

Land to the south of HSDC, Waterlooville

Stage 1 Road Safety Audit : Designer's Response

Internal Site Layout

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Client	Places for People
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1 Introduction

- 1.1 This document provides the Designer's Response to a Stage 1 Road Safety Audit (RSA) undertaken by David A Graham Associates Limited (dated 17 February 2023) in respect of the proposed internal highway layout for a development of 102 residential units, replacing part of the car park for South Downs College, College Road, Havant.
- 1.2 The RSA presented recommendations for the internal layout, which will be dealt with in Section 2.

2 Problems and Responses

PROBLEM

Location – General: Proposed internal layout of residential development

Summary: Potential for lack of awareness of design parameters restricting carriageway widths for visiting and resident drivers, riders and pedestrians which could lead to sideswipe type collisions between opposing vehicles and the potential for collisions with passing pedestrians

The Audit team understand from the Audit brief that the design parameters described in 'Streets for a Healthy Life' (Homes, England, July 2022) will be employed with regard to the highway layout for this residential development. Amongst other things, this will lead to there being narrower road widths at bends. Whilst the Audit team appreciate the principles of this approach, they are concerned that drivers and riders entering the new development, particularly those that are not resident, may be unfamiliar with the principles of this approach, particularly when they approach bends to the extent that they could be involved in heavy braking, shunts and sideswipe type collisions with vehicles from the opposing direction. There could also be an increased risk of collision with passing pedestrians.

RECOMMENDATION

The Audit team feel that it will be important for drivers and riders entering the new development to immediately appreciate the consequences of the design parameters employed in the highway layout design. To achieve this the Audit team would recommend that the internal layout is designated at the very least as a 20mph zone, but perhaps more feasibly, as a Home Zone where the onus is on drivers and riders to give way to pedestrians at very low speeds which should accommodate situations where road widths at bends are narrower than approaching drivers and riders might anticipate.

Response:

- 2.1 The on-site highways have been designed with the aim of limiting traffic speeds to 20mph or below.
- 2.2 The layout is dominated by a series of 90° bends, with the short stretches of straight alignment interrupted by speed tables with contrasting surfacing, creating both physical and visual aids to encourage speed reduction.

- 2.3 Manual for Streets 2 states at 7.4.3 that, to achieve speeds of 20mph or less, speed controlling features should be placed no more than 70m apart. All straight, un-treated lengths of street within the proposed development are no more than 55m apart, therefore the proposals comply with this guidance on achieving 20mph speeds.
- 2.4 The sharp bends have been designed to permit forward visibility of 17m, whilst at the same time reducing speeds to a commensurate 14mph or less. The visibility provided ensures that drivers can see approaching vehicles and/or pedestrians. The bends have not been widened to accommodate a passing refuse vehicle in accordance with 'Streets for a Healthy Life', as it is expected that refuse collection would be conducted by a single vehicle travelling in a circular route. Nevertheless, design drawings have been provided (1017-ATR-105-B) which show intervisibility between opposing vehicles that would provide sufficient opportunity for vehicles to wait in advance of a bend for the other to pass.
- 2.5 The main street within the site is flanked, for the most part, by perpendicular parking bays. The presence of parking bays assist in reducing speeds, as evidenced in TRL 661 'The Manual for Streets : evidence and research' (TRL 2001). It goes on to state that *"...parking should be incorporated within the design of residential streets as it can act as a traffic calming measure"*.
- 2.6 The presence of trees at intermittent intervals along the main street further contributes to a reduction in driver speeds by creating driver perception of a narrower road. In respect of the application site, this would have the effect of creating perceived 'pinch-points' which also serve to reduce vehicle speeds. Significant reductions (up to 45%) in the number of accidents have been recorded on routes where trees are planted adjacent to the highway. This is evidenced in a meta-analysis published by the University of Washington (Wolf, K.L. 2010. Safe Streets - A Literature Review. In: Green Cities: Good Health).
- 2.7 It is considered, therefore, that the proposed layout design incorporating regular bends, raised tables with contrasting surfacing, planting, and car parking will encourage speeds of no more than 20mph.
- 2.8 Regardless, the RSA includes the recommendation that the development is designated as a 20mph zone despite a combination of effective traffic calming features. It is the intention that beyond the site access the internal street network remains private, and the management company could implement any speed limit it sees fit in the future to complement the various physical features set out above.

- 2.9 With respect to designing the layout as a 'home zone', it is understood from the Highway Authority's Position Paper on Shared Space Streets (2018) that in residential areas they are preferred in mews or cul-de-sacs. As the main street in the development would form a looped arrangement, this would not be consistent with the Position Paper. Manual for Streets guidance contains no recommendations that shared space or home zone arrangements are necessary to achieve a target design speed of 20mph.
- 2.10 In conclusion, it is considered that the layout provides a number of features to encourage speeds at or below 20mph throughout the site.