

Report No.

London Borough of Bromley

HPR2022/XXX

PART ONE - PUBLIC

Decision Maker: PLANS SUB-COMMITTEE NO. 1

Date: Thursday 31 March 2022

Decision Type: Urgent Non-Executive Key Non-Key

Title: ROSEDALE, HOCKENDEN LANE, SWANLEY, BR8
7QN

Contact Officer: John Stephenson, Enforcement & Appeals Manager
Tel: 0208 461 7887 E-mail: John.Stephenson@bromley.gov.uk

Chief Officer: Assistant Director (Planning)

Ward: Cray Valley East

1. Reason for report

Under application reference 20/02234/FULL1 Members resolved to refuse planning permission at the Planning Sub-Committee of 7 January 2021. Permission was refused for the following reasons:

- i. No justification of the need for additional gypsy and traveller pitches in this location has been provided and the proposal would, by reason of the increase in the number of pitches on the site and associated development, result in an overdevelopment which would be harmful to the amenities of neighbouring residential properties, including by reason of visual impact, contrary to Policies 12 and 37 of the Bromley Local Plan.
 - ii. The proposal would result in an intensification in the use of the existing access which has inadequate sight lines and would be prejudicial to highway safety including the safety of occupiers of the development and other road users, thereby contrary to Policy 32 of the Bromley Local Plan.
2. Following on from the Council's refusal of the application, work was undertaken on the site in May/June 2021, following its acquisition by the current owner. The Council has recently visited the site, and it clear that works have not been implemented in accordance with the refused 2020 application, although the site does contain three mobile homes which would accord with the three pitches which were sought under application reference 20/02234/FULL1. Additionally, virtually the entire site has been given over to hardstanding in the form of gravel and concrete

slabs to accommodate mobile homes and touring caravans. None of the soft landscaping which was proposed as part of the refused planning application has been provided.

3. The refused application is now the subject of a planning appeal which was submitted on 16 July 2021. The appeal submission addresses both of the Council's grounds of refusal which are discussed in Section 2 of this report.
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2. RECOMMENDATION(S)

It is recommended that Members agree to contest the appeal; however, it is recommended the Members amend the ground of refusal: in effect the grounds for contesting the appeal.

3. COMMENTARY

1. Starting with the second (highways) ground of refusal, in support of his case the Appellant has now provided a Highway Statement which, in part, was based on a speed survey undertaken in May 2021. Reference has been made to Manual for Streets and Manual for Streets 2, whilst there have been discussions between the Appellant's highways consultant and the Council's Highways Engineer. It was recognised that lateral visibility was restricted by existing vegetation along the site frontage which would have to be trimmed, removed or cut back.
2. Based on the findings of the Appellant's highways consultant a proposed sightline drawing has been submitted in Appendix JPH-D of the Highway Statement entitled Figure 1 which requires some vegetation to be trimmed. The Council's Highways Engineer has accepted the proposed sightlines shown in Figure 1 and suggested that if that can be included as a condition in any permission, then the second ground of refusal should not be pursued. Accordingly, Members are advised not to contest the second ground of refusal, since these concerns have now been satisfactorily addressed.
3. Turning to the first ground of refusal, this may be broken down accordingly:
 - (a) No justification of the need for additional gypsy and traveller pitches in this location has been provided.
 - (b) The proposal would, by reason of the increase in the number of pitches on the site and associated development, result in an overdevelopment which would be harmful to the amenities of neighbouring residential properties, including by reason of visual impact.
4. In regard to the first part of the first ground of refusal, the site was previously in the ownership of another traveller, a Mr Smith, who had obtained planning permission for the site, most recently under reference 15/04653/FULL1 in December 2015 for its continued use for stationing of residential caravans to provide one gypsy pitch, together with associated works. Subsequently, the land was purchased by its current owner in January 2020 (according to Land Registry records) and the refused application was lodged in June 2020. No specific details relating to the applicant or his family were included as part of the planning application, aside from a reference to their traveller status in the planning application form.
5. Importantly, the site in question is designated a Traveller Site by the Council ("Traveller Site Inset Within The Green Belt"), following the adoption of the Bromley Local Plan in January 2019. The site is allocated as a Traveller Site in Policy 12 of the Local Plan (see also Appendix 10.3, Site 19). Policy 12 advises that "the Council will seek to meet the identified need for provision by first

considering the potential within allocated traveller sites.” The evidence base for the Local Plan has identified the potential for additional pitches on this allocated Traveller Site.

6. In response to the first ground of refusal, the Appellant has provided, within his appeal statement, details of the current occupiers of the site, comprising of himself and various members of his family. Officers have no reason to dispute that the current occupiers are travellers. As the Government’s Planning Policy for Traveller Sites (PPTS) (August 2015) sets out, local planning authorities “should determine applications for sites from any travellers and not just those with local connections.” Accordingly, whilst the former traveller owner of the site is no longer in occupation, the mere fact that the site continues to be occupied by travellers means that the first part of the first ground of refusal has been addressed. Accordingly, Members are advised not to contest this element of the first ground of refusal.
7. The second part of the first ground of refusal concerns the overdevelopment of the site and harm to the amenities of neighbouring residential properties, including by reason of visual impact. As already explained, works have not been implemented in accordance with the refused 2020 application, although the site does contain three mobile homes which would accord with the three pitches for which planning permission was sought. Virtually the entire site has been given over to hardstanding in the form gravel and concrete slabs to accommodate mobile homes and touring caravans. None of the soft landscaping which was proposed as part of the refused planning application has been included. Prior to the undertaking of these works, approximately half of the site was soft landscaped whilst the site frontage was sympathetically landscaped in such way that it contributed positively to its setting. In its current form, the site appears out of character with its surroundings; despite the boundary enclosures, the extent of development of the site is evident within from views to the north at the front and from the south-west. The lopping and felling of trees has enabled open views into the site, whilst undermining its landscape setting.
8. Clearly, the works have not been undertaken in accordance with the submitted plans. Given its current state, it is considered that the site has been overdeveloped and adversely affected visual amenity by reason of the excessive hardstanding and the actual siting of mobile homes within the site. Notwithstanding that the site has been removed from the Green Belt, Policy 37 of the Local Plan remains applicable. This policy requires that all development proposals meet a high standard of design and layout. The following criteria of this policy are considered relevant:
 - a) Be imaginative and attractive to look at, of a good architectural quality and should complement the scale, proportion, form, layout and materials of adjacent buildings and areas;
 - b) Positively contribute to the existing street scene and/or landscape and respect important views, heritage assets, skylines, landmarks or landscape features; and
 - c) Space about buildings should provide opportunities to create attractive settings with hard or soft landscaping (including enhancing biodiversity).
9. Additionally, paragraph 26 of the PPTS states that when considering applications, local planning authorities should (amongst other things) attached weight to the following matter: (d) “*not*

enclosing a site with so much hard landscaping, high walls or fences, that the impression may be given that the site and its occupants are deliberately isolated from the rest of the community.”

10. In conclusion, it is considered that the second part of the first ground of refusal should be contested.

Appendix 1 to this report contains the officer's report to committee of 15 October 2020 which includes details of the proposal, planning history and policy context.

Appendix 2 contains the Appellant's Highways Statement.

Non-Applicable Sections:	IMPACT ON VULNERABLE ADULTS AND CHILDREN, POLICY IMPLICATONS, PERSONNEL IMPLICATIONS, LEGAL IMPLICATIONS, PROCUREMENT IMPLICATIONS
Background Documents: (Access via Contact Officer)	Background papers referred to during production of this report comprise all correspondence for planning application ref. 20/02334/FULL1

APPENDIX 1 - Committee Report

Committee Date	07.01.2021		
Address	Rosedale Hockenden Lane Swanley BR8 7QN		
Application Number	20/02234/FULL1	Officer - Gill Lambert	
Ward	Cray Valley East		
Proposal	Use of land for the stationing of residential caravans to provide 3 gypsy and traveller pitches with associated works including amenity blocks, hardstanding, fencing, septic tank and landscaping on land adjacent to Vinsons Cottage, Hockenden Lane, Swanley		
Applicant	Agent		
Mrs Crimea Jones	Dr Angus Murdoch		
Rosedale Hockenden Lane Swanley BR8 7QN	PO Box 71 Ilminster TA19 0WF		
Reason for referral to committee	Councillor call in		
	Significant Objections/ Controversial		No

RECOMMENDATION	Application Permitted
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KEY DESIGNATIONS			
Biggin Hill Safeguarding Area Green Belt London City Airport Safeguarding Smoke Control SCA 20			
Vehicle parking	Existing number of spaces	Total proposed including spaces retained	Difference in spaces (+ or -)

Standard car spaces	1	3	+2
Light goods vehicles/public carrier vehicles	1	3	+2
Cycle			

Representation summary	Residents letters were sent on 1 st July 2020 A Site Notice was displayed between 8 th July – 29 th July 2020		
Total number of responses	11		
Number in support	0		
Number of objections	11		

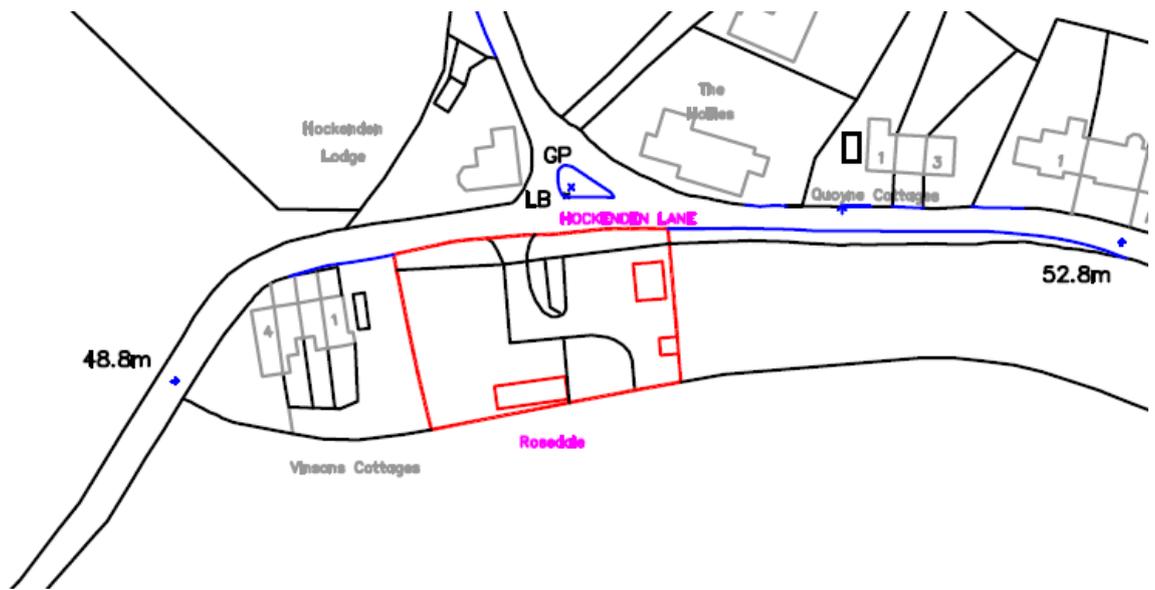
1 SUMMARY OF KEY REASONS FOR RECOMMENDATION

- The development would not have a harmful impact on the visual amenities of the Green Belt
- The proposals would not result in an overdevelopment of the site
- The development would not adversely affect the amenities of neighbouring residential properties
- The proposals would not have adverse impacts on parking or highway safety

2 LOCATION

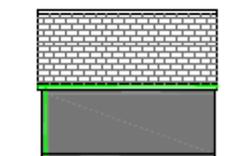
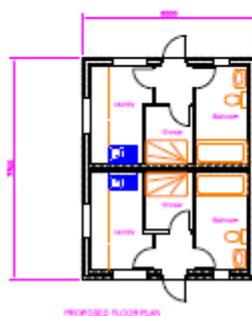
- 2.1 This site is located on the southern side of Hockenden Lane, adjacent to Vinsons Cottages and opposite the junction with Cookham Road. It measures 0.15ha in area, and lies within the Green Belt.
- 2.2 The site is currently occupied by a static caravan, a touring van, a stable block, an amenity block and 3 sheds, and altogether comprises one gypsy/traveller pitch.

2.3 Site location plan:



3 PROPOSAL

- 3.1 Planning permission is sought for the use of this land for the stationing of residential caravans to provide 3 gypsy and traveller pitches with associated works including amenity blocks, hardstanding, fencing, septic tank and landscaping
- 3.2 National pitch guidance indicates that a pitch accommodates 1 static, 1 tourer, provides parking and has an 'amenity block'. In this case, each pitch would have one static caravan, one touring van and an amenity block, and space would be provided for 2 car parking spaces on each plot.
- 3.3 Double amenity block (for two pitches):



WALLS
 AND CEILING SHALL CONSIST OF
 FULL FACED BLOCKS EXTERNALLY
 AND INSULATED BLOCKS
 INTERNALLY.
 ROOF
 COVERED WITH SLATES
 WINDOWS & DOORS
 UPVC FRAME IN WHITE
 WITH BRASS HANDLES.



3.4 Proposed site plan:



4 RELEVANT PLANNING HISTORY

4.1 The relevant planning history relating to the application site is summarised as follows:

4.2 Under ref.08/02489, a 5-year temporary planning permission was granted on appeal in February 2010 for the change of use of this land for the stationing of residential caravans to provide 1 gypsy pitch, whilst a permanent permission was granted for the retention of the stable block consisting of 3 loose boxes and a store.

4.3 The Inspector concluded that inappropriate development had taken place which reduced the openness of the Green Belt, led to encroachment into the countryside and failed to prevent urban sprawl. She found that the harm identified to the Green Belt by reason of inappropriateness was not sufficiently outweighed by other considerations to allow a permanent permission to be granted, but concluded that a temporary 5 year permission could be granted due to the significant unmet need for gypsy and traveller sites (which would not be resolved in the immediate short term), and the limited harm caused to the Green Belt by the temporary permission when compared with the significant harm that would be caused to the appellant's home and family life if they were forced to leave the site. For that reason, the Inspector also limited the temporary permission to the applicant, Mr Robbie Smith, and his resident dependants. The temporary permission would enable the Council to bring forward allocated traveller sites.

- 4.4 The guidance around plan making subsequently changed with the simultaneous publication in March 2012 of the
- National Planning Policy Guidance (NPPG)
 - Planning Policy for Traveller Sites (PPTS)
- 4.5 Once the 2010 temporary permission expired, an application (ref.15/00500) was made on the basis of the former appeal and the emerging Local Plan policy direction which indicated this as a location for a traveller site, however this application was refused in July 2015 as it was considered to be contrary to Green Belt policy in the absence of very special circumstances.
- 4.6 Under ref.15/04653/FULL1, a permanent permission was granted in December 2015 for the continued use of the land for the stationing of residential caravans to provide 1 gypsy pitch, with associated works (hardstanding, fencing, septic tank and landscaping) and stable block and paddock. It was allocated as a gypsy/traveller site in the Bromley Local Plan (2019).

5 CONSULTATION SUMMARY

A) Statutory/Non Statutory

Highways – No objection

- The siting of one pitch was allowed at appeal in 2008 and the time limit was subsequently extended under a further application
- This proposal is for 3 pitches which will increase the amount of traffic using the access onto Hockenden Lane. The main concern is the sightlines which need to be made as good as possible and may affect some of the planting shown on the block plan
- If permission is granted, a sightline condition is recommended.

Drainage – No objection

- There are no public foul and surface water sewers near the site, therefore, the applicant should submit further details by condition to demonstrate how to dispose of foul and surface water run-off generated from the site.

B) Adjoining Occupiers

Detrimental impact on Green Belt (addressed in paras 7.1.6, 7.2.1–7.2.3)

- Only one pitch should be allowed as it is on Green Belt land
- The site was originally occupied by one pitch without planning permission, and permission was subsequently granted for one pitch only
- The proposals would have a negative effect on the appearance of the site and the surrounding countryside
- The proposals would be detrimental to the openness of the Green Belt

Increased noise and disturbance (addressed in para.7.3.2)

- Proposals would treble the occupancy thus increasing noise and disturbance to neighbouring properties

Increased vehicular traffic (addressed in para.7.4.1)

- Proposals would increase vehicular traffic to the site
- Site is on a very busy rat run road leading to Orpington
- The site has a hazardous access on a bend

Increased size of site (addressed in para.7.5.1)

- The site has encroached onto adjoining fields

Other matters (addressed in para.7.3.2)

- If the applicant is not a Traveller, then the application should be dealt with in the same way as an application from the settled population
- Health and safety risk from a large number of residents living in a small development

6 POLICIES AND GUIDANCE

6.1 Section 70(2) of the Town and Country Planning Act 1990 (as amended) sets out that in considering and determining applications for planning permission the local planning authority must have regard to:-

- (a) the provisions of the development plan, so far as material to the application,
- (b) any local finance considerations, so far as material to the application, and
- (c) any other material considerations.

6.2 Section 38 (6) of the Planning and Compulsory Purchase Act (2004) makes it clear that any determination under the planning acts must be made in accordance with the development plan unless material considerations indicate otherwise.

6.3 The development plan for Bromley comprises the London Plan (March 2016) and the Bromley Local Plan (2019). The NPPF does not change the legal status of the development plan.

6.4 The 'Intend to Publish' version of draft London Plan (December 2019) is a material consideration in the determination of this planning application. Paragraph 48 of the NPPF states that decision makers may give weight to relevant policies in emerging plans according to: (1) the stage of preparation of the emerging plan; (2) the extent to which there are unresolved objections to relevant policies in the emerging plan; and (3) the degree of consistency of relevant policies to the policies in the Framework.

6.5 The draft New London Plan was submitted to the Secretary of State (SoS) on 9 December 2019, following the Examination in Public which took place in 2019. This was version of the London Plan which the Mayor intended to publish, having considered the report and recommendations of the panel of Inspectors.

6.6 The London Assembly considered the draft new London Plan at a plenary meeting on 6 February 2020 and did not exercise their power to veto the plan.

6.7 After considering the 'Intend to Publish' Plan, on 13 March 2020 the Secretary of State for Housing, Communities and Local Government wrote to the Mayor identifying directed changes to a number of policies in the draft plan. The SoS considered these changes were necessary to address concerns regarding inconsistencies with national policy. The Mayor cannot publish the New London Plan until the directed changes have been incorporated, or

until alternative changes to address identified concerns have been agreed with the SoS. This could affect the weight given to the draft plan with regard to the directed policies.

6.8 At this stage, the Council's up-to-date Local Plan is generally considered to have primacy over the draft London Plan in planning determinations. However, where no modifications have been directed the draft London Plan policies are capable of having significant weight (as seen in a recent SoS call-in decision in the Royal Borough of Kensington and Chelsea). Where specific draft London Plan policies have been given particular weight in the determination of this application, this is discussed in this report.

6.9 The application falls to be determined in accordance with the following policies:-

6.10 **National Planning Policy Framework 2019**

6.11 **The London Plan**

3.8 Housing choice

6.13 Parking

7.4 Local character

6.12 **Draft London Plan**

H14 Gypsy & Traveller Accommodation

6.13 **Bromley Local Plan 2019**

12 Traveller's Accommodation

30 Parking

37 General Design of Development

49 The Green Belt

6.14 **Bromley Supplementary Guidance**

Supplementary Planning Guidance 1 - General Design Principles

7 ASSESSMENT

7.1 Principle - Acceptable

7.1.1 Policy 3.8 Housing Choice of The London Plan (2016) requires boroughs to identify the range of needs likely to arise within their areas and ensure that (i) the accommodation requirements of gypsies and travellers (including travelling show people) are identified and addressed, with sites identified in line with national policy, in coordination with neighbouring boroughs and districts as appropriate.

7.1.2 Policy H14 Gypsy & Traveller Accommodation of the Draft London Plan (2019) requires Boroughs to plan to meet the identified need for permanent Gypsy and Traveller pitches. The Secretary of State has directed changes to this policy relating to the Mayor's definition of Gypsies & Travellers, and as such, limited weight can be afforded. However, an uncontested element of the policy advises that where Boroughs have not undertaken a needs assessment since 2008, the identified need should be as set out in Table 4.4. In Bromley's case, this would set a need for 74 additional pitches, were it not for Bromley's more recent needs assessments set out below.

- 7.1.3 The site is allocated as a Traveller Site in Policy 12 of the Bromley Local Plan (2019) - (see also Appendix 10.3 Site 19). Policy 12 advises that “the Council will seek to meet the identified need for provision by first considering the potential within allocated traveller sites”.
- 7.1.4 The need for traveller pitches was most recently assessed in 2016 as part of the evidence base for the then draft Local Plan which met the ‘current assessed need’ at that time through the Local Plan allocations. The 2016 assessment also suggested a need for an additional 6 pitches by 2021 and a subsequent need for 13–14 pitches for the remainder of the plan period to 2031.
- 7.1.5 The Local Plan evidence base also included a Site Assessment paper which looked at the potential of the proposed allocated sites at that time for allocation to accommodate projected future need (necessary for a sound Local Plan). Table 5 of the evidence base indicated a potential for an additional 2 pitches on this site which matches what is currently proposed. The Local Plan allocations and the supporting evidence were found sound and the Local Plan was adopted in 2019.
- 7.1.6 The proposal for 3 pitches on this allocated traveller site accords with the intention of Policy 12 which seeks to address needs firstly within existing sites. The proposal for 3 pitches would not result in an overdevelopment of this traveller site but reflects the potential indicated within the site assessments presented to the Local Plan Inspector when the Plan was being examined.

7.2 Green Belt – Acceptable

- 7.2.1 Whilst the site lies within the Green Belt, it has been allocated as an inset in the Green Belt for a Traveller site, and although the use of the site would intensify with the introduction of two additional Traveller pitches, the proposals would not result in a material change of use of land within the Green Belt.
- 7.2.2 Policy 12 of the BLP requires proposals for new development within allocated traveller sites to be sensitively located and landscaped in order to minimise adverse impacts on the visual amenity of the site and adjoining land in the Green Belt.
- 7.2.3 The proposed additional pitches have been sensitively located within the site with the amenity blocks provided next to each other in a double block, and appropriate landscaped areas have been provided. The proposals are not therefore considered to have a significant detrimental impact on the visual amenities of the Green Belt.

7.3 Residential Amenity – Acceptable

- 7.3.1 The site lies within a small residential enclave, and the proposals are not considered to result in any undue loss of light, privacy or prospect to neighbouring properties.
- 7.3.2 Neighbours have raised concerns about increased noise and disturbance and health and safety risk from the intensification of the use of the site, but this is a large site with good separations maintained to neighbouring residential properties. No undue noise disturbance or health and safety risks would therefore occur.

7.4 Highways – Acceptable/Unacceptable

7.4.1 No highways objections are raised to the proposals so long as adequate sightlines are provided at the entrance.

7.5 Other matters

7.5.1 In relation to queries raised from local residents regarding the site boundary, the site location plan appears to match the allocated Traveller Site.

8 CONCLUSION

8.1 The proposals would not result in an overdevelopment of this Traveller site, and would not have a detrimental impact on the visual amenities of the Green Belt, nor unduly affect the amenities of neighbouring residential properties or parking and traffic in surrounding roads.

8.2 Conditions are recommended to secure an acceptable form of development which protects the amenities of the Green Belt and highway safety.

RECOMMENDATION: Application Permitted

Subject to the following conditions:

1. Standard time limit of 3 years
2. Standard compliance with approved plans
3. Scheme for surface water drainage
4. Landscaping (Soft and Hard) and boundary details
5. Car parking details to be implemented
6. Provision of Sight Lines
7. Restrict number of caravans
8. Restrict weight of vehicles

Any other planning condition(s) considered necessary by the Assistant Director of Planning

APPENDIX 2 - Transport Statement

The Hurlstone Partnership

**APPEAL BY CRIMEA JONES - ROSEDALE, HOCKENDEN LANE, SWANLEY,
KENT, BR8 7QN**

**Hearing Statement on Highway Matters of
Jeremy P. Hurlstone BSc (Hons) CMILT, MCIHT**

Appeal Ref: TBC

LPA Ref: DC/20/02234/FULL1

July 2021

JPH/210202/D1

The Hurlstone Partnership

APPEAL BY CRIMEA JONES - ROSEDALE, HOCKENDEN LANE, SWANLEY,
KENT, BR8 7QN

Document Status –1st Draft

Produced by: ----- J P Hurlstone

Date: July 2021

Transportation Planning, Highway Design and Environmental Assessment

The Hurlstone Partnership

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The Hurlstone Partnership

Appendix JPH-A

e-mail correspondence

Jeremy Hurlstone

From: Hammond, Mike
Sent: 22 April 2021 14:54
To: Jeremy Hurlstone
Subject: RE: 20/02234/FULL1 - Rosedale, Hockenden Lane, Swanley

Good afternoon Jeremy,

Further to our telephone conversation, I can confirm that I am OK with the ATC's going down now to establish the traffic speeds and hence the sightline requirements.

Kind regards

Mike

Mike Hammond
Highway Development Engineer
Place Department
London Borough of Bromley, Civic Centre, Stockwell Close, BR1 3UH
www.bromley.gov.uk

From: Jeremy Hurlstone Sent: 22 April 2021 11:49
To: Hammond, Mike
Subject: 20/02234/FULL1 - Rosedale, Hockenden Lane, Swanley
Importance: High

Dear Mike,

Your colleague kindly provided your contact details and I called and left a voice message about this. As you are probably aware, despite no objection from the Highway Authority, planning permission was refused on highway grounds (see reason 2 of attached notice). I have been instructed to review the refusal and to prepare evidence for an appeal which is to be lodged. I visited the site on 8th April (when the road was closed to the north).

On the basis that the reason for refusal suggests the visibility is inadequate, despite the evidence of use and lack of injury accidents indicating otherwise, which is unsurprising based on the forward visibility splays I measured and the posted speed limit. However, the lateral visibility is restricted to a degree by existing vegetation, which the applicant can sort out. However, the extent of vegetation to be trimmed / removed/set-back will obviously depend upon traffic speeds. To establish those I propose to instruct the installation of a couple of ATCs for a week. I am hoping that now the schools are back and shops are open again, the Highway Authority would be content if the surveys are undertaken and that the data recorded would be an acceptable basis to work from. I do not want to undertake surveys if the data would be considered unacceptable or unrepresentative. Hockenden Lane has now been open for a couple of weeks following its temporary closure.

I trust the foregoing is acceptable and look forward to hearing from you. Should you have any queries or wish to discuss this, please do not hesitate to contact me.

Kind regards

Jeremy Hurlstone
The Hurlstone Partnership Limited
Tel:

The Hurlstone Partnership

APPENDIX JPH-B

Manual for Streets / Manual for Streets 2 Extracts



Department for
Transport



Manual for Streets

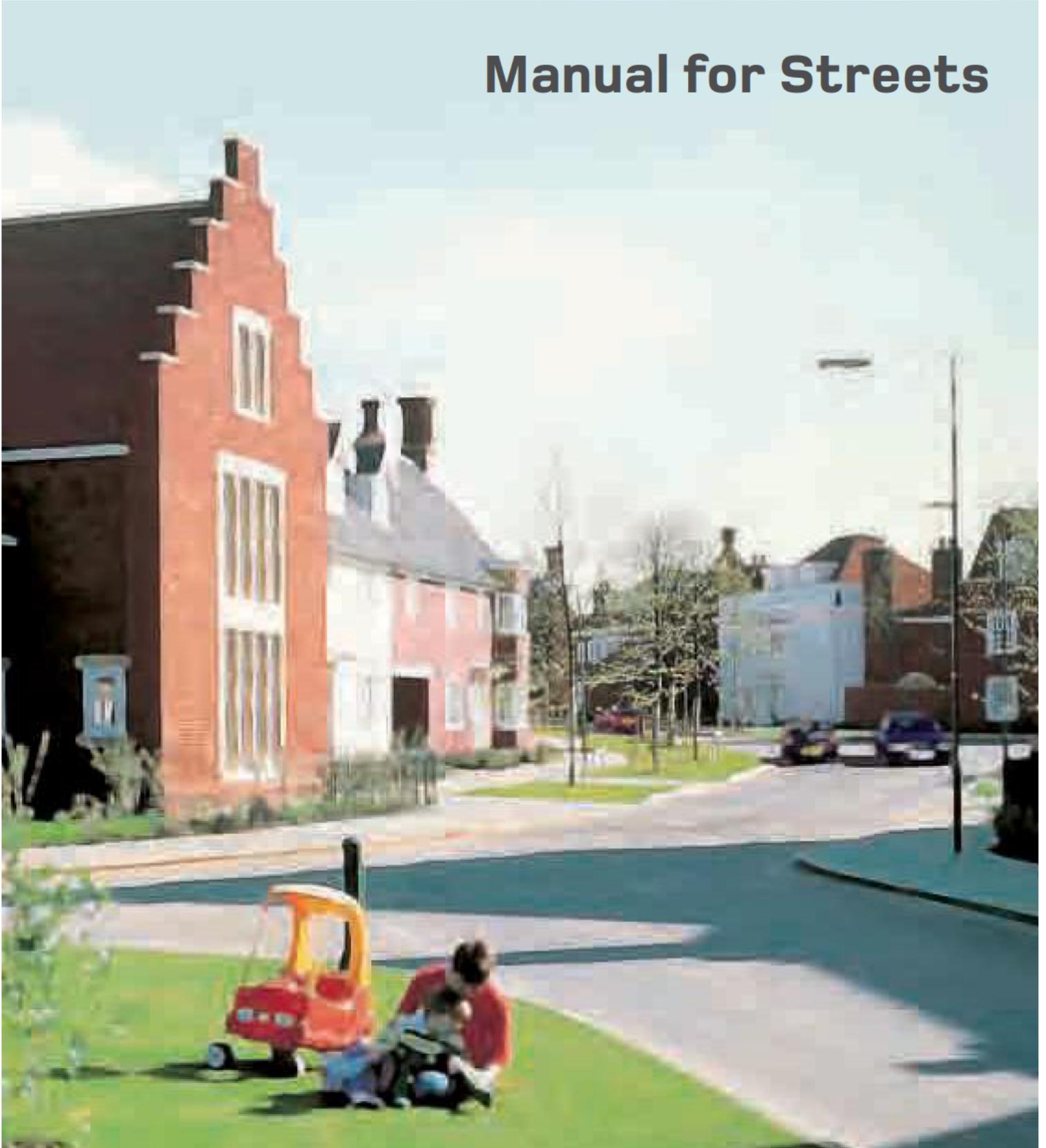


Table 7.1 Derived SSDs for streets (figures rounded).

Speed	Kilometres per hour	16	20	24	25	30	32	40	45	48	50	60
	Miles per hour	10	12	15	16	19	20	25	28	30	31	37
SSD (metres)		9	12	15	16	20	22	31	36	40	43	56
SSD adjusted for bonnet length. See 7.6.4		11	14	17	18	23	25	33	39	43	45	59

Additional features will be needed to achieve low speeds

7.5.7 The SSD values used in MfS are based on a perception–reaction time of 1.5 seconds and a deceleration rate of 0.45g (4.41 m/s²). Table 7.1 uses these values to show the effect of speed on SSD.

7.5.8 Below around 20 m, shorter SSDs themselves will not achieve low vehicle speeds: speed-reducing features will be needed. For higher speed roads, i.e. with an 85th percentile speed over 60 km/h, it may be appropriate to use longer SSDs, as set out in the *Design Manual for Roads and Bridges*.

7.5.9 Gradients affect stopping distances. The deceleration rate of 0.45g used to calculate the figures in Table 7.1 is for a level road. A 10% gradient will increase (or decrease) the rate by around 0.1g.

7.6 Visibility requirements

7.6.1 Visibility should be checked at junctions and along the street. Visibility is measured horizontally and vertically.

7.6.2 Using plan views of proposed layouts, checks for visibility in the horizontal plane ensure that views are not obscured by vertical obstructions.

7.6.3 Checking visibility in the vertical plane is then carried out to ensure that views in the horizontal plane are not compromised by obstructions such as the crest of a hill, or a bridge at a dip in the road ahead. It also takes into account the variation in driver eye height and the height range of obstructions. Eye height is assumed to range from 1.05 m (for car drivers) to 2 m (for lorry drivers). Drivers need to be able to see obstructions 2 m high down to a point 600 mm above the carriageway. The latter dimension is used to ensure small children can be seen (Fig. 7.17).

7.6.4 The SSD figure relates to the position of the driver. However, the distance between the driver and the front of the vehicle is typically up to 2.4 m, which is a significant proportion of shorter stopping distances. It is therefore recommended that an allowance is made by adding 2.4 m to the SSD.

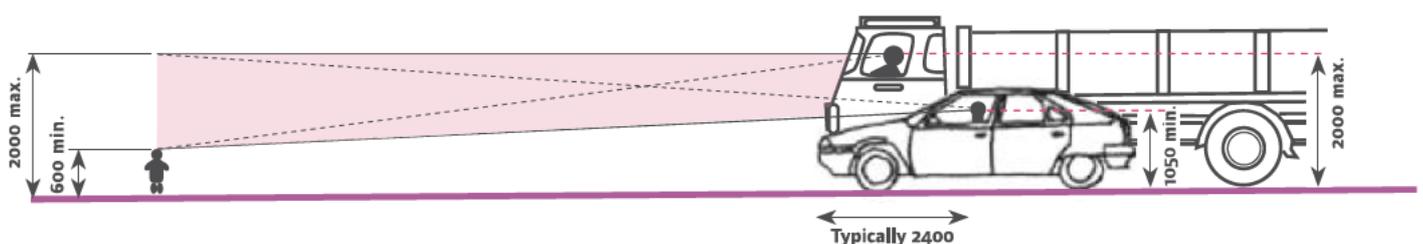


Figure 7.17 Vertical visibility envelope.

Manual for Streets 2



Wider Application of the Principles

2.8_ Context - Rural Areas

Common Street Type: Rural Roads and Lanes

2.8.1 Rural roads are an integral part of the landscape, often reflecting and preserving historic landscape features such as ancient routes or field boundaries and set within outstanding countryside. Elements such as hedges, verges, banks and fingerposts may contribute strongly to local character and historic significance.

Typical Characteristics

2.8.2 There is a considerable variation in the highway network running through rural areas from motorways to Green Lanes. The majority of other rural roads follow old pathways and boundaries and do not conform to present guidance on highway standards. Indeed to attempt to do so could be to the detriment of local character and lead to intrusion into some of our most outstanding landscapes.

In April 2008, Dorset County Council formally adopted a rural roads protocol setting out their new approach on how to manage the roads in Dorset's countryside. The protocol's main principle is to use the local setting and distinctiveness of the rural environment to guide their management decisions. All future work on rural roads and streets will:

- Balance the safety and access needs of users with care for the environment and the quality of our landscape and settlements
- Use local materials and design schemes to be sympathetic to the character of our rural settlements
- Consider the landscape adjacent to the road and address ecological and historical needs and interests
- Address sustainability and consider the potential impacts of climate change, ensuring that our management of rural roads and streets does not create or contribute to foreseeable environmental problems in the future
- Keep signs, lines and street furniture to the minimum needed for safety and remove intrusive roadside clutter
- Where signs and markings are needed, we will adapt standard designs wherever possible to make them the best possible fit with local surroundings
- Encourage and test innovative approaches and make full use of the flexibility in national regulations, standards and codes of practice

2.8.3 A number of local authorities have developed policies sensitive to local context. Dorset County Council's¹⁸ approach to the design and management of rural highways is given in the Example below.

Movement and Place Function

2.8.4 Outside villages most rural roads connect small settlements and farms to local centres and the wider highway network. Their predominant function is movement, although there is often a leisure aspect to this; walking, cycling and equestrian. Some routes also attract car drivers on leisure routes such as in the National Parks.

2.8.5 Whilst these routes are largely subject to the national speed limit, their curvilinear nature can encourage speeds well below 60mph, the clear exception being the busier and more direct 'A' roads. However most of these routes are single carriageways where the speed of HGVs is limited to 40mph, and as a result they often act as a constraint on car speed.

2.8.6 On the more lightly trafficked rural lanes Devon County Council¹⁹ offers the good practice advice in the Example overleaf.

There is a large network of minor roads in Devon. Most junctions are T-junctions or crossroads and on occasions, a road has a split junction, leaving a small grass area between the carriageways. Junction improvements are sometimes necessary on safety grounds or as a result of development in an area. Whilst legislation sometimes requires specific standards to be met, some regulations do allow flexibility. The design of any new scheme should use the existing topography, vegetation, buildings and other structures, so that they appear an integral part of the landscape and historic road pattern. Solutions should reinforce local identity by careful choice of detailing, materials and street furniture.

Roundabouts are normally associated with urban areas or major roads, where the volume of traffic means they are considered to be essential. Regulation requires lighting, mandatory signs and lines to a satisfactory standard at roundabouts and this can be inappropriate in rural areas. In view of this, other junction treatments are preferable.

Junction improvements will only be considered where there is a proven safety need and the introduction of a roundabout should only be considered as a last resort.

Wherever possible, the area of carriageway should be reduced and the road realigned rather than use large areas of hatching.

There should be a presumption of retaining trees, hedges and verges including any central grass areas.

If a traditional Devon hedge needs to be removed for the realignment of a road, the practicality of translocation/moving the hedgebank should be considered in the first instance. Where this is not feasible, the next option should be to carefully dismantle and reconstruct the hedge. Archaeological recording and supervision may be required.

Lighting will not be installed on roads outside settlement boundaries unless there is a proven and overriding safety reason which cannot be addressed by other means. Where considered necessary, the highway authority will consult with landscape managers during the design stage. The preferred option is to install high-reflective non-illuminated signs.

Signing will be kept to a minimum and will be located with a view to minimising the impact on the landscape and the rural character of the area, as well as with a view to safety and utility.

Detailing and choice of materials will respect the local environment and standard solutions or components will not always be appropriate. Kerbing of central grass areas should be avoided. Chevron blocks around the edge of the roundabout are not appropriate and should not be used.

2.9_ Context: Urban and Rural Settlements

Street Types: Shared Space



New Road, Brighton

Typical Characteristics

2.9.1 Shared Space is predominantly an approach to highway design and is introduced for a range of purposes including:

- improving the built environment;
- giving people freedom of movement rather than instruction and control;
- improving the ambience of places;
- enhancing social capital;
- enhancing the economic vitality of places; and
- safety.

2.9.2 Many local authorities' objectives can be addressed through pedestrianisation. However, for practical purposes and in some settings, Shared Space may be more desirable for a number of reasons.

2.9.3 A characteristic of many Shared Space schemes is the minimal use of traffic signs, road markings and other traffic management features. With less or no traffic management, or clear indication of priority, motorists are encouraged to recognise the space as being different from a typical road and to react by driving more slowly and responding directly to the behaviour of other users (including other motorists) rather than predominantly to the traffic management features. This approach takes place against a backdrop of concern at the proliferation of features such as pedestrian guardrailing, traffic signs and highway regulation which, it is argued, reduce users' understanding of the complexity of the street environment and their personal responsibility for safe and appropriate behaviour.

3_ Highway Design, Risk and Liability

3.1_ The Need For Additional Clarification

3.1.1 MfS1 sought to assuage fears of some highway authorities, when considering more innovative designs at variance with established practice, concerning liability in the event of damage or injury. Whilst this was accepted by some it is clear that there is a need for more guidance on risk and liability.

3.1.2 Since the publication of MfS1, the UK Roads Board has published a second edition of Highway Risk and Liability Claims (HRLC)²¹. All those with an interest in highway design are strongly recommended to read this comprehensive document.

3.1.3 The document is quoted below more extensively than was its predecessor in MfS1 to raise awareness of the issues and demonstrate how few cases arise due to alleged defects in design and to give greater confidence to designers to respect local context and move away from a standardised, rigid approach.

3.1.4 The HRLC document sets out the legal uses and obligations of users of the highway.

Uses of the Highway

3.1.5 When discussing the rights to use a highway, reference should be made to the following:

"the public highway is a public place which the public may enjoy for any reasonable purpose, provided the activity in question does not amount to a public or private nuisance and does not obstruct the highway by unreasonably impeding the primary right of the public to pass and repass" Lord Chancellor, DPP v Jones 1999

3.1.6 This shows that the public highway is not merely a piece of infrastructure for moving from place to place. It is a place in its own right that can be used for any purpose that does not cause nuisance or obstruction.

3.1.7 The Highway Code²² provides a guide to the use of the highway and confirms that users must behave reasonably, taking into account other people and local conditions.

3.1.8 Key guidance from the Highway Code states that people must not drive dangerously, without due care and attention or without reasonable considerations for other road users. It goes on to say:

'Adapt your driving to the appropriate type and condition of road you are on. In particular

- *do not treat speed limits as a target. It is often not appropriate or safe to drive at the maximum speed limit*
- *take the road and traffic conditions into account. Be prepared for unexpected or difficult situations, for example, the road being blocked beyond a blind bend. Be prepared to adjust your speed as a precaution*
- *where there are junctions, be prepared for road users emerging*
- *in side roads and country lanes look out for unmarked junctions where nobody has priority*
- *be prepared to stop at traffic control systems, road works, pedestrian crossings or traffic lights as necessary*
- *try to anticipate what pedestrians and cyclists might do. If pedestrians, particularly children, are looking the other way, they may step out into the road without seeing you'* (Highway Code Rule 146)

3.1.9 It is clear that the Highway Code requires drivers to have regard for other road users particularly children, which is confirmed in the case of Russell v Smith:

"The Highway Code requires motorists to take particular care in looking out for children in built up areas and to travel at an appropriate speed. In the case of Russell v. Smith and Another 2003 EWHC, a motorist, Miss Smith collided with a young cyclist who had emerged into her path from a side road. Failure to observe a provision of the Highway Code is something which a court can take into account when assessing liability, and does not involve fault on the part of the driver. The court judged that Miss Smith had failed to observe the provisions of the Highway Code that requires drivers to have regard to the safety of children in a residential area, and was held partly liable."

3.1.10 There has been a long standing principle, as restated in the Gorrings v Calderdale ruling, that drivers are responsible for their own safety.

"The overriding imperative is that those who drive on the public highways do so in a manner and at a speed which is safe having regard to such matters as the nature of the road, the weather conditions and the traffic conditions. Drivers are first and foremost themselves responsible for their own safety".

"Many more accidents occur on the wider, and should be, safer roads than upon the so-called dangerous ones. I have in some cases, widened turns to render them safer, but more accidents have ensued owing to motorists taking the turns much faster."

H T Chapman, County Surveyor of Kent, September 1932

In 1954 in the paper 'Road Design in relation to Traffic Movement and Road Safety Proceedings of the Institution of Municipal Engineers', the author R J Smeed reported on research that had found a relationship between increased carriageway width and increases in the average speed of traffic, and conversely reductions in radius of curvature of highways and reductions in speed of traffic.

Risk Compensation

3.1.11 Risk compensation, whereby a driver is assumed to adjust behaviour in response to perceived changes in risk is reflected in MfS1 but there is evidence of this dating back to the 1930s: (See Example above).

3.1.12 The evidence based approach set out in MfS1 used the research findings of 'The Manual for Streets: Evidence and Research', TRL661²³, in concluding that a number of environmental factors influence driver behaviour to bring about this compensation. (See **Chapter 8**.)

Design, Defects and Liability

3.1.13 Streetscape and highway design have been devolved to local authorities. However, some highway authorities do not take advantage of this and can shy away from developing local guidance for fear of litigation. However, HRLC refers to a survey it conducted to assess the scale of cases relating to defects in design.

"There have been very few cases relating to alleged defects in design. A request went out to members of the CSS [now ADEPT] in 2008 for cases that had gone against the authority on the basis of design. There was no significant history. There was a small number of live cases that were tending to focus on trip hazards resulting from design. There is of course nothing stopping an individual making a claim for a design defect, however the instances seem rare and the chances of success remote."

3.2_ Design Guidance and Professional Judgement

3.2.1 For some time there have been concerns expressed over designers slavishly adhering to guidance regardless of local context. Local Transport Note 1/08 specifically advises:

"Regulations and technical standards have a key role in the delivery of good design, but, if used as a starting point, they may serve to compromise the achievement of wider objectives. A standards-based template view of road junction design, for example, is inappropriate". LTN 1/08 3.2.1²⁴

3.2.2 In reality, highway and planning authorities may exercise considerable discretion in developing and applying their own local policies and standards.

"Designers are expected to use their professional judgement when designing schemes, and should not be over-reliant on guidance". LTN 1/08 3.2.3²⁴

"Available guidance is just that, guidance, and cannot be expected to cover the precise conditions and circumstances applying at the site under examination." LTN 1/08 3.2.2²⁴

3.2.3 On this issue HRLC states:

"The authors of guidance, how ever accomplished, will not be cognizant of the site and situation in question. It would be neither reasonable nor rational to presume that anyone could produce an optimal design in abstract. The informed judgement of trained professionals on-site, should logically take precedence over guidance."

10_Visibility

10.1_Introduction

10.1.1 This section of MfS2 incorporates Section 7.5 of MfS1. It is based on a combination of the research carried out by TRL²³, the research carried out by TMS Consultancy for MfS2⁶⁶, a review of recent research and international standards and the outcome of public inquiries since MfS1 was published (see Example below).

10.1.2 Sight distance parameters can be based on various models, such as stopping sight distance, overtaking distance or gap acceptance. UK practice generally focuses on Stopping Sight Distance (SSD). The effect of sight distance on the capacity of priority junctions is discussed in **Chapter 9** above.

10.1.3 This section provides guidance on SSDs for streets where 85th percentile speeds are up to 60 kph (37mph). This will generally be achieved within 30mph limits and may be achieved in some 40mph limits.



Inspectors at public inquiries have accepted that SSD guidance in MfS1 applies to non-residential streets. At an appeal into a development of some 100 dwellings, accessed from the B5215 Leigh Road in Wigan, the Inspector concluded that MfS1 did apply, notwithstanding the volume of traffic (approximately 1,700vph peak times) or the classification of the highway (part of the Strategic Route Network).

10.1.4 Stopping sight distance (SSD) is the distance drivers need to be able to see ahead and they can stop within from a given speed. It is calculated from the speed of the vehicle, the time required for a driver to identify a hazard and then begin to brake (the perception-reaction time), and the vehicle's rate of deceleration. For new streets, the design speed for the location under consideration is set by the designer. For existing streets, the 85th percentile wet-weather speed is used.

10.1.5 The basic formula for calculating SSD (in metres) is:

$$SSD = vt + v^2/2(d+0.1a)$$

where:

v = speed (m/s)

t = driver perception-reaction time (seconds)

d = deceleration (m/s²)

a = longitudinal gradient (%)

(+ for upgrades and - for downgrades)

10.1.6 The Desirable Minimum SSDs in general use prior to MfS1 were based on a driver perception-reaction time of 2 seconds and a deceleration rate of 2.45 m/s² (equivalent to 0.25g, where g is acceleration due to gravity (9.81 m/s²)). The Absolute Minimum SSD values kept the same reaction time of 2 seconds, but assumed a deceleration rate of 3.68 m/s² (0.375g).

10.1.7 The SSD values recommended in MfS1 were based on a perception-reaction time of 1.5 seconds and a deceleration rate of 0.45g (4.41 m/s²). This value is appropriate for cars and other light vehicles, but heavy goods vehicles and buses have different deceleration characteristics. When deciding whether to carry out separate checks for cars, HGV and bus SSDs, highway authorities should consider the following factors:

- Volume of HGVs and buses
- Proportion of HGVs and buses
- Presence of priority lanes which may enable higher bus/HGV speeds

10.1.8 As a guide, it is suggested that bus/HGV SSD should not need to be assessed when the combined proportion of HGV and bus traffic is less than 5% of traffic flow, subject to consideration of local circumstances.

10.1.9 Based on international vehicle standards (see Example) HGVs must be able to achieve peak deceleration rates of at least 0.509g. However, allowing for the delay in the maximum effectiveness of air braking systems, overall minimum stopping distances are also specified which reduce the minimum overall deceleration rate^a under the regulations to some 0.36g. Real life tests carried out by ROSPA (also see Example) indicate that these values are likely to be exceeded in practice and therefore the pre-MfS1 Absolute Minimum value of 0.375g is recommended for HGVs. These average deceleration rates already allow for the time taken for air braking systems to apply and therefore the same reaction time of 1.5 seconds should be used.

10.1.10 For buses, the limiting design factor is passenger comfort and safety rather than the ability of the vehicle to stop, and therefore for buses, the recommended maximum deceleration rate is the same as the pre-MfS1 Absolute Minimum value of 0.375g, as used for the pre-MfS1 Absolute Minimum SSD values.

^a The minimum overall deceleration rate means the deceleration rate, expressed as a uniform value, from the instant when the brakes begin to be applied when the vehicle stops, required by the standards.

10.1.11 Where designers wish to determine different SSD values for HGVs and buses it will be necessary to use appropriate design speeds for these classes of vehicle. Where SSD is being calculated for existing highways, actual 85th percentile values for these types of vehicles should be measured and the worst case SSD be used for horizontal measurements of visibility.

10.1.12 Based on free flow vehicle speeds travelling in 30mph limits given in Transport Statistics Bulletin 2008⁴⁵, buses travel at 90% of the average speed for all vehicles.

HGV Braking Performance

Minimum standards for lorry braking systems are set out in the UNECE Vehicle Regulation 13⁶⁷, which requires that the mean fully developed deceleration rate achieved by the braking system (with the engine disconnected) should be at least 5.0m/s² (0.509g). In addition, the stopping distance of the vehicle must be no more than $0.15v+v^2/130$, where v=vehicle speed in kph (up to 60kph), and $0.15v+v^2/103.5$ (v up to 90kph).

At 50kph the maximum allowable stopping distance is therefore 26.7m, and this is equivalent to a minimum overall braking rate of 3.6m/s² or 0.37g.

A series of real life braking tests were carried out by ROSPA using a wide range of vehicles in 2001, as reported in <http://www.rosipa.com/RoadSafety/AdviceAndInformation/Driving/hgv-truck-braking-systems.aspx>

Deceleration rates have been calculated from the results of these tests which show that the minimum overall braking rate achieved was 0.44g, for a 36 tonne Foden vehicle, which stopped in 20.68m from 30mph. (One vehicle did take longer to stop, at 27m, but this was on a down slope). Cars were also tested by ROSPA, and the best performing of these was a Ford Mondeo, which stopped from 30mph in 7.14m, an overall deceleration rate of 1.27g.

10.1.13 In summary, recommended values for reaction times and deceleration rates for SSD calculations are given in **Table 10.1** below and the resulting SSD values for initial speeds of up to 120kph are shown on the graph beneath.

Design Speed	Vehicle Type	Reaction Time	Deceleration Rate	Comments
60kph and below	Light vehicles	1.5s	0.45g	
	HGVs	1.5s	0.375g	See 10.1.9
	Buses	1.5s	0.375g	See 10.1.10
Above 60kph	All vehicles	2s	0.375g (Absolute Min SSD)	As TD 9/93
	All vehicles	2s	0.25g (Desirable Min SSD)	As TD 9/93

Table 10.1: Summary of Recommended SSD Criteria

10.4_ Visibility At Priority Junctions

10.4.1 The visibility splay at a junction ensures there is adequate inter-visibility between vehicles on the major and minor arms.

10.4.2 It has often been assumed that a failure to provide visibility at priority junctions in accordance with the values recommended in MfS1 or DMRB (as appropriate) will result in an increased risk of injury collisions. Research carried out by TMS Consultancy for MfS2⁵⁶ has found no evidence of this (see research summary below). Research into cycle safety at T-junctions found that higher cycle collision rates are associated with greater visibility⁵⁵.

High Risk Collision Sites and Y Distance Visibility

Introduction

The accepted approach to visibility at priority junctions has been to provide a minimum stopping sight distance value appropriate to a particular design speed. The assumption made by some designers and road safety auditors is that this value provides a minimum road safety requirement, and that collision risk will increase if the SSD is not achieved.

The purpose of this research was to examine this assumption and to identify whether or not a direct relationship can be established between variations in Y distance SSD and collision frequency at priority junctions.

Methodology

Site Selection

A series of “high risk” priority junctions was identified as the basis for research. Uncontrolled crossroads and T-junctions were selected for all classes of road throughout all 20, 30 and 40mph speed limits in Nottinghamshire, Sandwell, Lambeth, and Glasgow. For each area a list of all non-pedestrian collisions was ranked in descending order of collision total for a recent five-year period, with over 1500 collisions listed in total. Each location was then analysed in detail to identify specific collision characteristics.

Collision Analysis

Collisions involving vehicles emerging from junctions into the path of vehicles on the main road, together with nose-to-tail shunts on the minor road were identified as the type of incident that could have been caused by “poor visibility”. The locations were then ranked in descending order of these types of crashes, and site visits were carried out at the “worst” sites.

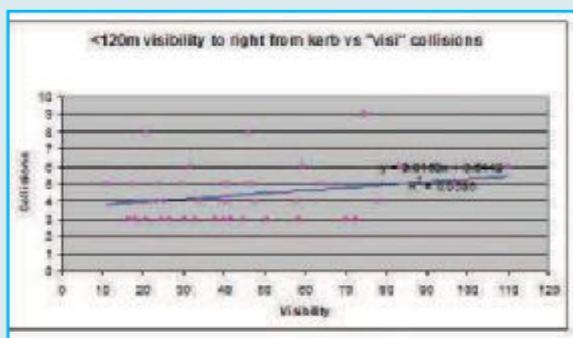
In addition to the 626 potential “poor visibility” collisions, a record was made of 203 collisions involving main road shunts, 46 collisions involving main road bus passengers, 22 collisions involving main road large goods vehicles, and 216 collisions involving main road two-wheeled vehicles. There is a concern that these types of collisions could be over-represented at locations with poor visibility.

Site Visits

Two investigators visited each location, and measured visibility to the left and right, from a point on the side road, 2.4m back from the main road channel line. Visibility was measured from a height of 1.05m, to a point at the kerb edge and a second point 1m out from the kerb edge, where observations showed that visibility increased.

Summary of Findings

- “High risk” sites were defined as locations that had three or more potential poor visibility collisions - in a five year period (94 in total). Of these 90 were on 30mph roads, with 3 on 40mph roads. At 55 of the 94 locations the worst case visibility (either to the left or right) was restricted to less than 120m. Thus in relation to the total number of uncontrolled junctions that exist, the proportion of “high risk” sites where visibility is less than that recommended for 70kph in DMRB is likely to be very low. It is possible that some former high risk priority junctions have been converted to other forms of junction control.
- In two thirds of the cases where visibility was less than 120m, the restriction was due to parked vehicles or street furniture. It is not possible to determine whether the parking was present at the time of the collision.
- Linear regression to compare potential poor visibility collisions with Y distance has a very low R² value, which shows that the variation in collision frequency was explained by factors other than Y distance visibility, for a large number of different situations. Therefore Y distance cannot be seen as a single deterministic factor at these high-risk collision locations (see example graph below).



Visibility measured to right, to nearside kerb.

	No. of sites	No. collisions	Collisions per year	Collisions per site per year
0-20m	4	16	3.2	0.80
20-40m	14	58	11.6	0.83
40-60m	15	64	12.8	0.85
60-80m	5	24	4.8	0.96
80-100m	2	11	2.2	1.10
100-120m	1	6	1.2	1.20
120m+	48	208	41.6	0.87

- A series of collision types at high risk locations where Y distance was less than 45m were compared with locations with more than 45m visibility. There were no statistically significant differences between the two sets of data. The data analysed included main road bus and large goods vehicle collisions, and the research did not find high numbers of collisions involving these types of vehicles at low visibility sites.

Collision type	No & % In sites <45m vis	No & % In sites >45m vis
Potential visi collisions in dark	40 (31.75%)	90 (30.3%)
Main road shunts	24 (8.79%)	50 (9.11%)
Bus passenger	10 (3.66%)	10 (1.82%)
Main road HGV	1 (0.37%)	5 (0.91%)
Main road two-wheeled.	38 (13.92%)	85 (15.58%)

Conclusions

- This study has been unable to demonstrate that road safety concerns regarding reduced Y distance are directly associated with increased collision risk at “high-risk” urban sites;
- Previous research for MfS1 demonstrated that main road speed is influenced by road width and forward visibility. Many of the locations in this study were straight roads with good forward visibility. The ability of the driver to stop is likely to be affected by more than just what is happening in the side road and an understanding of the factors influencing main road speed is important when assessing visibility requirements.

10.5_ X and Y Distances

Measurement of X and Y distances

10.5.1 The distance back along the minor arm from which visibility is measured is known as the X distance (Figure 10.2). It is generally measured back from the 'give way' line (or the main road channel line if no such markings are provided).

10.5.2 This distance is normally measured along the centreline of the minor arm for simplicity, but in some circumstances (for example where there is a wide splitter island on the minor arm) it will be more appropriate to measure it from the actual position of the driver.

10.5.3 The Y distance represents the distance that a driver who is about to exit from the minor arm can see to the left and right along the main alignment. For simplicity it has previously been measured along the nearside kerb line of the main arm, although vehicles will normally be travelling at a distance from the kerb line. Therefore a more accurate assessment of visibility splay is made by measuring to the nearside edge of the vehicle track. The measurement is taken from the point where this line intersects the centreline of the minor arm (unless, as above, there is a splitter island in the minor arm).

10.5.4 When the main alignment is curved and the minor arm joins on the outside of a bend, another check is necessary to make sure that an approaching vehicle on the main arm is visible over the whole of the Y distance. This is done by drawing an additional sight line which meets the kerb line at a tangent.

10.5.5 Some circumstances make it unlikely that vehicles approaching from the left on the main arm will cross the centreline of the main arm - opposing flows may be physically segregated at that point, for example. If so, the visibility splay to the left can be measured to the centreline of the main arm.

Recommended values for X and Y distances

10.5.6 An X distance of 2.4m should normally be used in most built-up situations, as this represents a reasonable maximum distance between the front of a car and the driver's eye.

10.5.7 Longer X distances enable drivers to look for gaps as they approach the junction. This increases junction capacity for the minor arm, and so may be justified in some circumstances, but it also increases the possibility that drivers on the minor approach will fail to take account of other road users, particularly pedestrians and cyclists. Longer X distances may also result in more shunt collisions on the minor arm. TRL Report No. 184⁶⁸ found that collision risk increased with greater minor-road sight distance.

10.5.8 A minimum X distance of 2m may be considered in some slow-speed situations when flows on the minor arm are low, but using this value will mean that the front of some vehicles will protrude slightly into the running carriageway of the major arm, and many drivers will tend to cautiously nose out into traffic. The ability of drivers and cyclists to see this overhang from a reasonable distance, and to manoeuvre around it without undue difficulty, should be considered. This also applies in lightly-trafficked rural lanes.

10.5.9 The Y distance should be based on the recommended SSD values. However, based on the research referred to above, unless there is local evidence to the contrary, a reduction in visibility below recommended levels will not necessarily lead to a significant problem.

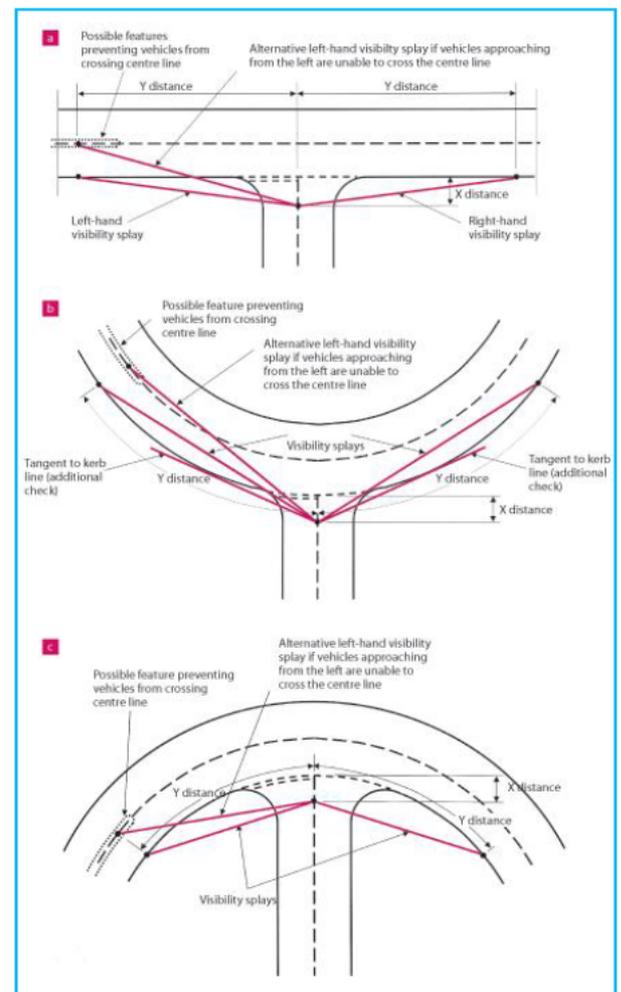
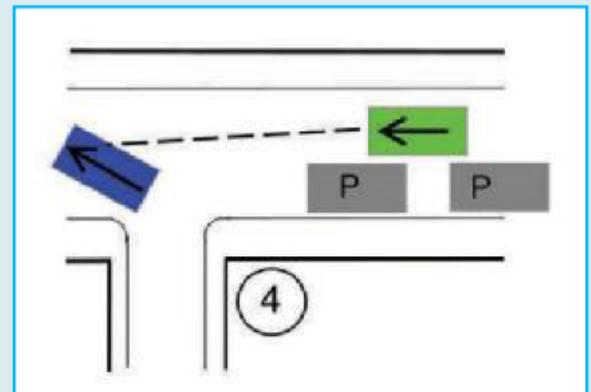
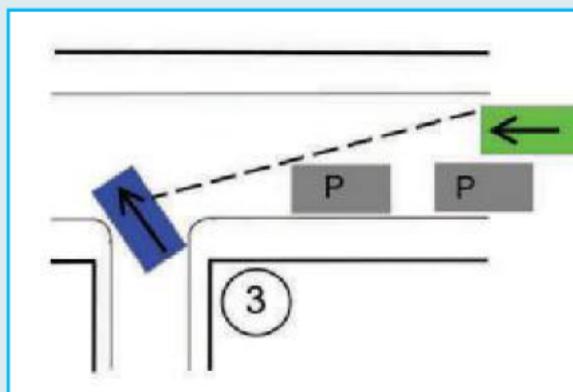
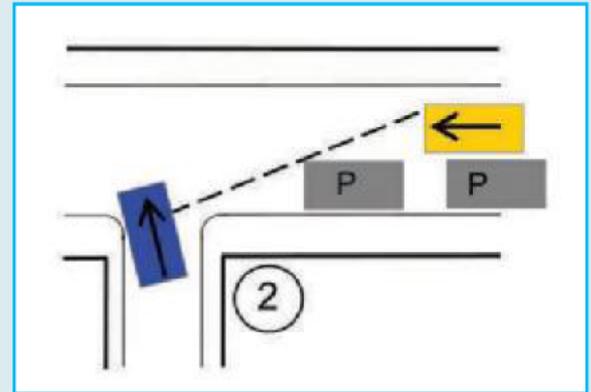
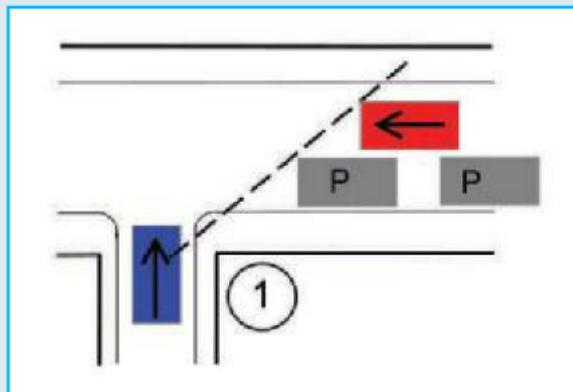


Figure 10.2

10.7_ Obstacles To Visibility

10.7.1 Parking in visibility splays in built-up areas is quite common, yet it does not appear to create significant problems in practice. Ideally, defined parking bays should be provided outside the visibility splay. However, in some circumstances, where speeds are low, some encroachment may be acceptable. (See Example below.)

10.7.2 The impact of other obstacles, such as street trees and street lighting columns, should be assessed in terms of their impact on the overall envelope of visibility. In general, occasional obstacles to visibility that are not large enough to fully obscure a whole vehicle or a pedestrian, including a child or wheelchair user, will not have a significant impact on road safety.



At urban junctions where visibility is limited by buildings and parked cars, drivers of vehicles on the minor arm tend to nose out carefully until they can see oncoming traffic, and vice-versa.

In the images above, the blue car moves forward slowly until it can see far enough past the parked vehicles to see that the gap to the next oncoming vehicle is long enough for it to pull out. Drivers on the major route will also be able to see the vehicle pulling forward slowly and may slow down or stop to allow it to pull out.

The Hurlstone Partnership

Appendix JPH-C

Speed Survey Summaries

10430		SWANLEY								
		MAY 2021			Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site	Location	Direction	Start Date	End Date						
Site No: 10430001	Site 1 - Hockenden Lane, Swanley W of Cookham Rd 51.401983 0.149525	Channel: Eastbound	Tue 11-May-21	Mon 17-May-21	30	3884	616	555	25.7	22.1
		Channel: Westbound	Tue 11-May-21	Mon 17-May-21		3206	503	458	25.1	21.1



10430		SWANLEY								
		MAY 2021			Posted Speed Limit (PSL)	Total Vehicles	5 Day Ave.	7 Day Ave.	Average 85%ile Speed	Average Mean Speed
Site	Location	Direction	Start Date	End Date						
Site No: 10430002	Site 2 - Hockenden Lane, Swanley E of Cookham Rd 51.402016 0.150700	Channel: Eastbound	Tue 11-May-21	Mon 17-May-21	30	4307	681	615	31.0	25.2
		Channel: Westbound	Tue 11-May-21	Mon 17-May-21		3607	565	515	32.7	26.7



The Hurlstone Partnership

Appendix JPH-D

Figure 1



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Rosedale, Hockenden Lane, Swanley
Proposed Visibility Splays from Site Access Based on Speed Survey Data
Illustrative Layout

DRAWN BY **JPH**

JOB No. **210202**

DATE **May 2021**

REV	AMENDMENTS	DATE

SCALE **1:500 @ A3** DWG No. **Figure 1**