
Proposed Residential Development, Angels Nursery, Barnham Highways & Transport Statement

Prepared on behalf of West Sussex County Council

August 2016

Introduction

This Highways and Transport Statement sets out current proposals for the redevelopment of land at Angels Nursery, Barnham in the context of recent planning consents and the sites planning history. This Highways and Transport Statement has been prepared on behalf of West Sussex County Council to accompany a full application for 95 dwellings at Angels Nursery.

This application follows the implementation of a scheme for 86 dwellings (BN/27/09 and BN/29/13). There is therefore an extant permission for 86 dwellings on the site with the principle of access and layout agreed. This application seeks consent for an improved scheme which will visually be more in keeping with the site's setting.

The land forms part of the West Sussex County Council Estate and formerly accommodated The Angels Nursery, a horticultural nursery smallholding. Figure 1 shows the location of the application site in relation to the surrounding highway and transport network.

Figure 1 **Site Location**



This Statement is prepared in support of the 2016 planning submission to Arun District Council for a total of 95 dwellings. The full schedule is included with the application but the overall development mix comprises:

Market Housing

- 13 x 2 bed dwellings
- 37 x 3 bed dwellings
- 17 x 4 bed dwellings

Affordable Housing

- 6 x 1 bed flats
- 22 x 2 bed dwellings

All movement access is taken via a ghost island right turn lane junction with the Yapton Road in line with the site's original Outline Planning Permission and provides for a total of 215 parking spaces, including 36 visitor parking spaces. The proposed layout is illustrated in the submitted Huw Thomas Architects layout and supporting drawings and the highways detail is appended to this Statement. The highway layout has been the subject of discussions with West Sussex County Council Highway Officers.

The site is identified in the 2012 SHLAA as site BN7 with commitments in 2013-16. As such the site forms part of the Council's five year housing land supply (5HYLS).

Planning History

The following section provides an overview of the site's recent planning history (in relation to residential development applications and permissions).

Planning Permissions

The site's former permitted use comprises a Horticultural Nursery with access taken via a priority junction / direct access with the B2233, Yapton Road. West Sussex County Council, as the landowner, consider the land to be surplus to the operational requirements of the Authority and have therefore promoted the site for residential development.

BN/27/09

In December 2009 (validated in January 2010) an outline application was submitted to Arun District Council for the redevelopment of the site for up to 95 residential dwellings. The application was refused in April 2010 for reasons relating to the development being outside the defined built up area; failure to demonstrate acceptable foul sewerage proposals; failure to demonstrate that the site can adequately accommodate the proposed number of dwellings; lack of S106 Agreement securing public infrastructure contributions and the percentage of Affordable Dwellings on site. There were no highway reasons for refusal of the outline application

The planning refusal was appealed and was dealt with by Public Inquiry in November 2010. The Inspector upheld the Appeal and Outline Permission was granted with a number of Planning Conditions through the Inspector's decision on 6 January 2011 under appeal reference APP/C3810/A/10/2132014.

BN/29/13

The outline residential permission granted by the Planning Inspector under BN/27/09 included planning conditions. In October 2013 a Reserve Matters application was submitted to discharge Conditions 18 & 19 of BN/27/09 which addressed matters of highways and transportation together with wider layout conditions. Cond. 18 required a Travel Plan to be submitted and approved prior to occupation and Cond. 19 required vehicle and cycle parking provision to be set out and provided prior to occupation.

A Residential Framework Travel Plan was submitted with BN/29/13 to discharge Condition 18 and details of the site layout demonstrating the acceptable movement and parking strategy relating to the layout was submitted to discharge Condition 19.

The Reserve Matters Application was approved, including relevant highway and access details in March 2014. Following the discharge of these (and other) pre-commencement conditions the reserved matters permission for 86 dwellings has been implemented by the commencement of drainage works on the site.

BN/2/14/PO

A 2014 application was submitted seeking variation to Planning Obligations under the original BN/27/09 varying the proportion of Affordable Housing from 40% to 30%, which was approved in February 2014.

BN/51/15

In November 2015 an application was submitted to vary the layout approved under the reserved matters application. This application was refused for three reasons as follows:

- The revised layout was considered to not be of a high standard of design.
- A number of outstanding highway concerns remained at the time of the decision.
- The application failed to include details of appropriate landscaping.

BN/58/15

In December 2015 an accompanying applications was submitted to add an additional nine dwellings to the layout. This application was refused on 22nd February 2016 for four reasons including the following:

- The form of the development was again considered to not be of a high standard of.
- The application sought to infill a drainage ditch on the boundary of the site for which it was contended that advance Land Drainage Consent was required.
- The application failed to include details of appropriate landscaping.
- A draft s106 planning agreement did not include associated contributions.

As a consequence of the 2015 refusal, the Applicants have been working with Arun District and West Sussex County Council officers through the pre-application enquiry process to prepare and submit revised proposals for the site.

Overall the principle of development for up to 95 dwellings with access via a ghost island right turn lane is established through BN/27/09 and the general form of development is established through BN/29/13 with this permission being implemented through the commencement of ground / drainage works.

In highway terms, the current application seeks to agree with West Sussex County Council Highways the principle of the access and internal layout of the site at this planning stage subject to further detailed design through the S278 / 38 process.

Policy Context

The site is identified in the 2012 SHLAA as site BN7 with commitments in 2013-16. As such the site forms part of the Council's five year housing land supply (5HYLS).

The overarching Policy for the site is contained in the National Planning Policy Framework (NPPF). Within these core planning principles paragraph 17 states that planning should "...actively manage patterns of growth to make the fullest possible use of public transport, walking and cycling, and focus significant development in locations which are or can be made more sustainable...".

Section 4, paragraph 32 of the NPPF requires developments that generate significant amounts of movement to be supported by a Transport Statement or Transport Assessment. There are requirements to ensure that:

- opportunities for sustainable transport modes have been taken up;
- safe and suitable access to the site can be achieved for all people; and
- cost effective improvements can be made, if required, to limit the significant impact of development.

Paragraph 32 continues to state that "...development should only be prevented or refused on transport grounds where the residual cumulative impacts of development are severe".

The application would also be considered in relation to the relevant saved policies within the Arun District Local Plan, most notably Gen 7 (The Form of New Development), Gen12 (Parking in New Development), Gen 14 (Public Transport) and Gen 15 (Cycling and Walking).

The emerging policy within the Draft Local Plan (2013 - 2028) is also considered which emphasises the need for acceptable planning applications to reduce the need to travel by car, improve public transport access, provide safe access to the highway network with pedestrian / cycle priority and provide appropriate levels of parking aiming to reduce congestion, tackle climate change, promote healthy lifestyles, providing safe access, promoting sustainable transport and where necessary, contributing to highway improvements.

The proposal is also considered against the West Sussex County Council Local Transport Plan (2011 - 2026) which seeks highways and transportation opportunities in promoting economic growth, tackling climate change, providing access to services, employment and housing together with promoting safety security and health through encouraging and facilitating public transport and other sustainable travel modes.

Pedestrian, Cycle Access and Public Transport Connections

It is generally considered that walking is the most important mode of travel at a local level and offers the greatest potential to replace short car trips, particularly those under 2km and it is commonly accepted that trips of under 800m would rarely be undertaken by motorised modes of transport. Cycling is also considered an important mode of transport for short to medium length trips and is considered a realistic alternative for journeys up to 5km.

Previous documents and planning decisions demonstrate there are a range of facilities and services within a reasonable walking or cycling distance of the site that would be considered essential to the day to day operation of a residential development including nursery care, primary and secondary schools, retail including food retail, healthcare, pharmacy and leisure opportunities.

Barnham local centre is within an approximate 600m walking distance of the site with Primary and Secondary Schools being within an approximate 1.5km and 1.2km walking / cycling distance respectively.

Pedestrian links from the site tie into the adjacent footway network providing continuous pedestrian routes into Barnham with the local centre providing appropriate crossing infrastructure. A second pedestrian / cycle link would provide access to the west of the site to the Barnham Parish Council Village Hall, recreation ground and alternative links towards the village centre and longer distance cycle routes.

While there is limited cycle infrastructure in the vicinity of the site, the Local Highway Network would be considered suitable for cycling given traffic flows, 30mph speed limit and lane widths particularly for those wishing to cycle into Barnham or to the train station as part of a longer journey. The site would provide a pedestrian / cycle link through the adjacent Village Hall site and would also provide a 3m pedestrian / cycle route through the site frontage with Yapton Road allowing cycling to take place off-road.

In addition to the pedestrian and cycle connectivity between the site and Barnham Centre, the site is within approximately 600m walking / cycling distance of Barnham Rail Station which provides fast and frequent services to a wide range of larger local and regional urban centres providing a range of education, employment, healthcare and retail uses.

In addition to rail services, the site is within approximately 150m walking distance of bus stops serving route 66 and 66A with this walking distance conforming to the Chartered Institute of Highways and Transportation guidelines recommending bus stops are within 400m walking distance of residential developments.

Overall it has been demonstrated and previously accepted that the site benefits from its location whereby journeys by sustainable modes of transport are a realistic and viable option and that occupiers of the proposed site are afforded a range of access choices reflective of the requirements of NPPF.

Access Proposals

Application BN/27/09 did not result in highway objections and the principle of the proposed ghost island right turn lane access to the site was subsequently approved through the Planning Appeal decision.

The proposed right turn lane requires the localised widening of the B2233 Yapton Road through the site frontage to provide for appropriate tapers and a turning lane into the site. The proposals also provide for a pedestrian refuge island / uncontrolled crossing point to the east of the access to provide for safe crossing of the Yapton Road.

The layout and design of the ghost island right-turn lane comprises a number of separate factors as detailed in Figure 7.4 of TD 42 / 95 (Major / Minor priority junction with a Ghost Island).

For a design speed of 50kph, a ghost island right-turn lane would require a turning length of 10m (TD 42 / 95, para. 7.32) to provide sufficient space for the turning vehicle to both wait for a suitable gap in traffic and turn safely.

This turning length is provided together with a deceleration length of 25m (TD 42 / 95, Table 7.5a) to allow vehicles to safely decelerate prior to turning right without interfering with through traffic in reflection of the design speed.

The deceleration length incorporates a direct taper length of 5m (TD 42 / 95, Table 7.4) which provides the length over which the width of the right turn lane is developed. The length of the direct taper forms part of the overall deceleration length.

The width of the ghost island turning lane is provided at 3m as a permissible relaxation (TD 42 / 95, para. 7.35) to provide for typical vehicles to wait safely within the lane in order to turn right.

The width of the ghost island turning lane determines the extent of the approach taper to the turning lane with a 50kph design speed normally requiring a taper of 1:20m (TD 42 / 95, para. 7.30 and Table 7.3) which would equate to a taper length of 60m for a 3m wide ghost island lane. However, given land constraints to the west, a minor departure in standards is contained within the proposed design with the approach taper being approximately 45m in length (a taper of 1:15m).

However, this departure is in the context of the other geometric elements of the junction being in accordance with standards and recognising that the proposed junction, while being designed to DMRB standards, is not on a principle / trunk road and therefore the strict application of DMRB standards is not necessarily required or desirable. The taper length to the east of the site designed to standard with a taper length of 60m.

Visibility from the access onto Yapton Road provides for 120m to both the east and west from a set-back distance of both 2.4m and 4.5m in compliance with the relevant design standards.

The access proposals include a pedestrian refuge island to the west of the access which provides a refuge width of 1.8m suitable for pedestrian use and the carriageway clearance between kerbs is provided at 3.5m to ensure larger vehicles (including agricultural vehicles and snowploughs are able to pass).

The site access leads into a 5.5m wide access road serving the site which splits to serve the internal layout that generally forms a looped access road serving the site and residential courtyards in a similar manner to the original Outline Planning Permission. The internal arrangement provides for 4.8m carriageway with adjacent footways at 1.8 - 2m. Where the internal layout forms key junctions with minor access routes, the junctions take the form of raised tables to influence low traffic speeds.

Small development mews courtyards are also served via the main access route with access taken via dropped kerb crossovers. Service routes through the site would be contained in footways or within service margins adjacent to shared surface areas. The final details of service margins will be set out and agreed at the detailed design stage subject to S278 / 38 Agreements.

The internal layout is designed to reflect the principles of Manual for Streets in providing an environment conducive to both vehicle and non-motorised users. The layout is designed to limit vehicle speeds to under 20mph through a combination of radius curves, raised table junctions and limited lengths of uninterrupted straight routes. All key internal junctions provide for visibility splays reflective of Manual for Streets for lightly trafficked residential streets at a minimum of 2m x 25m with adequate pedestrian visibility at all key junctions.

The access and internal layout have been tested for vehicle movements through vehicle tracking plots demonstrating a refuse vehicle is able to enter and exit the site in a forward gear, safely manoeuvre and turn through the site and in turning heads. Where the refuse vehicle is not able to manoeuvre (within the residential courtyards and mews), suitable refuse / bin collection areas are provided to allow occupiers to transfer bins to areas accessible to refuse operatives.

The site has also been assessed to demonstrate a fire and rescue vehicle is able to access the site.

Where pedestrian routes interface with vehicle routes there will be no obstructions to pedestrian visibility splays (i.e. no fences or hedges planted within visibility envelopes) and where cycle routes interface with the wider network, staggered barriers would be provided to slow cyclists and other users before they merge onto footways.

The original Application and Appeal (BN/27/09) included the submission of the Stage 1 Road Safety Audit of the proposed access arrangements together with a Designers Response accepting all issues raised in relation to the access with the Yapton Road. The current layout has been subject to further Stage 1 Road Safety Audit to consider the internal layout and interface with the Yapton Road. Again, all issues raised in the 2016 Road Safety Audit were considered and accepted through the preparation of a Designers Response.

The highway layout plan and supporting tracking drawings are appended to the Statement together with a copy of the 2016 Stage 1 Road Safety Audit provided at Appendix 1.

The extent of highway adoption is likely to extend to the site main access / circulatory route together with the east / west route to the southern end of the site. The smaller residential courtyards are not likely to be put forward for adoption as public highway. All areas for adoption will be set out and agreed at the detailed design stage, at which point the final detailed design of the internal layout and access will be submitted for S278 / 38 Approvals.

Parking Requirements

The proposals would provide an open market dwelling mix comprising 13 x 2-bed houses, 37 x 3-bed houses and 17 x 4-bed houses and an affordable dwelling mix of 6 x 1-bed flats and 22 x 2-bed houses.

The proposals provide parking on-site with between one and three allocated spaces per dwelling within the dwelling curtilage, or small parking courtyard areas together with a number of unallocated resident and visitor parking bays interspersed through the site.

The distribution of parking through the site is based on 1 space per dwelling for the 6 x 1 bed affordable flats and 22 x 2 bed affordable houses together with 16 unallocated / visitor parking bays serving these units. The Market units are provided with a parking ratio of 2 spaces per unit of the 13 x 2 bed houses and 37 x 3 bed houses and 3 spaces per unit for the 17 x 4 bed houses together with a total of 20 unallocated / visitor parking spaces through the open market areas. Overall the site would provide for a total of 215 parking spaces comprising 179 allocated and 36 unallocated / visitor spaces.

Parking standards for all new residential developments are set out within the Supplementary Planning Guidance provided by WSCC, updated in 2010 and this guidance has been applied to advise the parking distribution and strategy for the site as detailed in Table 1 and 2 below with the Parking Demand Tool Outputs provided at Appendix 2.

Within this, the WSCC Car Parking Demand Calculator has been designed to calculate the number of parking spaces required at new residential development on a site specific basis. The calculator interrogates levels of car ownership using information about the location (ward), Census and other survey data, unit type, unit tenure, unit size and the number of allocated spaces.

Table 1 Summary of WSCC Car Parking Demand Calculator (28 Affordable Dwellings)

Affordable Units	Allocated for Residents (Calculator)	Unallocated for Residents / visitors (Calculator)	Allocated Provided	Unallocated / Visitor Provided
1 Bed Flat (x 6)	6	2	6	Through site
2 Bed House (x 8)	8	4	8	Through site
3 Bed House (x14)	14	10	10	Through site
Total	28	16	28	16

It is clear that the parking provision for the affordable units is compliant with the current WSCC standards and would be capable of accommodating the anticipated demand including unallocated resident and visitor parking demand and would not be likely to result in any overspill into the adjacent areas.

Table 2 Summary of WSCC Car Parking Demand Calculator (67 Open Market Dwellings)

Open Market Units	Allocated for Residents (Calculator)	Unallocated for Residents / visitors (Calculator)	Allocated Provided	Unallocated / Visitor Provided
2 Bed House (x 13)	26	6	26	Through site
3 Bed House (x 37)	74	7	74	Through site
4 Bed House (x17)	51	7	51	Through site
Total	151	20	151	20

It is again clear that the parking provision for open market units on the site is compliant with the current WSCC standards and would be capable of accommodating the anticipated demand including unallocated resident and visitor parking demand.

All parking bays are a minimum of 4.8m x 2.4m and all parking bays have a minimum of 6m clear space to the rear to allow for safe manoeuvring and where garages are provided the space to the front of the garage provides a minimum of 6m. Where spaces are located adjacent to boundary walls or vertical features, additional clearance is provided to allow for entry and exit.

Of note is the provision of minimum 6m x 3m internal dimensions to garages together with some garages providing internal dimensions of 5 x 5m which provides further internal storage space in addition to space to keep a car.

Cycle parking provision would be provided within the curtilage of the dwellings in the form of garages, lockable sheds or cycle stores with the level of available cycle storage space / cycle parking being compliant with the WSCC Standards.

Summary & Conclusions

This Highways and Transport Summary report sets out the current proposals for the proposed redevelopment of the Angels Nursery, Barnham in the context of a recent planning permissions. The current proposals would see the land to the south of the B2233 Yapton Road developed to provide a total of 95 residential dwellings under Use Class C3 with vehicle access taken from Yapton Road. As set out in this report the following can be concluded:

- The subject site is well located in terms of proximity and access to local amenities in addition to easily accessible public transport services which provide a realistic opportunity to travel by means other than private car.
- Local roads are conducive to safe walking and cycling and where there is a conflict with busier roads, crossing facilities are provided and the site is well connected to the wider pedestrian and cycle networks.
- The approved access arrangements will ensure efficient access and egress to the site for all users with minimal interruption to the free-flow of traffic in the vicinity of the site and negligible levels of traffic generation and have been considered through adjacent site planning applications.
- The site access layout has been the subject of Stage 1 Road Safety Audit as part of the original and current planning application with the issues raised having been addressed through a Designers Response.
- The internal site layout complies with the relevant design standards as set out in Manual for Streets and has been the subject of liaison with Highway Officers at West Sussex County Council.
- Cycle and car parking provision will be provided in accordance with the West Sussex County Council parking standards to include appropriate levels of visitor parking and the site is safely accessible by service vehicles.

On the basis of the findings within this report which summarise the historic permission and agreed layout of the site, in the context of the proposals submitted in 2016 there are deemed to be no highway or transportation reasons why this site should not be considered acceptable for the proposed development.

Therefore, the Highway Authority are respectfully asked to confirm their position and hold no objection to the current proposals subject to details to be set out and agreed through any subsequent S278 / 38 Agreement.

PLANS



Notes

Ordnance Survey Licence number: 100057360

Drawing Revisions

Rev:	Date:	Details

Client

WEST SUSSEX COUNTY
COUNCIL

Project

ANGELS NURSERY,
BARNHAM

Title

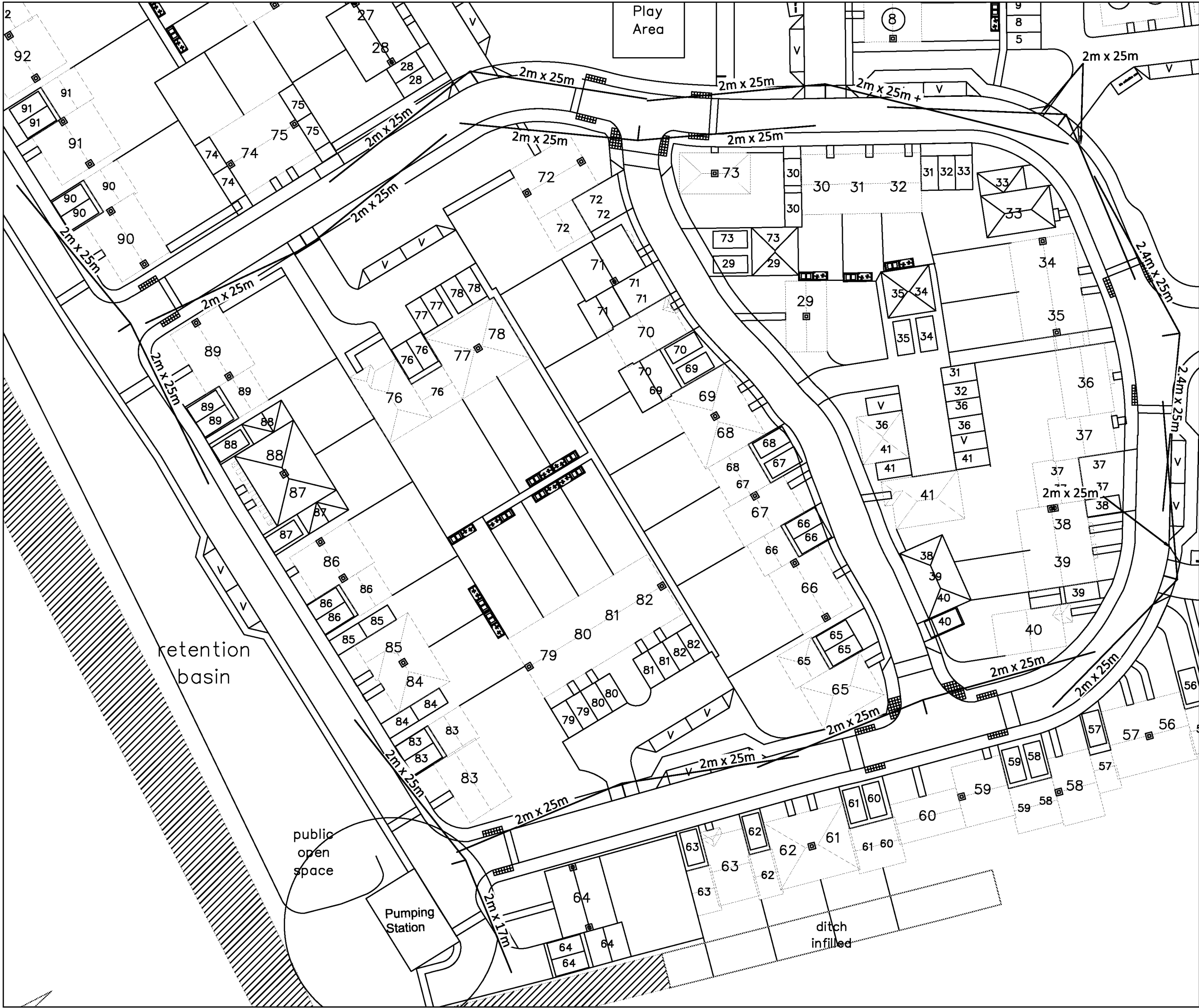
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Drawing Number:	15083/001	Date:	JULY 16
		Revision:	-

ARUN DISTRICT COUNCIL 15083/001



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Status:	ISSUE	Scale: 1:500 @ A3
Drawn:	DC	Checked: PJC
Drawn:	DC	Date: JULY 16
Drawing Number:	15083/SK02	Revision: -



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Status:	ISSUE		Scale:	1:1000 @ A3
Drawn:	DC	Checked:	PJC	Date: JULY 16
Drawing Number:			Revision:	
15083/TK01			-	

ARUN DISTRICT COUNCIL 15083/TK01

APPENDIX 1



ANGEL'S NURSERY, YAPTON ROAD, BARNHAM

PROPOSED RESIDENTIAL DEVELOPMENT, ACCESS ARRANGEMENTS AND INTERNAL HIGHWAYS

Stage 1 (Interim) Road Safety Audit

July 2016

RDW/DH/16/1243/RSA1

Revision Status	Prepared by: (Name)	Checked by: (Name)	Approved by: (Signature)	Date Approved:
Original	R Westhead	D Hubbard		11 July 2016
Designer's Response				
Authority's Response				
Audit Response				

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Date: 11 July 2016	

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Road Safety Audit – Stage 1 (Interim)	2
Angel's Nursery, Yapton Road, Barnham	
Proposed Residential Development, Access Arrangements and Internal Highways	

1.0 INTRODUCTION

- 1.1 This report results from a Stage 1 (Interim) Road Safety Audit (RSA) carried out on the proposed access arrangements, and internal highways layout for a new residential development at the Angels Nursery site, Yapton Road, Barnham, West Sussex.
- 1.2 The highway proposals include: the construction of a new access junction from Yapton Road; a new uncontrolled pedestrian crossing facility with refuge island on Yapton Road; new footways on Yapton Road; and internal highways layout to serve the proposed development site of 96 dwellings.
- 1.3 A previous Road Safety Audit was completed by another The Safety Forum team in October 2009. This examined only the new access junction, the design of which remains broadly similar. This Stage 1 (Interim) RSA examines both the proposed external and internal site works and a Stage 1 (Interim) RSA is therefore considered to be appropriate.
- 1.4 The Stage 1 (Interim) RSA was carried out at the request of Malcolm Mayo of West Sussex County Council.
- 1.5 The Audit was carried out on 7th July 2016 by consultants working on behalf of The Safety Forum Limited.
- 1.6 The Audit Team, which is established from The Safety Forum Ltd and independent of the project design team, has had no involvement with the project. The Auditors were:
- The Auditors were:
- R Westhead – Team Leader (MSoRSA, RSA Cert Comp)
- D Hubbard – Team Member (MCIHT, RSA Cert Comp)
- 1.7 The report has been prepared in accordance with the Design Manual for Roads and Bridges (DMRB) Highways Directive (HD) 19/15.
- 1.8 The Audit consisted of a desktop study and a site visit. The site visit was carried out on 7th July 2016, between 12:15 and 12:45 hours by all members of the Audit Team together. The weather was overcast with light rain at times and the road surface was slightly damp. Traffic conditions were moderate.

- 1.9 Issues relating to the health & safety of operatives constructing, operating or maintaining the highway are not covered by Road Safety Audit. Only issues relating to the design and construction of facilities for highway maintenance that may potentially contribute to a Road Safety Matter are considered by the Road Safety Audit process.

Road Safety Audit is not a technical check that the design conforms to Standards and/or best practice guidance. Design Organisations are responsible for ensuring that their designs have been subjected to the appropriate design reviews (including, where applicable, Non-Motorised User (NMU) Audits) prior to Road Safety Audit.

Road Safety Audit is not a check that the scheme has been constructed in accordance with the design.

Whilst reference is made to certain design standards, where safety may be compromised by a reduction in standard, this report is not intended to provide a design check. The Auditors have only reported on matters that might have an adverse effect on road safety in the context of the chosen design. No attempt has been made to comment on the justification of the scheme or the appropriateness of the design. Consequently, the Auditors accept no responsibility for the design or construction of the scheme.

- 1.10 The recommendations in this report are aimed at addressing the road safety problems; however there may be other alternative acceptable ways to overcome a specific problem, when other practical issues are considered. The recommendations contained herein do not absolve the Designer of his/her responsibilities.
- 1.11 The Auditors would be pleased to discuss the acceptability of alternative solutions to problems identified during the Audit, and would encourage the Designer to consult them on this matter.
- 1.12 The LHA response to the RSA should be formally recorded and reported to the Designer and the RSA Team so that a record of the Audit process is contained in the *As Built* design pack to be provided and retained by the LHA on final completion.
- 1.13 All problems identified in this Road Safety Audit Report are indicated on a location plan in Appendix A

2.0 ITEMS CONSIDERED

- 2.1 The Road Safety Audit was undertaken on the scheme detailed in the following documentation supplied by West Sussex County Council.

Drawing No.	Rev	Title
2124/02	-	Site Plan
MB/BD/09/356/RSA1	-	Yapton Road, Barnham, West Sussex, Proposed Residential Development. Stage 1 Road Safety Audit

- 2.2 No departure from standards or other information was submitted to the Audit Team.

3.0 MATTERS ARISING FROM THE PREVIOUS STAGE 1 AUDIT.

3.1 PROBLEM

LOCATION: Pedestrian refuge.

SUMMARY: Risk of overtaking through the junction.

It is unclear from the information provided if keep left bollards and high level keep left signs will be provided on the proposed pedestrian refuge. Failure to provide these signs may result in approaching vehicles attempting to overtake through the junction colliding with the island.

RECOMMENDATION

Provide keep left bollards and high level keep left signs on the proposed island.

STAGE 1 INTERIM RSA COMMENTS

This item remains of concern. It was also noted that the lack of street lighting in the area will reduce the visual impact of the refuge island and any bollards / signs should be suitably illuminated.

3.2 PROBLEM

LOCATION: Proposed shared footway/cycleway.

SUMMARY: Risk of pedestrian/cyclist conflicts.

There is no corduroy tactile paving proposed to warn visually impaired pedestrians they are entering a shared pedestrian/cycle footway. This may lead to conflicts between cyclists and visually impaired pedestrians. It is also unclear what signing/carriageway markings will be provided to direct cyclists off Yapton Road and also to and from the recreation centre. This may also lead to conflicts with pedestrians as cyclists may continue along the footway.

RECOMMENDATION

Provide appropriate tactile/corduroy paving in accordance with Department for Transport's Guidance on the use of Tactile Paving Surfaces 2005 to clearly indicate the start and end of the shared footway / cycleway. Provide signing/carriageway markings to direct cyclists off Yapton Road and also to and from the recreation centre.

STAGE 1 INTERIM RSA COMMENTS

This item refers to the section of footway on Yapton Road to the east of the proposed access junction. There is no mention within the updated design proposals subject to this Stage 1 (interim) RSA whether this footway is to be shared use. If this footway, or indeed any other, is to be shared use the appropriate tactile paving to indicate such use should be included.

3.3 PROBLEM

LOCATION: Pedestrian facilities within the development.

SUMMARY: Risk of pedestrian/vehicle conflicts.

No details of pedestrian routes and crossing facilities within the development have been provided; it is appreciated that the layout of the internal roads will not result in high vehicle speeds. However, concern is expressed that the lack of formal pedestrian facilities within the development could put pedestrians at unnecessary risk.

RECOMMENDATION

The design should ensure that adequate pedestrian facilities are provided within the development.

STAGE 1 INTERIM RSA COMMENTS

This item remains of concern.

4.0 MATTERS ARISING FROM THIS STAGE 1 (INTERIM) AUDIT.

4.1 PROBLEM

LOCATION: Yapton Road approach to access.

SUMMARY: No information provided to show how existing and proposed road markings tie in.

The supplied design drawing does not show how the proposed and existing road markings tie in on Yapton Road. Failure to ensure a smooth tie in between the existing and proposed road markings could lead to vehicles making sudden diverge movements, overrunning the hatched or right turn areas, or possible conflict with the pedestrian refuge.

RECOMMENDATION

Ensure that the proposed road marking arrangements ties in smoothly with the existing markings without any sudden diverges or steep gradients.

4.2 PROBLEM

LOCATION: Footway proposed on Yapton Road east of access.

SUMMARY: No indication of where proposed footway links into wider pedestrian network.

A footway has been proposed on the southern side of Yapton Road extending from the eastern side of the access junction. It is shown to extend east of the proposed pedestrian crossing refuge. There are no details however of how this footway will extend into the wider footway network. Should the footway end abruptly the users heading east may be forced into the carriageway at an inappropriate location placing them at risk of conflicts with vehicles.

RECOMMENDATION

Either end the footway at the proposed pedestrian crossing, or ensure that it links safely with the wider footway network.

4.3 PROBLEM

LOCATION: Proposed right turn area on Yapton Road.

SUMMARY: Lack of right turn arrows.

No right turn arrows or bifurcation arrows have been proposed for the right turn area on Yapton Road for the development access. Failure to provide adequate indication of the right turn area could lead to sudden lane changes and possible vehicle to vehicle conflicts.

RECOMMENDATION

Install right turn arrows and a bifurcation arrow as appropriate.

4.4 PROBLEM

LOCATION: Throughout proposed residential development.

SUMMARY: Lack of pedestrian crossing points.

No pedestrian crossing points are proposed throughout the development site. This may result in pedestrians entering the carriageway at inappropriate locations in possible conflict with traffic. This may also present an obstruction for wheelchair users and pedestrians with pushchairs.

RECOMMENDATION

Provide safe dropped kerb crossing points throughout the development where required.

4.5 PROBLEM

LOCATION: Pedestrian link to 'The Murrels' to southwest of site.

SUMMARY: Lack of dropped kerbs / tactile paving.

No formal pedestrian crossing point has been provided between the pedestrian link to 'The Murrels' and the proposed pedestrian footway network. This may pose an obstruction for some footway users.

RECOMMENDATION

Ensure that safe facilities are provided for pedestrian to move between the proposed pedestrian network and the pedestrian link to 'The Murrels'.

4.6 PROBLEM

LOCATION: Proposed carriageway between units 65 and 73.

SUMMARY: Footways into shared use area only from one side of junctions.

Pedestrians entering the shared use area on the carriageway between units 65 and 73 only have footway access directly into the shared use area from one side of the junctions at either end of this carriageway. This may mean that pedestrians entering the shared use area from the side of the junction, where the footway does not extend into the junction, may be entering the carriageway within a junction at a point where road users are not expecting them. This could result in vehicle to pedestrian conflicts.

RECOMMENDATION

Provide footways that link into the shared use area from both sides of the junctions leading into this carriageway.

4.7 PROBLEM

LOCATION: Accesses to some shared use areas off main residential road.

SUMMARY: Lack of kerb radii may lead to vehicles overrunning footways.

At some of the shared use area junctions off the main residential route the proposed junctions are shown to have no radii leading into them. This may result in vehicle overrunning footways leading to possible vehicle to pedestrian conflicts. This may be of particular concern for service vehicles such as refuse vehicles.

RECOMMENDATION

Ensure that all anticipated vehicles can safely access all areas without overrunning footways.

4.8 PROBLEM

LOCATION: Proposed tactile paving opposite unit 34.

SUMMARY: Tactile paving may be confusing.

Tactile paving proposed on one side of the residential development road opposite unit number 34 may confuse blind or partially sighted pedestrians since it does not appear to form a formal crossing point with no corresponding dropped kerb / tactile paving on the opposite side of the carriageway.

RECOMMENDATION

Omit tactile paving from this location unless provision of a formal dropped kerb crossing is intended.

4.9 PROBLEM

LOCATION: Pedestrian / cycle route adjoin site from the west.

SUMMARY: Unclear how cyclists are to re-join the carriageway.

No details have been provided upon how cyclists are intended to re-join the carriageway at the end of the pedestrian / cycle route that adjoins the site from the northwest. This may encourage cyclists to ride on the footways in possible conflicts with pedestrians.

RECOMMENDATION

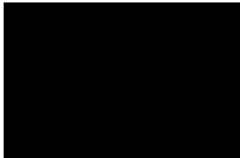
Provide a safe and suitable facility for cyclists to re-join the carriageway at the end of the cycle route.

5.0 AUDITOR STATEMENT

5.1 We certify that this audit has been carried out in accordance with HD 19/15.

AUDIT TEAM LEADER

R Westhead
The Safety Forum Ltd
PO Box 744
Godalming
Surrey
GU7 9DU

Signed 

Date: 11 July 2016

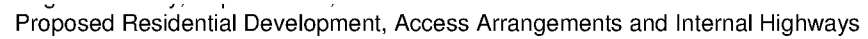
AUDIT TEAM MEMBER

D Hubbard

Signed: 

Date: 11 July 2016

APPENDIX A: LOCATION PLAN



APPENDIX B: Road Safety Audit Response

Auditors: R Westhead (Team Leader) and D Hubbard (Team Member).

Date Response Completed:

Scheme: Angel's Nursery, Yapton Road, Barnham. Proposed Residential Development, Access Arrangements and Internal Highways.

This response is to a Stage 1 (Interim) Road Safety Audit to the design standard detailed within HD19/15 of Volume 5, Section 2, Part 2, of the Design Manual for Roads and Bridges, as detailed by the Highways Agency.

Problem no. in safety audit report	Problem accepted (yes/no)	Recommended measure accepted (yes/no)	Alternative measure (detail description)
3.1	YES	YES	Illuminated bollards incorporating 'Keep Left' signs will be agreed and specified at the S278 / 38 Detailed Design stage. Consideration will be given to the provision of high level signs though it is noted that the horizontal and vertical alignment of Yapton Road in the vicinity of the site would not act to restrict forward visibility to bollards.
3.2	YES	YES	Tactile paving is indicated on the Milestone Transport Planning Drawing Number XXXX. Details of the final specification and requirements for tactile paving will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
3.3	YES	YES	Footways are provided adjacent to the main access road within the development including the provision of tactile paving at all key junctions. Remaining areas, including smaller residential mews / courtyards and the central route (units 65-73) are designed as shared use areas. Raised table junctions are proposed at all key internal junctions to influence low vehicle speeds and provide pedestrian crossings.

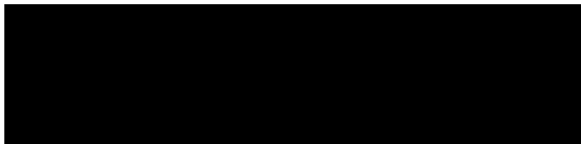
4.1	YES	YES	The Architects Drawing reviewed by the Audit Team did not include full details of road markings for the site access. The Milestone Transport Planning Drawing Number XXXX indicates the extent of road markings tying in with existing markings. All lining and signing details will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.2	YES	YES	The footway extension to the east of the site access reflects the current planning application for the residential development of the adjacent Lillies Caravan Park site in addition to a wider WSCC aspiration for continued cycle provision between Barnham and Yapton (not the subject of this planning application). The footway proposed provides for continuation of pedestrian access across the application site frontage to the adjacent site. The provision of footway across the site frontage, and the delivery of the footway can be reviewed at the S278 / 38 Detailed Design Stage in respect to the outcome of the adjacent site planning application.
4.3	YES	YES	The Architects Drawing reviewed by the Audit Team did not include full details of road markings for the site access. The Milestone Transport Planning Drawing Number XXXX indicates the extent of road markings tying in with existing markings. All lining and signing details will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.4	YES	YES	Footways are provided adjacent to the main access road within the development including the provision of pedestrian crossing points with tactile paving at all key junctions. Remaining areas, including smaller residential mews / courtyards and the central route (units 65-73) are designed as shared use areas served by footway crossovers providing for pedestrian continuity. Raised table junctions are proposed at all key internal junctions to influence low vehicle speeds and provide pedestrian crossings.

4.5	YES	YES	Tactile paving and dropped kerbs as appropriate are indicated on the Milestone Transport Planning Drawing Number XXXX. Details of the final specification and requirements for tactile paving will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.6	YES	YES	Footway provision into the shared use area between units 65-73 are indicated on the Milestone Transport Planning Drawing Number XXXX. Details of the final specification will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.7	YES	YES	These minor access to shared use areas off the main access road are to be provided as vehicle crossovers as indicated on the Milestone Transport Planning Drawing Number XXXX. Details of the final specification will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.8	YES	YES	The Milestone Transport Planning Drawing Number XXXX indicates the provision of appropriate tactile paving through the site. Details of the final specification and requirements for tactile paving will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.
4.9	YES	YES	Staggered barriers are indicated through the pedestrian / cycle route linking with the adjacent open space on the Milestone Transport Planning Drawing Number XXXX. Details of the final specification and suitable lining and signing to direct cyclists onto the carriageway will be set out to appropriate standards and guidance to be agreed at the S278 / 38 Detailed Design Stage.

Principal Engineer's / Audit Project Sponsor's Statement:

Road Safety Audit for Angel's Nursery, Yapton Road, Barnham. Proposed Residential Development, Access Arrangements and Internal Highways.

I certify that I have considered the items raised in the Stage 1 (Interim) Road Safety Audit Report and I am content to accept all of its recommendations ~~except for the ones listed above. I have stated my reasons for not accepting them and I seek the Chief Engineer's endorsement of my proposals.~~



Paul Jackson-Cole

19th July 2016

..... Date.....

Principal Engineer

Chief Engineer's / Director's Decision:

I accept these proposals by the Principal Engineer.

..... Date.....

Chief Engineer

APPENDIX 2

This parking demand tool has been compiled by West Sussex County Council. If you have queries relating to the information provided or require additional information please contact darryl.hemmings@westsussex.gov.uk.

Please input the ward name for your development location below by double clicking in the box or click box and use the drop down menu to the right of the box. The spreadsheet will automatically show the District and Ward of this location. If the ward is not known please input postcode into the Ward Finder. The tool will allow input up to 3 wards in the boxes below. Please refer to notes for more details.

Ward 1	Barnham
District	Arun
Ward 2	Yapton
District	Arun
Ward 3	Bersted
District	Arun
Ward Tempro Factor 2009-2026	1.058484
District Tempro Factor 2009-2026	1.067644



west
sussex
county
council

Ward Finder

Postcode		Ward	
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Note:

No special provision need be made for visitors where at least half of the total parking provision as with a development is unallocated. In other circumstances, it may be appropriate to allow for add demand for visitor parking of up to 0.2 spaces per dwelling.

In areas of parking constraint, levels of provision below predicted demand may be applicable.

The tool is expressed as number of Rooms (Per Unit). If data is not available in this format and nur Bedrooms is used this will need to be converted. A general guide for conversion is as follows but r some cases.

Houses	Flats
1 bed = 3 rooms	Studio = 1 room
2 bed = 4 rooms	1 bed = 2 rooms
3 bed = 5 rooms	2 bed = 3 rooms
4 bed = 6 rooms	3 bed = 4 rooms
5 bed = 7 rooms	4 bed = 5 rooms

Garages will count as 1 space when allocating spaces.

Ward data used can be checked by the user by referring to the District-Ward Data Tables. The Wa Tables highlight if the Census data does not include data for certain dwelling sizes. In such cases c: values have been obtained using the nearest sized dwelling with same tenure and ward. For exam data is available for a private house with 1 room then data for a private house with 2 rooms has b: The Car Ownership Data is highlighted in purple where such an approach has been used. Where C: contains small samples for certain sized dwellings this is highlighted in red if <20, and green if <50 Demand column. In such cases, other wards should be selected to achieve a higher sample size.

Report Summary Table

DEVELOPMENT MIX				
Ref.	Unit Type	Unit Tenure	Habitable Rooms (Per Unit)	No. of Units (Total)
A	Flats	Council/Housing Association (not including shared ownership)	2	6
B	Houses	Council/Housing Association (not including shared ownership)	4	22
C				
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
Total				28

ALLOCATED PARKING
Spaces (Per Unit)
1
1

This parking demand tool has been compiled by West Sussex County Council. If you have queries relating to the information provided or require additional information please contact darryl.hemmings@westsussex.gov.uk.

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Ward 1	Barnham
District	Arun
Ward 2	Yapton
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District	Arun
Ward Tempro Factor 2009-2026	1.058484
District Tempro Factor 2009-2026	1.067644



west
sussex
county
council

Ward Finder

Postcode		Ward	
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Note:

No special provision need be made for visitors where at least half of the total parking provision is with a development is unallocated. In other circumstances, it may be appropriate to allow for additional demand for visitor parking of up to 0.2 spaces per dwelling.

In areas of parking constraint, levels of provision below predicted demand may be applicable.

The tool is expressed as number of Rooms (Per Unit). If data is not available in this format and number of Bedrooms is used this will need to be converted. A general guide for conversion is as follows but in some cases.

Houses	Flats
1 bed = 3 rooms	Studio = 1 room
2 bed = 4 rooms	1 bed = 2 rooms
3 bed = 5 rooms	2 bed = 3 rooms
4 bed = 6 rooms	3 bed = 4 rooms
5 bed = 7 rooms	4 bed = 5 rooms

Garages will count as 1 space when allocating spaces.

Ward data used can be checked by the user by referring to the District-Ward Data Tables. The Ward Data Tables highlight if the Census data does not include data for certain dwelling sizes. In such cases ownership values have been obtained using the nearest sized dwelling with same tenure and where necessary, if no data is available for a private house with 1 room then data for a private house with 2 rooms has been used. The Car Ownership Data is highlighted in purple where such an approach has been used. Where Census data contains small samples for certain sized dwellings this is highlighted in red if the sample size is less than 50 in the Total Demand column. In such cases, other wards should be selected to achieve a larger sample size.

Report Summary Table

DEVELOPMENT MIX				
Ref.	Unit Type	Unit Tenure	Habitable Rooms (Per Unit)	No. of Units (Total)
A	Houses	Private	4	13
B	Houses	Private	5	37
C	Houses	Private	6	17
D				
E				
F				
G				
H				
I				
J				
K				
L				
M				
N				
O				
P				
Q				
R				
S				
Total				67

ALLOCATED PARKING
Spaces (Per Unit)
2
2
3+