APPENDIX 4

Technical Note

To:	**Swale Borough Council**
From:	**Iceni Projects Ltd**
Date:	**20.01.2020**
Title:	**Land at Stones Farm, Bapchild, Kent**

LAND AT STONES FARM, BAPCHILD, KENT – TECHNICAL NOTE

a. Introduction

1. Iceni Projects Ltd have been appointed by Swale Borough Council (The Client), to undertake a review of the proposed development in highways terms at Land at Stones Farm, Bapchild, in Kent (the Site).

2. Planning permission was granted in December 2017 for the following (Planning Reference: 14/501588/OUT):

   "Hybrid application (part outline, part approval of detail) consisting of: Outline application for the development of 550-600 houses and all necessary supporting infrastructure including roads, open space, play areas, neighbourhood shopping/community facilities (up to 650sqm gross) and landscaping. All detailed matters are reserved for subsequent approval except (i) vehicular access to A2 Fox Hill; (ii) emergency access to Peel Drive; (iii) landscape buffer between housing and countryside gap and (iv) layout, planting, biodiversity enhancement and management of countryside gap, as amended by drawings 5257/OPA/SK001 Rev J (new red line plan), D119/52 (Swanstree Avenue Plan) and D119/53 (junction layout plan)."

3. A reserved matters application for the first 310 dwellings was submitted in October 2018 (Planning Reference: 18/505151/REM) with Kent County Council (KCC) only providing comments on the vehicle access into the development from the A2, as they only intend on adopting this section of the development site.

4. A 'Highways Construction Technical Note' was produced by Ardent Consulting Engineers (November 2019) which comprised a review of the site layout which included vehicle swept path analysis of different vehicle types as well as an assessment of the roads and visibility across the site.

5. It is pertinent to note that planning approval was granted in January 2017 for the construction of a dual use netball court and drop-off point for visitors to Lansdowne School with the access connected to the western section of the site – this will accommodate up to 24 vehicle spaces (Planning Reference: 16/507289/FULL).

6. This Technical Note (TN) has been produced to review the work undertaken by Ardent Consulting Engineers and assesses the internal road layout to ensure that it meets the required design standards.

APPENDIX 4

b. Construction Details

7. A review of the specification in which the roads will be constructed to has been undertaken by an external consultant (Steve Haswell Associates) with a copy of the drawings that include comments included in **Appendix A1.** A summary has been provided below:

   - The roads have been designed to adoptable standards.
   - The widths of the carriageways shown are not to scale when measured from the drawing.
   - It is noted that footways have been shown on both sides of the carriageway. In some cases across the development, only one side of the carriageway has a footway present with a verge located opposite, as such, a cross section needs to be provided where a verge is present.
   - The material thickness should vary on each section. At present, the depths have been shown to be the same on every cross section.
   - The footway and construction depths should be shown on every cross section and not referred to separately within a technical note.
   - It has been recommended that footways adjacent to block paved roads should also be block paved.

8. It is therefore recommended that an updated set of drawings are submitted, which need not be undertaken now, assuming the more detailed layout points in this report are addressed.

c. Parking Requirement

9. The proposed development comprises circa 515sqm of commercial floorspace (A1/A3/D1) and 310 dwellings. A total of 597 car parking spaces have been provided for the residential aspect of the development (493 for residents, 84 visitors and 20 unallocated) and 30 spaces for the commercial element of the development. The relevant parking standards have been outlined in **Tables 1 and 2** which reference Kent Vehicle Parking Standards, rather than Swale Borough Council Standards as these have been outlined within the Design and Access Statement (DAS).

APPENDIX 4

Table 1 – Car Parking Standards (Kent Vehicle Parking Standards, July 2006)

Land Use	Car	Goods Vehicles	Cycle
A1 Food Retail	1 space per 18m²	1 space per 500m²	1 space per 200m² (short-stay) 1 space per 200m² (long-stay)
A1 Non-food Retail	1 space per 25m²	1 space per 500m²	
A3 Restaurants & Cafes	1 space per 6m² (short-stay) 1 space per 2 staff (long-stay)	Adequate facilities should be provided to enable delivery vehicles to park and manoeuvre clear of the public highway	1 space per 10 seats (short-stay) 1 space per 10 seats (long-stay)
D1 Non-Residential Institutions (likely Medical / Nursery / Day Care Centre	1 space per 4 children/attendees (short-stay) 1 space per 2 staff (long-stay)	Adequate facilities should be provided to enable delivery vehicles to park and manoeuvre clear of the public highway	1 space per 2 consulting rooms. 1 space per 50 seats or 100m²

Table 2 – Residential Car Parking Standards (Kent Design Guide Review, Nov 2008)

Type	Suburban Edge/Village/Rural	Form
1 & 2 Bed Flats	1 space per unit	Not allocated
1 & 2 Bed Houses	1.5 spaces per unit	1 space per unit
3 Bed Houses	2 independently accessible spaces per unit	Allocation of one or both spaces possible
4+ Bed Houses	2 independently accessible spaces per unit	Allocation of both spaces possible
Additional Visitor Parking	On-street areas, 0.2 per unit	

10. Within the Residential Car Parking Standards where the minimum standard is 2 spaces (or less), a garage will not count as a parking space. For a garage to count as a parking space, the minimum internal size should be 5.5m by 3.6m.

11. A summary of the proposed accommodation mix is as follows:

- 34 x 1-bed flats;
- 42 x 2-bed flats;
- 67 x 2-bed houses;
- 124 x 3-bed houses;
- 42 x 4-bed houses; and
- 1 x 5-bed house.

APPENDIX 4

12. When referring to Kent's residential parking standards, the proposed development is required to provide 511 resident spaces and 62 visitor spaces. The development accords with standards with 511 spaces associated with residents and 81 visitor parking bays. It is pertinent to note that plots 6, 21, 22, 25, 26, 27, 37, 84, 233, 234, 236 and 237, which are 3-bed properties, only provide one allocated parking space and will therefore have to rely on the unallocated and visitor parking spaces across the site. This is deemed acceptable as the layout provides surplus parking spaces, albeit residents will be required to walk further to their vehicles.

13. It is pertinent to note that there are four occasions across the site where there appears to be a line missing as shown below in **Figure 1**. These have not been included within the overall provision and therefore need to be reviewed further, and in reality provide an additional one space.

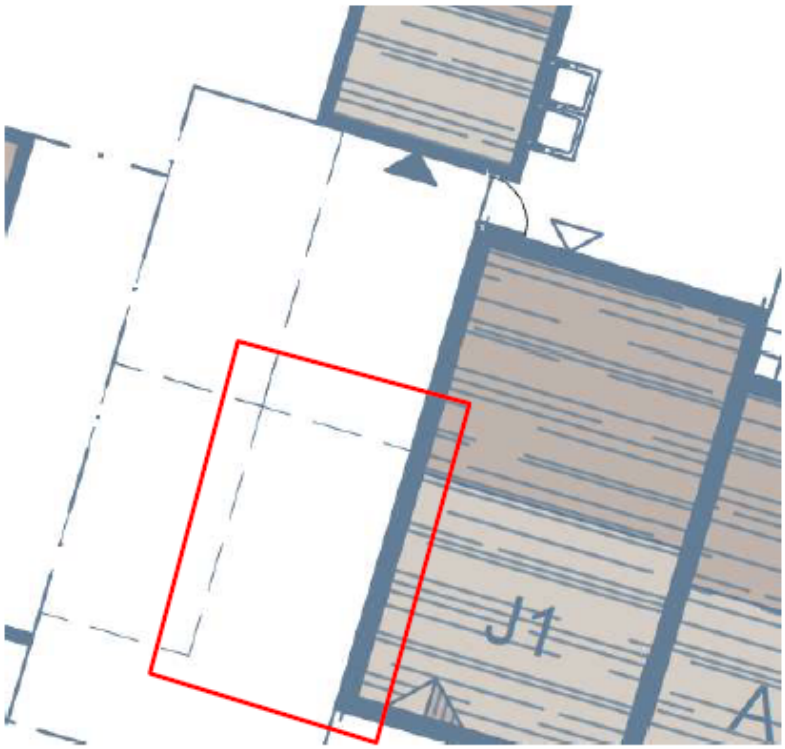

Figure 1 – Potential Error in Car Parking Space

14. The parking bays measure 2.5m x 5m and are therefore in accordance with standards.

15. For the commercial floorspace, a total of 29 car parking spaces are required. As such, the provision of 30 parking spaces is in accordance with standards albeit no allocated disabled bays have been shown in this location. Kent standards state that for use classes A1/A3/A5/D1, *"a car park up to 50 spaces will require 1 designated space + 2 spaces of sufficient size but not specifically designated"*. To rectify this issue, it is recommended that one bay is converted into an accessible space.

APPENDIX 4

16. Although not referenced within the DAS, Swale Borough Council Parking Standards (June 2019), states that where parking spaces abut a footway or carriageway, a 0.5m setback should be provided. This appears to be lacking in a number of locations and therefore it is recommended that this is to be rectified across the entire site to prevent vehicle overhang. Furthermore, a parking space in front of a garage, car port or car barn should provide for the full length of the vehicle plus an allowance for opening of the garage door. A 1m clearance should normally be provided in front of garages. All spaces in front of garages throughout the layout do not accord as all measure only 5.5m in length between the garage door and the rear of the adjoining tandem bay. An additional 0.5m setback is therefore required to meet standards.

17. A review of the previous swept path analysis has been undertaken with Iceni's drawings included in **Appendix A2**. The body of the vehicle overhangs a number of the verges on numerous occasions, albeit this is not considered an issue as long as there is no physical obstruction.

18. Regarding cycle parking for the development, the KDG states the following:

    "All dwellings will have a suitable location to provide covered and secure storage for at least one cycle per dwelling. For dwellings with private garages, this will be deemed to be a secure location as long as the garage is large enough to fit the cycle and a car. For flat or other units with no private space, a secure cycle stand will be provided in close proximity to the building entrance".

19. It is assumed that the cycle storage areas and garages are sufficient to accommodate the required number of cycle parking, albeit it is difficult to understand the cycle parking provision across the site.

d. Road Layout Review

20. A review of the road types and widths has been undertaken. In general, there are no major issues with the layout with only some minor points to raise.

21. The main access route into the site should technically be a local distributor road, since it is just above the guidance parameters for this road type (50 to 300 units) at serving 310 units. This is not a major issue but it is recommended that the route is widened to 6.1m as this route may potentially serve a bus route which is explained in more detail within Section F. This would also accord with the DAS.

22. The major access road to the west and south of Ridgeline Park should ideally provide a footway along its edge, to provide a hard walking surface between the northern parts of the site and the A2 Fox Hill, although this is not necessary.

23. The main footpath that runs through the site measures 2m in width, which limits the potential to be shared with cyclists (minimum 2.5m). This is common across the site with all footways 2m or less. Whilst it is expected that the roads on site will be used at relatively low speeds, it is recommended that some cyclist facilities / infrastructure is separated from vehicular routes to allow for novice cyclists with paths to practice. It is therefore suggested that shared footway/cycleways are widened to 3m where land is available, although this is not a necessity.

24. There are also additional areas in which a footpath could be provided to increase the sustainability of the site and provide more direct walking routes to the school, subject to the level differences and available space, in particular between Plot 75 and 137. There also appears to be a lack of footway between Plot 110 and 118 and therefore it is recommended to extend the footway to the rear of the three visitor bays to provide this connection so that pedestrians are not forced to walk in the carriageway. Lastly, a footpath should be provided from the south of the site towards the primary school entrance to improve sustainability. It is

APPENDIX 4

recommended that these routes should be provided unless there are good technical reasons. For ease of reference, these locations have been highlighted in **Figure 2.**

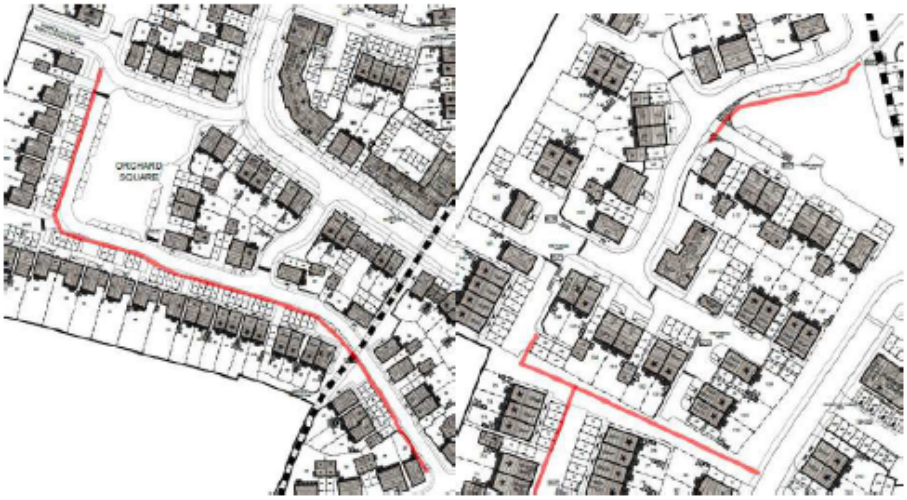

Figure 2 – Potential Error in Car Parking Space

25. It is recommended that the access road towards the primary school is widened to 4.8m in order to allow two vehicles to pass one another through the bend as this will be frequently used during school pick-up & drop-off times. This is demonstrated in **Appendix A3**.

e. Visibility

26. Both junction and forward visibility has been analysed across the site. It is confirmed that the forward visibility is unobstructed and therefore has not been analysed and further. However, a number of the junctions across the development site need further consideration with the associated drawings included in **Appendix A4**. The majority of comments are associated with ensuring that the verges adjacent to the visibility splays are to be kept clear of obstructions to ensure that the driver visibility is maintained (0.6m maximum height of planting). Additional comments are as follows:

- Drawing Reference: 20-T001_06.4 – Traffic calming feature to be installed to reduce vehicle speeds to ensure visibility is not obstructed by dwelling. Vehicle speeds need to be reduced to 10mph to achieve the required visibility. A speed hump will need to be installed near to the access due to the straight nature of the road.

- Drawing Reference: 20-T001_06.5 – The lateral shift will reduce vehicle speeds along this section, although to achieve the required visibility vehicles need to be travelling at 12mph. This will be difficult to achieve and therefore additional traffic calming features may be required.

- Drawing Reference: 20-T001_06.7 – Visibility shown to be obstructed by adjacent building edge although vehicles expected to be travelling less than 30mph and therefore not an issue.

APPENDIX 4

f. Servicing

27. The guidance relevant to this section of the TN is as follows:

    - Manual for Streets that *"waste collection vehicles should be able to get within 25m of the storage point and the gradient between the two should not exceed 1:12"*. Furthermore, British Standards (BS) 5906:2005 recommends *"a maximum reversing distance of 12m. Longer distances can be considered, but any reversing routes should be straight and free from obstacles and visual obstructions"*.

    - Kent Design Guide states that *"refuse vehicles should not be expected to reverse more than 20m"* and that *"Waste collection and recycling points should not be more than 25 metres from the edge of the carriageway"*.

28. Upon reviewing the refuse vehicle swept path analysis, Iceni has provided a number of comments which have been included within **Appendix A5** with a summary provided below.

29. The vehicle swept path analysis shows that the body of the refuse vehicle overhangs a number of verges and footways whilst manoeuvring throughout the site. This is not considered to be an issue and is not uncommon due to the infrequency of the manoeuvres and that turning is assisted by bin collection operatives. There are locations where the bin stores may need to be relocated as well as increasing either the width of the carriageway or the kerb radii which has been detailed below:

    - Drawing Reference: 20-T001_01.2 – the refuse vehicle wheels overrun the kerb line and therefore it is recommended that the access is widened.

    - Drawing Reference: 20-T001_01.4 – bin collection point is further than 25m away from the rear of the refuse vehicle, therefore it is recommended to relocate the bin store.

    - Drawing Reference: 20-T001_01.5 – the refuse vehicle wheels overrun the kerb line and therefore it is recommended that the access is widened.

    - Drawing Reference: 20-T001_01.6 – refuse vehicle is required to reverse 24m and therefore 4m greater than the permitted distance. The refuse vehicle wheels also overrun the kerb line and therefore it is recommended to redesign the turning head.

    - Drawing Reference: 20-T001_01.7 – refuse vehicle is required to reverse 22m to complete the manoeuvre and therefore 2m greater than the permitted distance. The refuse vehicle wheels also overrun the kerb line and therefore it is recommended to redesign the turning head.

30. The loading bay associated with the commercial element of the development was not previously tracked. Vehicle swept path analysis of a 7.5T box van and 10m rigid vehicle has been undertaken and included in **Appendix A6.**

31. Both drawings demonstrate that the delivery vehicles will utilise the opposite side of the carriageway when undertaking the required manoeuvre. This is not considered to be an issue and is not uncommon across other developments. Drawings 20-T001_05.4 & 20-T001_05.5 show that the 10m rigid vehicle overruns the proposed kerb line and therefore it is recommended that the access is widened should this vehicle size require access to the loading area.

APPENDIX 4

32. The DAS mentioned that the principle loop road through the site should be designed to facilitate buses due to the future potential provision of a bus service. Tracking of a bus was not previously included and therefore Iceni have undertaken this which is included in **Appendix A7.** As shown within drawings 20-T001_04.2, 20-T001_04.3 and 20-T001_04.4 the bus overruns the kerb line as well as passing onto the opposite side of the carriageway when navigating through the bend. As mentioned previously, it is recommended that the carriageway increases in width to 6.1m as well as increasing the width of the kerb radii to the north of the loop.

g. Emergency Access

33. The proposed emergency vehicle access from the development site to Peel Drive is in accordance with standards as it measures approximately 4.6m in width. MfS states that the carriageway should be a minimum width of 3.7m outside buildings but can narrow to 2.75m for short straight sections in some areas of the UK.

34. The fire tender tracking has also been reviewed with Iceni including a number of comments which are shown at **Appendix A8** with a summary provided below.

35. The comments are similar to the refuse vehicle tracking with the body of the fire tender overhanging a number of footways and verges although this is not considered to be an issue. However, the following areas require further consideration:

- Drawing Reference: 20-T001_02.2 – vehicle wheels overrun kerb line, it is therefore suggested that the access is widened.
- Drawing Reference: 20-T001_02.5 – vehicle wheels overrun kerb line, it is therefore suggested that the access is widened.

h. Conclusion

36. This TN has reviewed the previous work undertaken by Ardent and has provided a number of comments on the site layout. The majority of the site is acceptable in highways terms although some areas need additional consideration.