

Our Ref: 47455/LG/JP/MJD Your Ref: 16 March 2018

Ms R Rackham G N Rackham & Sons Limited Bridge House Denmark Hill Palgrave Diss IP22 1AB

Dear Ms Rackham

# RE: Land at Sturgeons Farm, Diss Transportation and Highway Access

We refer to our instructions to consider the transport aspects for a potential residential development at Sturgeons Farm, Diss. The site compromises of greenfield and brownfield land and is approximately 13.5ha in size. There will be two main multi-modal accesses, off Shelfanger Road and a continuation of Farm Close, respectively. Additional potential pedestrian links to existing footways of Louie's Lane are also likely. Our assessment for the accesses and the transportation elements for land at Sturgeons Farm, Diss has been made on the basis of up to 415 proposed dwellings.

This assessment considers current policy with regards to access for the development and accessibility, which are addressed in following matters;

- 1. Access and offsite assessment of highways.
- 2. Location and accessibility to services.
- 3. Transportation links including pedestrian, cycle and public transport modes.
- 4. Development trip generation.
- 5. Traffic routes towards village.
- 6. Highway/transportation improvements.

**Figure 100** illustrates the location and extent of the proposed site, equating to a developable area of approximately 13.5ha. This site has an approximate Ordnance Survey grid reference of 611055E, 280896N and Postcode IP22 4EE.

Cont'd.../

4 The Old Church St Matthews Road Norwich Norfolk NR1 1SP



Telephone: 01603 230240 www.rj.uk.com

#### Page 2.../ Land at Sturgeons Farm, Diss

The proposal site comprises a greenfield and brownfield land site, currently occupied by agricultural land. Immediately east of the site are the dwellings of Farm Close and Louie's Lane, beyond that is Shelfanger Road and Diss Sports Club. To the south of the site are allotments and residential dwellings, with the centre of Diss beyond. To the west of the site are agricultural fields. To the north of the site is KC Steward Recycling Plant (Steward Recycling), with agricultural fields beyond.

The civil parish of Diss resides in rural Norfolk, within the South Norfolk District, with approximately 3,589 households and a population of 7,572 (taken from the 2011 Census data for the Diss parish). The town is situated along the A1066, which links to Scole in the east and Thetford via Garboldisham to the west. Diss also has more strategic links via the A140 and A143 to the west of the town providing links to Norwich, Gt Yarmouth, Ipswich and Bury St Edmunds. Diss is approximately 31km southwest of Norwich city centre, 25km east of Thetford and 36km north of Ipswich.

## Access and offsite assessment of highways

Due to the proposed number of dwellings, the Norfolk County Council (NCC) Design Guidance suggests two vehicular accesses. It is proposed to locate one off Shelfanger Road and the other is a continuation of Farm Close; both accesses will be outlined separately below.

## Farm Close

The existing parameters of Farm Close are currently the same dimensions of a Type 2 access road as stated in the Norfolk Residential Guide. The width of the carriageway is 6.0m and there are two 1.8m footways, one either side. The existing length of Farm Close is approximately 60m from the junction with Louie's Lane. This is a point of access to the proposed development.

The visibility of the junction of Farm Close with Louie's Lane is currently 90m to the south and 100m to the north, from a 2.4m setback. As Louie's Lane currently has a 30mph limit then the visibility from the junction is currently to standard. The provision of this access is shown on drawing **47455-P-001**.

Further investigation is recommended into the potential of using the existing farm track along Public Right of Way, Roydon, South Norfolk FP8 as an emergency access, should this be required by Norfolk County Council. If allowed the 3.7m width would be achievable with some hedge trimming and formalisation of the road surface. Additionally, there is currently a right of access for the dwellings directly to the west of the PROW. In any event, it is suggested that this farm track remains in its current status as a footpath and public right of way.

## Shelfanger Road

The proposed access off Shelfanger Road is located where the highway has a 30mph limit. Normally this would mean a minimum visibility of 2.4m x 90m is required. However, a visibility of 2.4 x 120m can be provided and is suggested as 150m north of the proposed access on Shelfanger Road the speed limit changes to 60mph. The extended visibility shows suitable provision in case the speed of vehicles on this section of Shelfanger Road is slightly greater than 30mph.

## Page 3.../ Land at Sturgeons Farm, Diss

Pedestrian links would have to be included in the Shelfanger Road access to ensure pedestrians can safely access/leave the site. Drawing **47455-P-002** shows a 2.0m wide footway is shown along the western side of Shelfanger Road from the access to the existing footway at the junction with Louie's Lane and Shelfanger Road.

Two additional sections of footway will need to be provided in the proximity of the Louie's Lane/ Shelfanger Road junction in order for pedestrians to have the shortest, and safer, route to local facilities. The two additional sections are shown on drawing **47455-P-002**.

## Location and Accessibility to Services

To assess the ability for potential residents to access services, research has been undertaken to locate the local services and facilities, which are tabulated below.

## Facility/Services Table

| Facility                        | Location           | Km   | Miles |
|---------------------------------|--------------------|------|-------|
| School - Infant                 | Fitzwalter Road    | 2.25 | 1.40  |
| School - Junior                 | The Entry          | 1.93 | 1.20  |
| School - Secondary              | Walcot Road        | 1.61 | 1.00  |
| Children's Centre               | Fitzwalter Road    | 2.25 | 1.40  |
| Post Office                     | Chapel Street      | 1.77 | 1.10  |
| Food Superstore                 | Park Road          | 2.09 | 1.30  |
| Public House                    | St Nicholas Street | 1.45 | 0.90  |
| Place of Worship                | Farthing Close     | 0.78 | 0.48  |
| Local Employment Area           | Vince's Road       | 2.74 | 1.70  |
| Due Chara                       | Factory Lane       | 0.80 | 0.50  |
| Bus Stops                       | Heywood Avenue     | 1.28 | 0.79  |
| Gym/Indoor Sports<br>Facilities | Walcot Road        | 1.61 | 1.00  |
| Playing Field                   | Shelfanger Road    | 0.44 | 0.27  |
| Train Station                   | Station Road       | 3.38 | 2.10  |
| Shopping Centre                 | Market Place       | 1.61 | 1.00  |
| Doctors                         | Mount Street       | 1.45 | 0.90  |
| Dentist                         | Mount Street       | 1.61 | 1.00  |
| Pharmacy                        | Mount Street       | 1.61 | 1.00  |

The conclusions that can be drawn from the table are that most of the facilities and services are available in the local area. A key aim of the NPPF is to promote sustainable travel choices and accessibility to shops, jobs and other facilities whilst reducing the need to travel, especially by car.

Walking is identified as the most important form of transport at local level and the walking offers the greatest potential to replace the car for journeys of less than 2.0km. The guidance document (NPPF) also acknowledges that cycling has the potential to replace many car trips of less than 5.0km, which may also form part of longer journeys supported by public transport.

The table above provides an indication of the distances that need to be travelled to the facilities and as a consequence the following list indicates the acceptability of the site in terms of distance, frequency of use and acceptability of need to travel.

| Facility                        | Location              | ocation Km Likely Free |      |      |              |      | requency of Use        |      |  |  |
|---------------------------------|-----------------------|------------------------|------|------|--------------|------|------------------------|------|--|--|
|                                 |                       |                        |      | aily | Weekly<br>Km |      | Greater than<br>Weekly |      |  |  |
|                                 |                       |                        |      | m    |              |      | Km                     |      |  |  |
|                                 |                       |                        | <5.0 | >5.0 | <5.0         | >5.0 | <5.0                   | >5.0 |  |  |
| School - Infant                 | Fitzwalter Road       | 2.25                   | ✓    |      |              |      |                        |      |  |  |
| School - Junior                 | The Entry             | 1.93                   | ✓    |      |              |      |                        |      |  |  |
| School -<br>Secondary           | Walcot Road           | 1.61                   | ~    |      |              |      |                        |      |  |  |
| Children's Centre               | Fitzwalter Road       | 2.25                   | ✓    |      |              |      |                        |      |  |  |
| Post Office                     | Chapel Street         | 1.77                   |      |      | ✓            |      |                        |      |  |  |
| Food Superstore                 | Park Road             | 2.09                   |      |      | ✓            |      |                        |      |  |  |
| Public House                    | St Nicholas<br>Street | 1.45                   |      |      |              |      | ~                      |      |  |  |
| Place of Worship                | Farthing Close        | 0.78                   |      |      | ✓            |      |                        |      |  |  |
| Local Employment<br>Area        | Vince's Road          | 2.74                   | ~    |      |              |      |                        |      |  |  |
| Bus Stops                       | Factory Lane          | 0.80                   | ✓    |      |              |      |                        |      |  |  |
|                                 | Heywood<br>Avenue     | 1.28                   | ~    |      |              |      |                        |      |  |  |
| Gym/Indoor<br>Sports Facilities | Walcot Road           | 1.61                   |      |      | ~            |      |                        |      |  |  |
| Playing Field                   | Shelfanger Road       | 0.44                   |      |      | √            |      |                        |      |  |  |
| Train Station                   | Station Road          | 3.38                   | ✓    |      |              |      |                        |      |  |  |
| Shopping Centre                 | Market Place          | 1.61                   |      |      |              |      | ✓                      |      |  |  |
| Doctors                         | Mount Street          | 1.45                   |      |      |              |      | ✓                      |      |  |  |
| Dentist                         | Mount Street          | 1.61                   |      |      |              |      | ✓                      |      |  |  |
| Pharmacy                        | Mount Street          | 1.61                   |      |      |              |      | ~                      |      |  |  |

## Acceptability of Travel/Use Table

The conclusions of the acceptability table for distance and frequency travelled indicates that most daily activities are within 2.0km of the development.

Whilst other activities and frequency usage of facilities are likely to be weekly or greater than weekly, the table shows that most are within 5.0km of the site and also less than 2km, indicating that there is a likelihood that walking, and cycling could be used to travel to and from the majority of these locations.

## Transportation Links including Pedestrian, Cycle and Public Transport

As stated previously local, regional and national guidance for transportation and residential dwellings advises that proposed development should be readily accessed by all sustainable modes of transport.

Considering the different modes, an assessment can be made in respect of the suitability of existing infrastructure.

## Pedestrians

The routes for pedestrians are currently served well from the proposed site access to all the facilities recorded in the '*Facility/Services Table'*. All routes consist of road with footways on at least one side of the carriageway and with the addition of the proposed footway on the west of Shelfanger Road, this accessibility will be improved.

An initial assessment of the routes to schools, show that there are footways to the schools and suitable routes are available. Should, through a detailed assessment, crossing points be needed there are options available, which could mitigate the perceived risks. Page 5.../ Land at Sturgeons Farm, Diss

## Cyclists

The bicycle has become a much more widely used mode of transport in recent years, as promoting the healthier lifestyle and the current economic circumstances that affects the population. From assessing the locations of the facilities locally, many of them are well within the 5.0km cycling parameters that are recognised in the NPPF.

The majority of the roads in Diss are within a 30mph or 20mph speed limit and, thus, provide an appropriate network for cycle use in the town, to access local facilities. Using the SUSTRANS website, it appears that national cycle route number 30 links to Diss Train Station, forming a route between Ellingham, Bungay and Knettishall via Eye.

## Public Transport

To establish a criteria for public transport provision, guidance was sought from Norfolk County Council on the necessary bus service frequency. A benchmark guide to bus services can be found in the Norfolk Bus Strategy 2003/4 to 2008/9. Whilst this document is a few years old it has not been updated, but does give criteria for 'Target level of service in rural areas (all offering a return journey)'.

The table indicates that for a parish population of over 3000 the target service level should provide the following:

- Shopping service, five days a week;
- journey to work service;
- a Saturday service;
- a Sunday service;
- evening service and;
- a basic frequency at least hourly.

The closest stops to the proposed site are  $0.8 \mbox{km}$  and  $1.28 \mbox{km}$  from the proposed site centre.

| Operator         | Service          | Frequency   |  |  |
|------------------|------------------|---|--|--|
|                  | 1 Diss - Norwich | Mon – Fri: 0709, 0909, 1212, 1334<br>Sat: 0714, 0909, 1214, 1707          |  |  |
| Simonds          | 1 Norwich - Diss | Mon – Fri: 0922, 1236, 1441, 1646,<br>1905<br>Sat: 0929, 1305, 1435, 1935 |  |  |
| H Semmence & Co. | 17 Diss – Roydon | Mon – Fri: 1122, 1337   |  |  |
|                  | 17 Roydon - Diss | Mon – Fri: 0923, 1157   |  |  |

(All main stop details included)

These bus times were taken from the two bus stops closest to the site, located on Factory Lane and Heywood Road.

Page 6.../ Land at Sturgeons Farm, Diss

There is also a local Community Bus Service called Borderhoppa, which operates within 61 Parishes of Norfolk and Suffolk, Roydon and Diss included. Should access to local services be needed, these services can be called upon and a Dial-a Ride service is also available.

There are also more routes available from Diss bus station, situated 1.9km from the site for pedestrians, along with other additional stops on surrounding roads. From Diss bus station, the following destinations can be reached: Norwich Railway Station, Ipswich, Bury St Edmunds, Beccles, London, and more. Should additional bus services be required, this can be discussed with the local bus operator.

Alternatively, local rail services can be found at Diss train station which is located approximately 3.38km walking/cycling distance from the site. At the station Network Rail information indicates that there are 36 bicycle spaces and 326 vehicular parking spaces (of which 6 are accessible spaces). The station offers step free access to both/all platforms with some staff assistance, if required.

The key service operating from Diss Station is the Norwich to London Liverpool Street service via Diss which runs on an a 30minute basis between 05:18 and 22:17. This service also stops at Ipswich, Colchester, Stratford London and other train stations.

Services are frequent and offer good commuting and social facilities to the residents requiring access to them. The accessibility of the buses and trains may also encourage more individuals to use public transport, rather than using their cars. Furthermore, there is good accessibility to the public transport via footways and footpaths to reach the bus stops and train station in Diss.

Overall, accumulatively, the bus timetables meet the Norfolk County Council requirements for Diss in terms of public transport availability and frequency.

## **Development trip generation**

The proposed development site vehicle trip generation can be calculated based on similar sites and data taken from a national data base (TRICS). An assessment of the trip generation from the proposed development site could also be taken from the local trips undertaken by the occupants of the dwellings already in the town. In general, the trip generation will be up to an approximate of 0.487 trips per dwelling in the peak hour. On the basis of 415 dwellings, the development is likely to generate approximately 202 additional trips in the peak hour.

A brief review of journeys to work from the 2011 Census for the trip distribution summary for Middle Layer Super Output Area, South Norfolk 015, in which the site lies, has been completed.

Trips from Diss are distributed in the directions as indicated in **Table 1** below;

|                                     | Percentage<br>of Trips | Destination/s  | Likely Route to<br>destination  |
|-------------------------------------|------------------------|--|---|
| Trips staying in<br>Diss            | 27%                    | Diss   | Walk, Cycle, Drive via<br>Shelfanger Road   |
| Route towards the<br>North          | 18%                    | Attleborough,<br>Wymondham, Norwich                  | B1077 Shelfanger Road   |
| Route towards the<br>West           | 7%                     | Thetford and A11 South                               | Shelfanger Road /<br>A1066 west   |
| Route towards the<br>South          | 28%                    | A140, Ipswich, A143, A14<br>East and West            | Shelfanger Road,<br>Denmark Street, South<br>towards Palgrave   |
| Route towards the<br>East/Northeast | 20%                    | Long Stratton, Beccles,<br>Lowestoft, Great Yarmouth | Two routes; Via<br>Shelfanger Road &<br>A1066 Victoria Road or<br>North around Diss via<br>Frenze Hall Lane to<br>Sawmills Road or north<br>via Walcott Green |
| Total                               | 100%                   |  |   |

## Table 1.0 – Trip distribution from Census 2011 Data

To determine the number of trips likely to be made in each direction the percentages are multiplied by the number of generated trips in the peak hour which totals 202. These numbers are indicated in **Table 2** below;

|   | Percentage<br>of Trips | Destinations  | Likely Route to<br>destination  | Number of Trips<br>(% x total of 202) |
|---|------------------------|---|---|---------------------------------------|
| Trips<br>staying in<br>Diss                   | 27%                    | Diss  | Walk, Cycle, Drive via<br>Shelfanger Road   | 54.5                                  |
| Route<br>towards<br>the North                 | 18%                    | Attleborough,<br>Wymondham,<br>Norwich                        | B1077 Shelfanger Road   | 36.4                                  |
| Route<br>towards<br>the West                  | 7%                     | Thetford and A11 South  | Shelfanger Road /<br>A1066 west   | 14.1                                  |
| Route<br>towards<br>the South                 | 28%                    | A140,<br>Ipswich,<br>A143, A14<br>East and West               | Shelfanger Road,<br>Denmark Street, South<br>towards Palgrave   | 56.6                                  |
| Route<br>towards<br>the<br>East/North<br>east | 20%                    | Long Stratton,<br>Beccles,<br>Lowestoft,<br>Great<br>Yarmouth | Two routes; Via<br>Shelfanger Road &<br>A1066 Victoria Road or<br>North around Diss via<br>Frenze Hall Lane to<br>Sawmills Road or north<br>via Walcott Green | 40.4                                  |
| Total   | 100%                   |   |   | 202                                   |

Page 8.../ Land at Sturgeons Farm, Diss

It can be seen that traffic travelling north is unlikely to have a material effect on the local background traffic numbers at only 36 vehicles. Traffic travelling towards the west may use the A1066, but could also use Shelfanger Road, Roydon Road and Old High Road to get to the A1066, avoiding the Denmark Street/Park Road junction. It is likely that the routes towards the south will use Shelfanger Road and Denmark Street, towards Palgrave, avoiding Park Road and Victoria Road. The vehicle routes towards the east and northeast, may as mentioned in **Table 2** take alternative routes other than Park Road and Victoria Road, thus also reducing the influence on the centre of Diss.

If therefore, an assumption is made on the influence of the traffic from the development site on the centre of Diss, it is likely that if 50% of the traffic generation going south and east is considered going through the town centre, then this vehicular trip generation equals  $0.5 \times (57+40) = 48.5$  vehicles, the equivalent to almost one per minute which is relatively low and also a likely overestimate.

## Traffic routes within Diss

An overview of the traffic issues in Diss has been reviewed through the documents publicly available and those submitted as part of recent planning applications. The most significant document published in 2015 was the A1066 Victoria Road /Vinces Road Junction Improvement Feasibility Study, April 2015, prepared by Mouchel Infrastructure Services for Norfolk County Council.

The report concluded on an improvement for the junction, enlarging the mini roundabout to a 20m ICD to help reduce the existing traffic congestion. It is reported that the scheme is now progressing and funding is available to deliver the improvement for the benefit of all users of Victoria Road in Diss.

## Highway Accident Data Review

Along Shelfanger Road, Louie's Lane, Farm Close and other roads in the vicinity of the site, there have been no accidents within the last 5 years (2017-2013). Furthermore, the accident data shows there has only been three slight accidents and one serious accident on the Shelfanger Road south of Sunnyside junction. This suggests the local highway network is not within a high risk accident area and the local road network is unlikely to require any additional traffic calming measures on the grounds of highway safety. All information collected from publicly available data (viewable via <u>www.crashmap.co.uk</u>).

## **Highway/Transportation Improvements**

To access the site there will be two access, the first on the Shelfanger Road, where, visibility to the north and south is 120m at a 2.4m setback, complying with the Manual for Streets standards of 59m for a design speed of 37mph.

The second access off Louie's Lane / Farm Close, the visibility to the south and north is 90m and 100m, respectively at a 2.4m setback, complying with the Manual for Streets standards of 59m for a design speed of 37mph.

The area of Shelfanger Road, Louie's Lane, Farm Close and other roads surrounding the site are 30mph carriageways with footways on at least one side of the road. In the Safe Routes to School Assessment, the need to cross Shelfanger Road has been identified and with no traffic data, it is difficult to conclude on the best mitigation, if any, to provide a crossing point. It is suggested that should a crossing point be needed then consideration would be made in relation to this at the planning application stage. There are various Page 9.../ Land at Sturgeons Farm, Diss

options for the mitigation and these could include a tactile paving pedestrian island, zebra crossing or a Toucan crossing if required.

## Conclusions

To collate the issues and highlight the matters that are relevant to transportation for the proposed development at Sturgeons Farm, Diss, the following table shows the summary of benefits that this scheme includes:

## Summary Table

| Matters                      | Comment   | Satisfactory | Needs some<br>Upgrade | Not Satisfactory |
|------------------------------|---|--------------|-----------------------|------------------|
| Site Access                  | A satisfactory access with necessary visibility can be achieved.  |              |                       |                  |
| Local Junction<br>Assessment | Based upon preliminary findings no offsite junction<br>upgrades are required. Offsite highway<br>improvements are being provided in Diss by NCC.    |              |                       |                  |
| Accessibility to<br>Services | A high proportion of daily and weekly services can be<br>accessed by pedestrian, cyclists or public transport<br>routes all less than 2.0km.        |              |                       |                  |
| Pedestrian Links             | Good routes to schools and facilities are available.<br>Consideration to footway upgrades are have been<br>suggested.                               |              |                       |                  |
| Cycle Facilities             | There is not a specific route in the village however, a 20/30mph speed limit is present between the site and local facilities, conducive to cycling |              |                       |                  |
| Public Transport             | The current public transport provision within Diss, with the community and wider network routes does meet the NCC targets.                          |              |                       |                  |

It is therefore concluded that in terms of vehicular access, accessibility to services, other modes of transport, the site meets all the necessary criteria.

In summary, the development, which will generate a low level of trips in the peak hour towards/through the Town centre, as demonstrated in this letter.

I trust the foregoing is satisfactory, but if we can be of further assistance, please do not hesitate to contact us.

Yours sincerely, Prepared by Lauren Gray

on behalf of Richard Jackson Ltd

Checked by Martin Doughty (Director) – BEng (Hons), CEng, FICE, FCIHT, MAPM on behalf of Richard Jackson Limited

CC Simon Henry – Bidwells Iain Hill – Bidwells

Encs – Figure 100, Drawing 47455-P-001 & 002





# NOTES:

- 1. ALL MEASUREMENTS ARE IN METRES UNLESS OTHERWISE STATED
- 2. MEASUREMENTS SHOWN ARE RJ ONSITE MEASUREMNETS AND NEED TO BE CONFIRMED WITH A TOPOGRAPHICAL SURVEY
- 3. THE TYPE 2 ACCESS ROAD IS TAKEN FROM THE NORFOLK RESIDENTIAL DESIGN GUIDE
- 4. THE SPEED LIMIT OF THE HIGHWAY SHOWN IS 30mph
- 5. THE ADDITIONAL FOOTWAY SHOWN ON LOUIE'S LANE CAN BE PROVIDED WITHIN HIGHWAY LAND OR LAND WITHIN THE SITE OWNERSHIP



This drawing is to be read in conjunction with all other Engineer's drawings and all other project information. Any discrepancy between the Engineer's drawings and other project information is to be reported to the Engineer immediately.



Project

STURGEONS FARM ROYDON, DISS

Title

Drawing Status INFORMATION

TENDER

PHASE 1 ACCESS ROAD AND MINOR OFFISTE IMPROVEMENTS

Client G.N. RACKHAM & SONS LTD Scale Drawn Date 23/06/16 1:500 @ A2 J. PITCHER Job Manager Checked Approved M. DOUGHTY D. PALMER M. DOUGHTY **Richard**Jackson Engineering Consultants Tel: 01206 228800 847 The Crescent, Colchester, Essex CO4 9YQ Suite 409, 1 Alie Street, London E1 8DE Tel: 020 7448 9910 🛛 York House, 3 Station Court, Great Shelford, Cambs CB22 5NE Tel: 01223 314794 🛛 6 The Old Church, St. Matthews Road, Norwich, Norfolk NR1 1SP Tel: 01603 230240 The Wheelhouse, Bonds Mill, Stonehouse, Gloucestershire GL10 3RF Tel: 01172 020070 Emall Address: mall@rj.uk.com Website: http://www.rj.uk.com Drawing No. Revision 47455-P-001

APPROVAL

COSTING

□ CONSTRUCTION □ AS CONSTRUCTED



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