an uphill gradient will be 5mph. So, cycle times quoted in the RTP should be nearly doubled. Oakhurst Rise’s 15% gradient is incidentally the type of gradient seen on only the toughest climbs in international cycle racing.

But a more distorting factor than the average speeds used is the way that the point of access is chosen for distances and times quoted. For the development itself all distances and times in the RTP are taken to the first point of access not, as would be more reasonable, the midpoint of the development. And for example, St Edwards prep school the entry gate has been chosen for this analysis rather than the school buildings or car park which are a further 600 metres away and 20 metres up a hill. Appendix B to my report shows more realistic travel times to the edge of the development, prepared utilising one of many exercise planning Apps that could be used, all of which would show times nearly double than those quoted in the RTP.

IHT Desirable/Maximum Walk Distance	Destination	Approximate Distance to site boundary (m)		Travel Time Walking (min:sec)		Travel Time Cycling (min:sec)	
		RTP	Komoot	RTP	Komoot	RTP	Komoot
Other Destinations 400m/1200m	Co-Op	790	810	9:25	14:00	3:20	5:00
Other Destinations 400m/1200m	Badham Pharmacy	720	740	8:35	12:00	3:00	5:00
Other Destinations 400m/1200m	Sixways Medical Clinic	740	770	8:50	13:00	3:05	5:00
Commuting/School 500m/2000m	St Edwards Prep School	680	1320	8:05	21:00	2:50	6:00
Commuting/School 500m/2000m	Holy Apostles Primary School	760	837	9:00	14:00	3:10	5:00
Other Destinations 400m/1200m	A40 Road Bus Stops	Up to 590	588	7:00	10:00	2:25	

This lack of robustness in the travel plan around sustainability issues and the challenges that construction on this steep site will present to the ecology of the site are clearly issues that have not been addressed appropriately within the NPPF. However, I am positively alarmed by the lack of concern expressed for the safety of people resulting from the dramatically increased traffic numbers that will have to utilise the badly flawed junction of Oakhurst Rise with Beaufort Road.

Since the last Appeal hearing and the last planning Committee meeting, the Gloucestershire Technical Specification for New Streets (TSfNS) has been replaced by the Manual for Glocs Streets July 2020 (MfGS). It introduces a swathe of new criteria and additional responsibilities for the designer, including additional safety provisions. Most pertinent, at page 54 it states “before approval can be given for a new access, or for alterations to an existing access, the Council will need to ensure that the site does not detrimentally affect the safety of other highway users.”

At the last Appeal we heard that the Appellant’s Transport Consultant had helped to write the old TSfNS when he was an employee at Gloucester Highways. He also told us that he had consulted extensively with his ex-Colleagues at Gloucestershire Highways on this particular matter. If he is available and on this call today I would be very interested to know a) whether this safety responsibility contained in the page 54 clause in the new MfGS was present in the old TSfNS that he co-authored and b) in any event, specifically how has he sought to address the concerns expressed in every Council planning meeting that has considered proposal for this development about the safety of the junction and its dramatic departure from the current and historic design guides.

The MfGS requires, on page 30, “that side road gradients into junctions should be set at a maximum of 1:20 (5%) for the first 10m. A copy of the relevant part of the MfGS is attached to this statement at [Appendix C](#). The dangers are clear especially in winter weather. A very quick [google](#) of what happens on even modest gradients in the UK in winter snow demonstrates how dangerous gradients at junctions can be. I make no apology for repeating that Oakhurst Rise before its junction with Beaufort Road falls at a gradient of just under 15%.

The MfGS also calls for a 2 metre footway. At the bottom of Oakhurst Rise where it connects to Ewens Road/Beaufort Road the Carriageway has footways of 1.6 and 1.8 metres width. So, not only is the gradient nearly three times as steep as that allowed in the MfGS but there is no opportunity to maintain users’ safety through mitigating action because it is too narrow and too steep. The requirements of the MfGS and the guidance from LTN 1/20 simply cannot be achieved.

Unfortunately, despite the extensive consultations that we heard about between Gloucestershire Highways and their ex-colleague at the Appellant’s transportation Consultants, Gloucestershire Highways have not addressed the safety concerns in relation to the gradient of this junction in any comprehensive manner in their various reports on the development. When questioned on the matter, they have stated “*regarding the gradient of Oakhurst Rise, Oakhurst Rise is a publicly maintainable historic highway which has served 30+ dwellings for a number of years. There is nothing to suggest that this section of highway is unsafe and there have been no personal injury collisions recorded.*” In October 2018 Boeing would have told you how safe their 737 Max was. In June 2017 Arconic would have told you how safe their building cladding panels were. Any professional Engineer will tell you that overcoming safety issues should be evidence and design led not anecdotal. I would like it to be a matter of public record that I have expressed these safety concerns and that I have asked Gloucestershire Highways on four occasions to update their advice on this development to reflect their own current design documents but thus far they have refused.

Both the Appellant's Consultants and Gloucestershire Highways have referred to what they cite as evidence by utilising what is often called "Stats 19 data" in quoting "no personal injury accidents recorded." Stats19 data is the core set of statistical data which each police force is required to collect for personal injury accidents reported to them. It would not show that I fell off my bike at the bottom of Oakhurst Rise and went to hospital with a broken arm unless I had reported that to the police.

The stats19 data actually carries with it the following health warning "*it has long been known that a considerable proportion of non-fatal casualties are not known to the police.*" This data is useful only to Highway Engineers generally for identifying the most serious accident blackspots.

Stats19 data is generally NOT used to clear an engineer from their obligations to model the safety of a steep approach to a major road junction when traffic and cycle volumes are proposed to triple. In fact my engineering experience would suggest that to go ahead with this scheme, without considering the changes that the scheme will impose on this junction from an engineering safety point of view is bordering on negligent.

I would like the Appeal to note that:

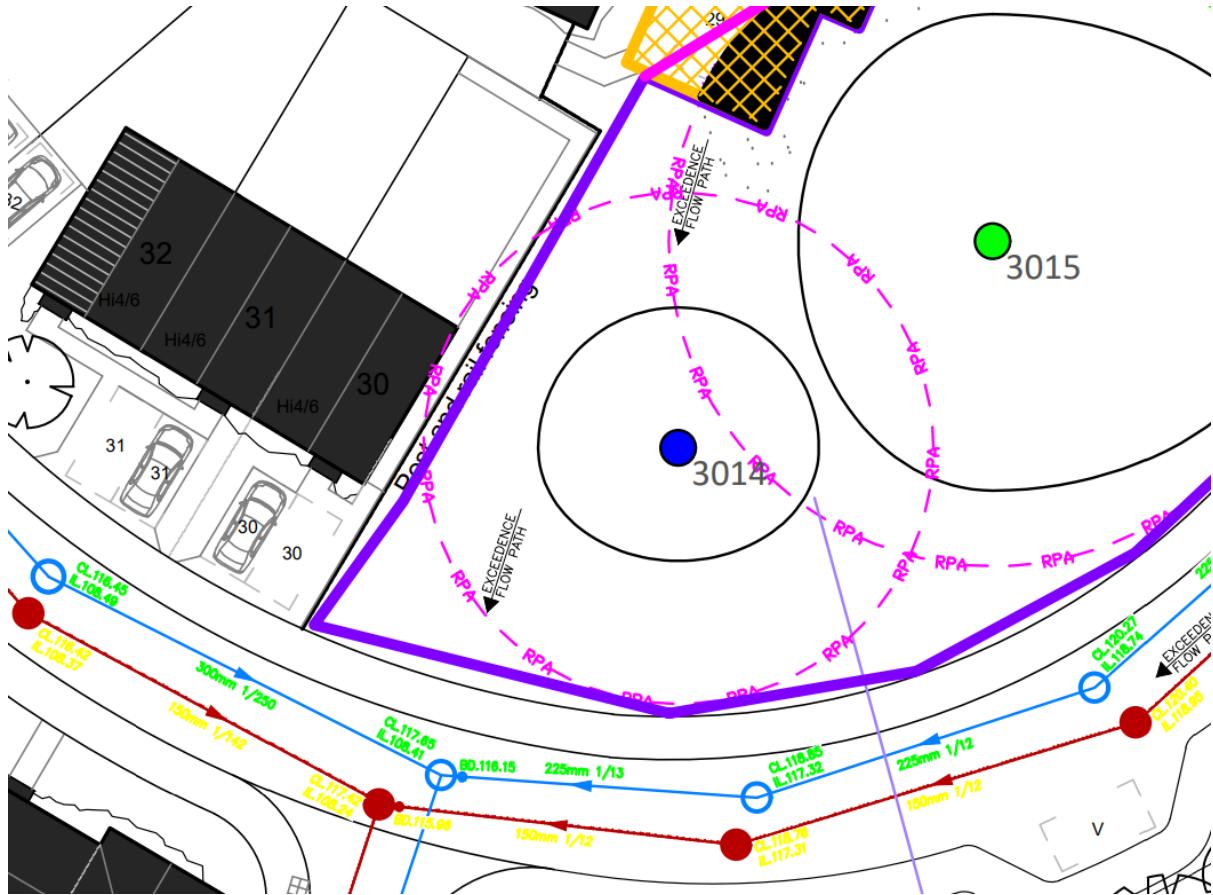
1. The proposed access to the development has a down gradient for the last 50m approaching the major road of just under 15% and the relevant design documents for new roads calls for only 5%.
2. Statistically increasing traffic (car and cycle) volumes results in more accidents and therefore reduces road safety
3. The latest Manual for Gloucestershire Streets calls for the Council to ensure that new access does not detrimentally affect the safety of other road users. We can debate by how much road safety will be impacted BUT, there is no argument about whether it will or will not. It will.
4. The appropriate design-led safety audit for this proposed access route has not been carried out and no resultant mitigating actions are proposed.

The National Planning Policy Framework (NPPF) states at paragraph 109 that “development should be prevented or refused on highways grounds if there would be an unacceptable impact on highway safety” and that for approval to be given “any significant impacts from the development on highway safety, should be cost-effectively mitigated to an acceptable degree”.

No credible engineering work has been carried out to assess the impact of this scheme on road safety and there have certainly been no mitigation actions proposed.

For these reasons I would advocate that this Appeal be refused.

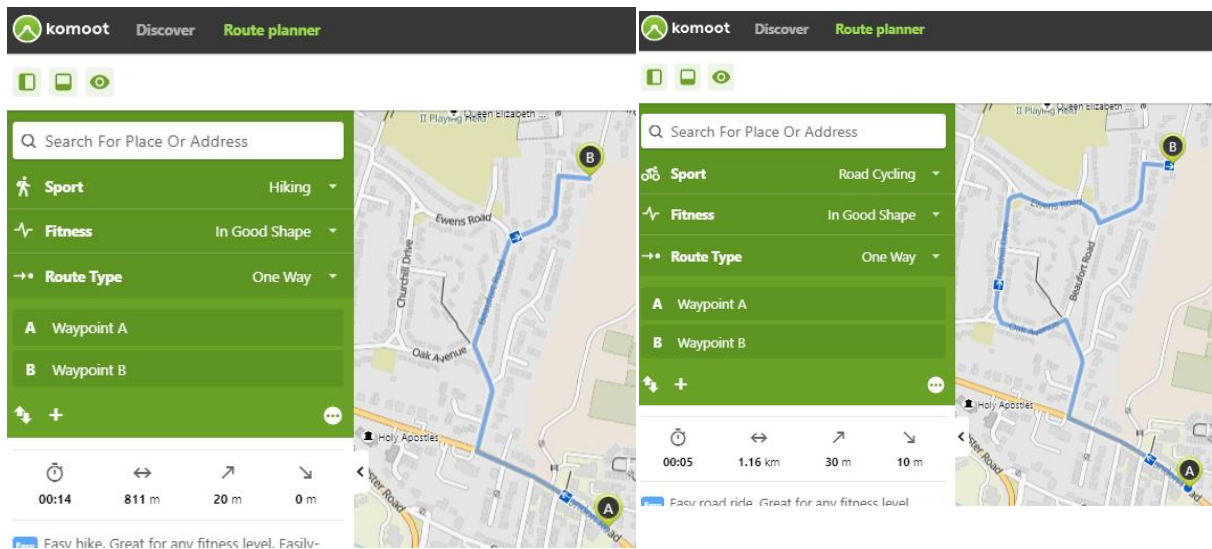
Ecology and drainage trench depths



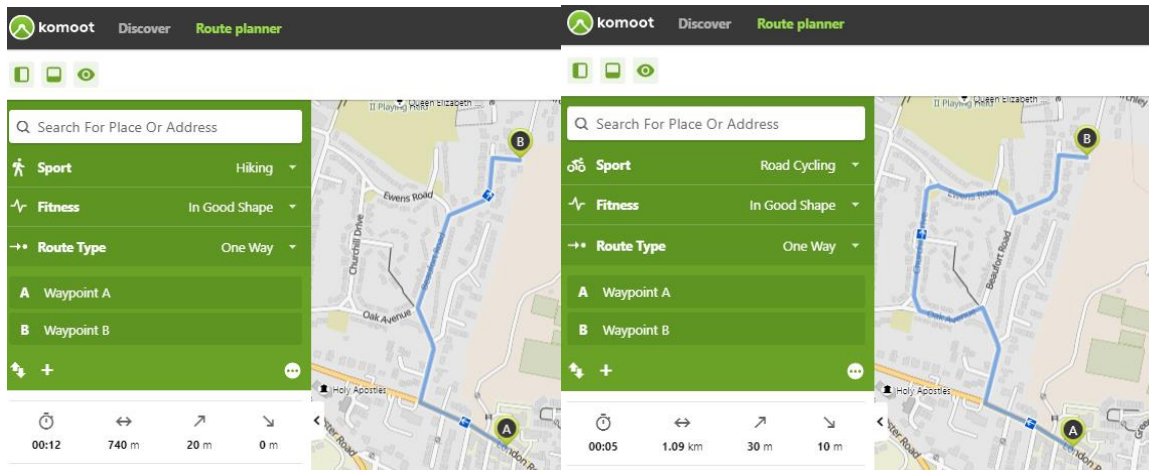
RTP travel times versus reality

IHT Desirable/Maximum Walk Distance	Destination	Approximate Distance to site boundary (m)		Travel Time Walking (min:sec)		Travel Time Cycling (min:sec)	
		RTP	Komoot	RTP	Komoot	RTP	Komoot
Other Destinations 400m/1200m	Co-Op	790	810	9:25	14:00	3:20	5:00
Other Destinations 400m/1200m	Badham Pharmacy	720	740	8:35	12:00	3:00	5:00
Other Destinations 400m/1200m	Sixways Medical Clinic	740	770	8:50	13:00	3:05	5:00
Commuting/School 500m/2000m	St Edwards Prep School	680	1320	8:05	21:00	2:50	6:00
Commuting/School 500m/2000m	Holy Apostles Primary School	760	837	9:00	14:00	3:10	5:00
Other Destinations 400m/1200m	A40 Road Bus Stops	Up to 590	588	7:00	10:00	2:25	

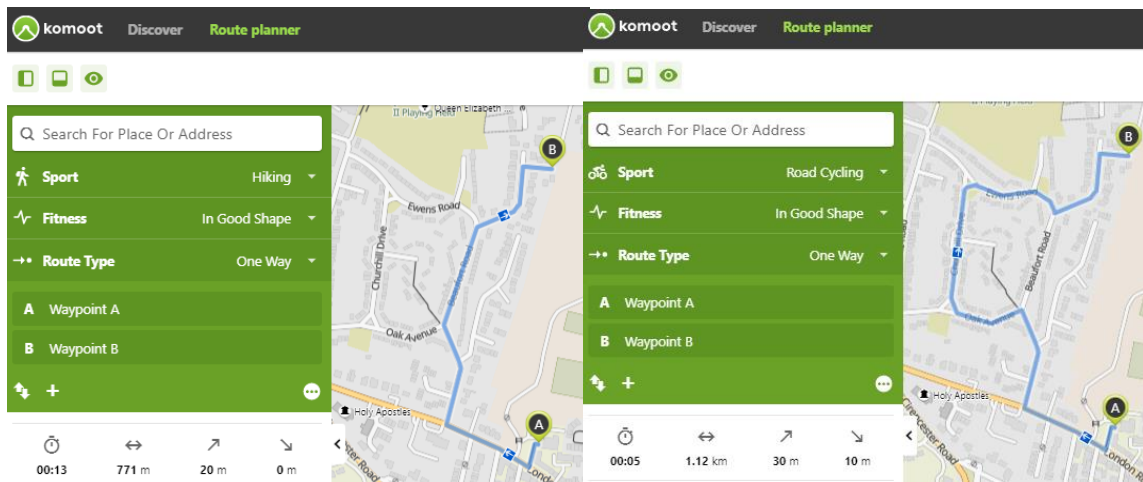
Co-Op



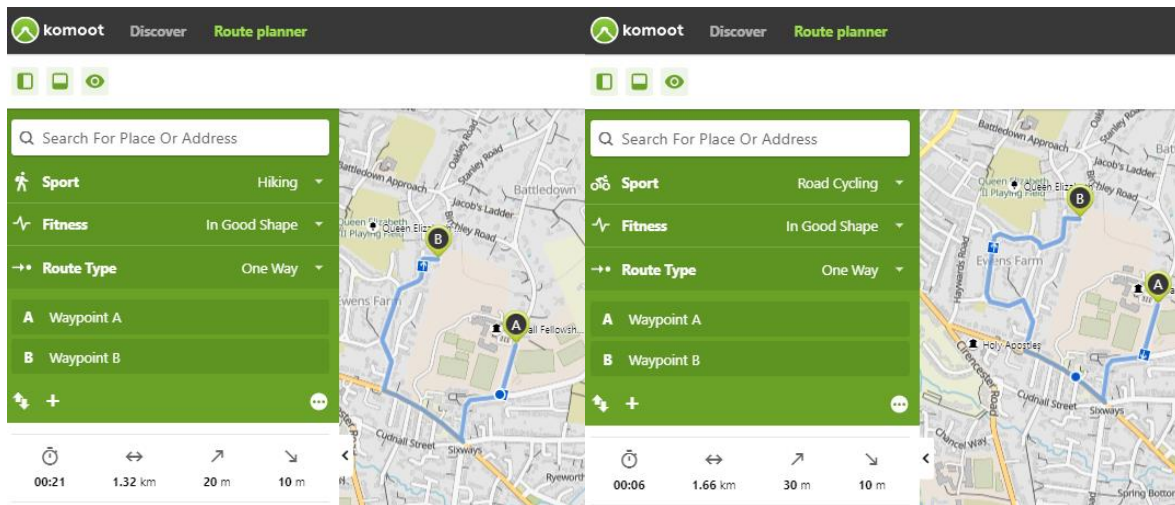
Badhams



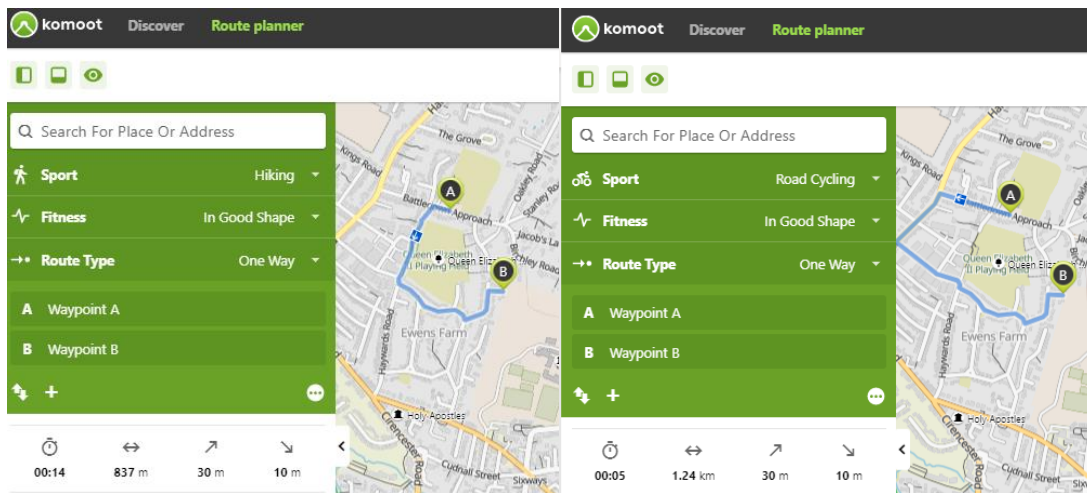
Sixways Medical Centre



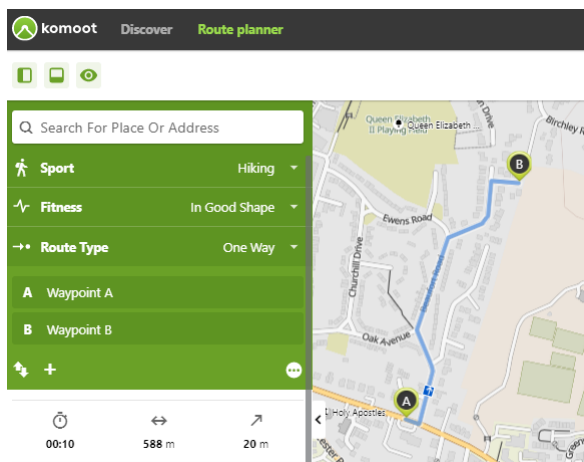
St Ed's Prep:



Holy Apostles Prep:



A40 Bus Stop



Manual for Gloucestershire Streets – July 2020**Page 30****Vertical Alignment**

The Developer must consider the following when designing vertical curves on new developments. Generally, the maximum and minimum gradients allowable on new developments will be as detailed within the table below:

Category	Maximum Gradient	Minimum Gradient
All Streets	1:20 (5%), but consideration give to 1:12	1:100
Active Travel Corridors	1:20 (5%)	1:100

Where a 1 in 12 gradient is proposed no length shall exceed 30m.

For clarity the gradient tolerances apply to private driveways and proposed streets.

Additionally, the Developer must consider the curvature of the new highway. The design curve length will be a function of the algebraic change of gradient, expressed as a percentage, multiplied by the 'K' value. 'K' values are provided in the table below:

Category	Minimum "K" Value
Enhanced Streets	6
Informal Streets / Pedestrian Prioritised Streets	2
Active Travel Corridors	2

The Developer should note that side road gradients into junctions should be set at a maximum of 1:20 (5%) for the first 10m. Additionally, the minimum vertical curve length of any section of road should be not less than 20m.