

Appendix 3: Comments from Highways Transport and Design Manager

INTERNAL MEMORANDUM
Highways, Transport and Design

From: Highways, Transport and Design Manager
To: Planning Development Services Manager
FAO: Helen Boston
CC: Planning Administration

Proposal: Hybrid planning application comprising of 1) full application for the erection of 969 dwellings with associated infrastructure, access, landscaping, open space, SUDS and 2) Outline application for proposed primary school with all other matters reserved	Date:	01/02/21		
Location: Land To The East Of Yarm Back Lane, Stockton-on-Tees	Ref:	20/0191/EIS	Rev	4

Highways Transport and Design Consultation

I refer to your memo dated: 10/09/20

General Summary

The application site at Yarm Back Lane forms part of the West Stockton Sustainable Urban Extension (SUE) which wraps around the western fringes of the Stockton urban area from Letch Lane in the north to the A66 in the south. The site comprises approximately 135 hectares of land for up to 2550 dwellings. and is identified for residential development within the Adopted Local Plan under Policy H2.

The current application covers the southern section of this urban extension and comprises several agricultural fields on the western edge of Stockton, between Darlington Back Lane in the north and the A66 in the south, the western boundary is defined by Yarm Back Lane.

The Highways, Transport and Design Manager has reviewed the information submitted in support of the proposals and, subject to agreeing the requirements of the s106 Agreement and the imposition of controlling conditions, has no objections to the proposals.

The s106 Agreement should, as a minimum, secure the following:

- The proposed highways mitigation at Elton Interchange which should be completed prior to the occupation of the 161st dwelling;
- The proposed highways mitigation at the junction of Yarm Back Lane / Darlington Back Lane / Bishopton Road West which should be completed prior to the occupation of the 161st dwelling;

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- A proportionate contribution towards the cost of the proposed mitigation at Harrowgate Lane / Junction Road / Durham Road 'Horse and Jockey' roundabout;
- A proportionate contribution towards Public Transport Improvements as set out in the West Stockton Urban Extension Masterplan.
- Vehicular linkages from the Taylor Wimpey site to the triangular shaped third-party land. This connection is to be safeguarded and would not be implemented until agreement is reached with the owners of the land to make the necessary connection. This work would likely form part of the future s38 agreement;
- The pedestrian linkages at the following locations:
 - Persimmon Homes – from the northern play area / POS to Surbiton Road (adjacent to 227 Surbiton Road);
 - Taylor Wimpey – from adjacent to plot 420 providing a connection to Symons Close;
 - Taylor Wimpey – from the central POS to Ravensworth Grove;
 - Taylor Wimpey – from the southern POS to the Penny Black Public House (PH). This connection is to be safeguarded and would not be implemented until agreement is reached with the owners of the Penny Black PH to make the necessary connection;
 - Taylor Wimpey – to the triangular shaped third-party land. This connection is to be safeguarded and would not be implemented until agreement is reached with the owners of the land to make the necessary connection. This work would likely form part of the future carriageway connection.

In accordance with the West Stockton SUE Masterplan a contribution towards Additional Infrastructure Works will also be required.

It should also be noted that, whilst the proposed site layout is broadly acceptable, some minor changes are still required which are set out in the detailed comments below.

With regards to the Landscape and Visual aspects of the proposals it is noted that further information is required to fully satisfy outstanding urban design or landscape and visual concerns. It is considered that these issues can be resolved by the imposition of controlling conditions, some of which must be prior to commencement of any works on site:

- Retention of Existing Trees Shrubs and Hedges – To ensure retention of boundary hedgerows and trees to the perimeter of the site, which may be at risk during the construction period;
- Tree and Hedgerow Protection – To secure details of the tree and hedgerow protection scheme which must be implemented on site to protect the perimeter boundary hedge;
- Landscaping Hardworks – To secure details of hard landscaping materials across the development to ensure some consistency in quality and the hierarchy of roads between the two development parcels through their visual appearance;
- Enclosure – To secure high-quality plot boundary treatments across the whole site, for both site frontage and rear garden boundaries which reflect the provide a hierarchy of streets. Currently proposals within the TW area of the site utilising only a 1.8m close board timber fence are currently unacceptable;
- Mounding and levels within Public Open Space (POS) – It is expected that a significant volume of material will be generated on site during construction. The condition is required to

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control redistribution of site won materials across the site, and particularly within areas of POS to agree upfront the locations, profile and appearance of any mounds or raised areas;

- Soil Management – Due to the significant volumes of materials to be generated on site the condition is required to control the movement and storage of soils on site during the construction process, and minimise impacts on neighbouring properties;
- On Site Public Open Space – Only very limited information has been submitted regarding areas of POS. From the submitted information it is not possible to understand the character or quality of the spaces, site levels, provision of street furniture or lighting, or details of the two proposed play areas. Therefore, a condition is required to secure these details;
- Landscaping Softworks – There have been some queries regarding the submitted soft landscape information. Issues to be resolved include:
 - tree selection across the site;
 - restricted planting space of only 1m width adjacent to plot boundaries;
 - soft landscaping provision at the south western boundary of the site to provide screening of the new road layout and improve visual separation between the proposed housing development and the Elton Interchange and realigned Darlington Road; and
 - details of planting and seeding within the SuDS basins once the final design and therefore anticipated wet periods can be established.

Due to the limited time frame it is considered that a condition can be applied to secure details of soft landscaping across the site, broadly in accordance with the submitted landscape masterplan:

- Maintenance of Softworks – To secure details regarding future maintenance of soft landscaping across the site;
- Trees Within and Adjacent to the Adopted Highway – Condition to secure details where tree planting is undertaken in close proximity to the adopted highway, to prevent future damage from tree roots;
- Scheme for Illumination – To secure details of street lighting across the development;
- Pumping Station – Due to the prominent locations of the two pumping stations further consideration is required regarding the appearance of these features to minimise their impact upon the streetscape and views from properties which overlook these features, therefore a condition is required.

It is noted that landscape works surrounding the improvements to the Elton Interchange will be subject to detailed design and will be secured via a s278 Agreement.

Detailed comments and conditions are included in Appendix 1 and Appendix 2 respectively.

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Appendix 1 – Detailed Comments

Highways Comments

Traffic Impact

The applicant has submitted a Transport Assessment (TA) and a Transport Assessment Addendum (TAA) in support of the proposed development which includes assessments of the impact of the proposed development on key junctions, using local junction models, and the wider highway network, using the Council's West Stockton Aimsun Model (WeSAM) and North Stockton Aimsun Model (NorSAM).

The trip rates for the proposed development, which have been agreed with the Council and Highways England, are representative of those applied to other local developments. The forecast vehicle trip generation of the proposed development are shown below.

Time Period	Vehicular Trip Generations		
	Arrivals	Departures	Total
AM Peak 08:00-09:00	150	400	550
PM Peak 17:00-18:00	376	230	606

The proposed development also includes a primary school and the trip forecasts associated with the proposed school have not been provided in the TA. The principle of not assessing trips associated with the proposed school was agreed at scoping stage providing the school access junction would *'operate comfortably in the design year'*. An analysis of the operation of the northern most access junction, which provides the most direct access to the school site, shows that it should operate within capacity in future years.

In order to assess the impact of the proposed development at key junctions, within the West Stockton area, local capacity assessments have been undertaken at the following locations:

- A66/Durham Lane/Yarm Back Lane 'Elton Interchange';
- Darlington Back Lane/Redmarshall Road/ Yarm Back Lane 'Two Mile House';
- Darlington Back Lane/Bishopton Road West;
- Darlington Back Lane/Harrowgate Lane;
- Harrowgate Lane/Marske Lane;
- Harrowgate Lane/Scurfield Road;
- Harrowgate Lane/Letch Lane;
- Harrowgate Lane/Einstein Way;
- Harrowgate Lane/Easington Road;
- Harrowgate Lane/Junction Road/Durham Road 'Horse & Jockey'.

Whilst the TA includes detailed analysis of each junction the vast majority operate within capacity and therefore no mitigation is required. This response will therefore focus on key junctions where mitigation has been identified to allow the West Stockton Urban Extension, which this site sits within, to be delivered. The key junctions are:

- A66 / Durham Lane / Yarm Back Lane 'Elton Interchange';

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- Darlington Back Lane / Redmarshall Road / Yarm Back Lane / Bishopton Road West 'Two Mile House';
- Darlington Back Lane / Bishopton Road West;
- Harrogate Lane / Junction Road / Durham Road 'Horse and Jockey'.

A66 / Durham Lane / Yarm Back Lane 'Elton Interchange'

The two existing dumbbell roundabouts at Elton Interchange currently experience some queuing/delay and the A66 slip roads (in particular the eastbound merge and the westbound diverge) also accommodate relatively high volumes of traffic. It was therefore agreed between all parties, during the Tithebarn Appeal, that the proposed strategic improvements at this junction should be brought forward early within the build out of the development sites which has been agreed at 161 dwellings. As the appeal was allowed the strategic improvements are now a material planning matter.

The impact of the development has therefore been assessed against the proposed strategic improvement at this location using LINSIG and the results are shown below.

Traffic Stream		AM Peak Hour			PM Peak Hour		
Ref	Description	DoS (%)	Mean Max Queue (pcu)	Mean Max Delay (s/pcu)	DoS (%)	Mean Max Queue (pcu)	Mean Max Delay (s/pcu)
Junction 1 – Yarm Back Lane							
1/1	Yarm Back Lane Ahead	79.8%	14	24	74.1%	9	34
1/2	Yarm Back Lane Ahead	39.9%	5	14	40.2%	4	25
2/1	Ahead	27.7%	1	3	48.5%	2	4
2/2	Right	75.8%	5	56	72.2%	8	27
2/3	Right	75.2%	5	56	71.9%	8	28
3/1	Darlington Road Left	76.5%	9	35	28.3%	3	13
3/2	Darlington Road Right	33.2%	2	40	23.7%	1	41
Junction 2 – Elton Interchange							
1/2+1/1	EB off-slip Left	43.5%	2	39	54.4%	3	38
1/3	EB off-slip Right	32.6%	1	40	28.8%	2	36
2/1	Left	75.5%	11	9	44.3%	4	4
2/2	Ahead	79.1%	8	25	48.1%	3	16
4/1	SB overbridge Ahead	48.5%	9	15	38.6%	2	7
4/2	SB overbridge Right	67.6%	5	47	61.8%	1	34
5/1	NB overbridge Ahead	24.9%	2	4	47.5%	5	5
5/2	NB overbridge Ahead	20.1%	2	4	53.3%	5	5
5/3	NB overbridge Right	63.5%	7	12	21.4%	2	25
6/1	Ahead/Left	47.9%	5	11	48.2%	3	19
6/2	Ahead	69.3%	10	16	49.9%	4	19
7/1	WB off-slip Left	41.7%	5	18	51.4%	7	18
7/2	WB off-slip Right	15.2%	1	14	57.2%	7	17
Junction 3 – Darlington Road							
1/1	Residential Access Right/Ahead/left	0.0%	0	0	0.0%	0	0

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2/1	Durham Lane Ahead/Left	79.9%	15	21	59.9%	10	15
3/1	Darlington Road Left/Right/Ahead	38.0%	2	41	33.0%	2	43
7/1	Ahead	65.1%	7	9	60.8%	6	9
7/2	Right	12.0%	0	17	14.0%	0	16

The results shown in table demonstrate that the proposed Elton Interchange signalised junctions would operate satisfactorily within desirable practical capacity (less than 90% DoS) during both peak hours in the 2032 Design scenario.

It is, therefore, concluded that the following improvements at Elton Interchange will satisfactorily and safely accommodate a development of up to 969 dwellings on the Yarm Back Lane Site and are proportionate in the context of the overall junction:

- Replacement of the two existing dumbbell roundabouts with traffic signals;
- Provision of an additional merge lane on the Eastbound on-slip;
- Provision of queue detection loops on the existing Westbound off-slip.

Should the application be approved the required mitigation should be secured via a s106 Agreement and the trigger for bringing forward the necessary mitigation would be as agreed with Highways England, prior to the occupation of the 161st house.

Darlington Back Lane / Redmarshall Road / Yarm Back Lane / Bishopton Road West 'Two Mile House'

The existing Darlington Back Lane / Yarm Back Lane 'Two Mile House' junction currently experiences queuing and delays. It was therefore agreed between all parties, during the Tithebarn Appeal, that the proposed strategic improvements at this junction should be brought forward early within the build out of the development sites which has been agreed at 161 dwellings.

The impact of the development has therefore been assessed against the proposed strategic improvement at this location using LINSIG and the results are shown below.

Traffic Stream		AM Peak Hour			PM Peak Hour		
Ref	Description	DoS (%)	Mean Delay/Veh (s)	Mean Max Queue (pcu)	DoS (%)	Mean Delay/Veh (s)	Mean Max Queue (pcu)
J1: Darlington Back Lane							
1/2+1/1	Bishopton Road W Left Right	90.6%	62	8	90.8%	68	112
2/1+2/2	Darlington Back Ln EB Right Ahead Left	90.5%	37	14	86.5%	25	21
3/1	Darlington Back Ln WB Ahead Left	12.5%	17	2	17.7%	16	3
3/2+3/3	Darlington Back Ln WB Ahead Right	87.9%	31	6	85.4%	27	7
6/1	Access Right Left	93.7%	70	18	89.8%	69	13
J2 Yarm Back Lane							
1/1+1/2	Darlington Back Lane EB Ahead Right	70.7%	15	16	73.1%	16	17
2/1	Darlington Back Lane WB Left	8.8%	35	1	13.6%	28	1
2/2+2/3	Darlington Back Lane WB Left Ahead	54.4%	10	13	60.5%	8	10
3/1	Yarm Back Lane Entry	2.1%	1	0	3.3%	1	0

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3/2	Yarm Back Lane Entry	2.1%	1	0	5.6%	1	0
4/2+4/1	Yarm Back Lane Right Left	47.8%	48	2	27.7%	45	1

The results shown in the table demonstrate that the proposed signalised junctions would operate satisfactorily at or around desirable practical capacity during both peak hours in the 2032 Design scenario, with a maximum DoS of 93.7% in the AM peak hour on the future northern site access approach. Whilst a DoS of 93.7% is above the desirable practical capacity queuing associated with this is not considered to be severe and this is therefore considered to be acceptable.

Should the application be approved the required mitigation should be secured via a s106 Agreement. The trigger for bringing forward the necessary mitigation at this junction should be aligned with that of Elton Interchange and will therefore be required prior to the occupation of the 161st house.

Harrowgate Lane / Junction Road / Durham Road 'Horse and Jockey'

A significant improvement scheme at this junction, which includes local carriageway widening to improve capacities as well as signalisation of the Harrowgate Lane and Junction Road approaches, has already been identified. The impact of the development has therefore been assessed against the committed improvement at this location using LINSIG and the results are shown below.

LANE		AM		PM			
		D.o.S (%)	Mean Max Queue (pcu)	D.o.S (%)	Mean Max Queue (pcu)		
J1: Roundabout							
1/1	Durham Road NB Left	13.2%	1	34.2%	1		
1/2+1/3	Durham Road NB Ahead	26.7%	2	68.9%	5		
2/2+2/1	Harrowgate Lane Ahead Left	65.1%	10	66.5%	5		
2/3	Harrowgate Lane Ahead	19.1%	3	19.6%	2		
3/1	A177 SB Left	34.0%	3	32.9%	3		
3/2+3/3	A177 SB Ahead	91.8%	17	72.9%	5		
4/1	Junction Road Ahead Left	66.3%	11	63.5%	10		
4/2	Junction Road Ahead	23.3%	2	35.0%	5		
5/1	Roundabout NB Ahead	44.8%	4	52.2%	11		
5/2	Roundabout NB Right Ahead	36.6%	5	37.5%	4		
6/1	Roundabout EB Ahead	28.6%	0	27.6%	0		
6/2	Roundabout EB Right	10.6%	0	7.4%	0		
7/2+7/1	Roundabout SB Ahead	92.1%	24	59.7%	9		
7/3	Roundabout SB Right	26.5%	5	51.5%	8		
8/1	Roundabout WB Ahead	21.6%	0	47.1%	0		
8/2	Roundabout WB Right	9.3%	0	14.0%	0		
Junction 2: Tesco Access							
1/1	A177 NB Ahead	27.9%	1	37.3%	2		
1/2	A177 NB Ahead	23.6%	1	26.3%	1		
2/1	Tesco Left	20.6%	2	18.9%	2		
2/2	Tesco Left	68.9%	7	60.3%	10		
3/1	A177 SB Ahead	72.6%	15	65.4%	10		
J3: Harrowgate Lane Ped							
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1/1	Harrowgate Lane EB Ahead	63.5%	10	46.7%	6
2/1	Harrowgate Lane WB Ahead	36.5%	3	73.0%	8
J4: Junction Road Ped					
1/1	Junction Road EB Ahead	54.7%	5	53.4%	3
3/1	Junction Road WB Ahead	33.1%	3	31.7%	3
3/2	Junction Road WB Ahead	11.7%	1	17.5%	2
J5: Durham Road Ped					
1/1	Durham Road NB ped Ahead	34.0%	4	56.5%	8
3/1	Durham Road SB Ahead	47.9%	4	30.5%	2
3/2	Durham Road SB Ahead	35.3%	0	12.1%	0

The results shown in the table demonstrate that in the 2032 base scenario the committed improvement scheme operates satisfactorily with all approach arms/lanes generally well below the desirable practical capacity of 90% DoS during both peak hour periods.

The only exceptions are the A177 Durham Road and Internal Roundabout southbound ahead lanes which both operate slightly above desirable practical capacity during the morning peak hour, but well below absolute capacity.

Should the application be approved a contribution towards the delivery of the proposed mitigation should be secured via a s106 Agreement.

AIMSUN Modelling

The impact of the proposed development, on the wider highway network, has also been assessed utilising the Council's West Stockton Aimsun Model (WeSAM) and North Stockton Aimsun Model (NorSAM).

The WeSAM modelling results, for the AM Peak period, are included below.

WeSAM AM JOURNEY TIMES	1	2	3	4	Difference Between Column 4 and 3	Difference Between Column 4 and 2
	2032 Base With Horse & Jockey Imp	2032 Base All Imp	2032 Design With Horse & Jockey Imp	2032 Design All Imp		
Junction Road W/B - From Ragpath Lane to A177 inc. Horse & Jockey Roundabout	02:00	02:01	02:10	02:10	+00:00	+00:09
Harrowgate Lane S/B - From A177 to Darlington Back Lane (excluding junction)	04:12	04:12	04:18	04:20	+00:02	+00:08
Darlington Back Lane + Yarm Back Lane S/B - From Harrowgate Lane to Elton Interchange	13:28	04:05	12:32	04:38	-07:54	+00:33

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Total Southbound	19:40	10:18	19:00	11:08	-07:52	+00:50
From Burnhope to approach at northern Elton Interchange Roundabout	01:58	02:20	02:06	02:25	+00:19	+00:05
From northern Elton Interchange Roundabout to Darlington Back Lane/Harrowgate Lane junction	14:23	03:49	19:39	03:59	-15:40	+00:10
From north of Darlington Back Lane/Harrowgate Lane junction to Horse & Jockey junction (including junction)	04:41	05:00	04:34	06:10	+01:36	+01:10
Total Northbound	21:02	11:09	26:19	12:34	-13:45	+01:25

The results shown in the table demonstrates that for the 2032 AM Peak 'with development' situation the introduction of the proposed Yarm Back Lane / Darlington Back Lane and Elton Interchange infrastructure improvements (column 4) will reduce southbound and northbound journey times by 7:52 and 13:45 minutes respectively on average when compared to the scenario without these improvements (column 3).

Additionally, when compared to the 2032 Base scenario (column 2) the introduction of the proposed development traffic adds just 50 and 85 seconds on average to the southbound and northbound journey times respectively. In terms of the overall WeSAM network this AM peak hour development impact is considered to be negligible.

Furthermore compared to the 2032 Base with the Horse and Jockey Improvement only (column 1) the proposed 2032 Design scenario i.e. with development trips and additional infrastructure improvements (column 4) results in significant northbound and southbound journey time savings of 8 to 9 minutes.

The WeSAM modelling results, for the PM Peak period, are included below.

WeSAM PM JOURNEY TIMES	1	2	3	4	Difference Between Column 4 and 3	Difference Between Column 4 and 2
	2032 Base With Horse & Jockey Imp	2032 Base All Imp	2032 Design With Horse & Jockey Imp	2032 Design All Imp		
Junction Road W/B - From Ragpath Lane to A177 inc. Horse & Jockey Roundabout	02:04	01:55	02:52	02:54	+00:02	+00:59
Harrowgate Lane S/B - From A177 to Darlington Back Lane (excluding junction)	04:16	04:16	04:24	04:24	00:00	+00:08
Darlington Back Lane + Yarm Back Lane S/B - From Harrowgate Lane to Elton Interchange	13:14	04:04	16:35	04:33	-12:02	+00:29

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Total Southbound	19:34	10:15	23:51	11:51	-12:00	+01:36
From Burnhope to approach at northern Elton Interchange Roundabout	18:51	05:11	20:43	08:00	-12:43	+02:49
From northern Elton Interchange Roundabout to DBL/Harrowgate Lane junction	20:47	03:56	20:39	04:08	-16:31	+00:12
From north of DBL/Harrowgate Lane junction to Horse & Jockey junction (including junction)	04:07	04:21	04:10	04:23	+00:13	+00:02
Total Northbound	43:45	13:28	45:32	16:31	-29:01	+03:03

The results shown in the table demonstrates that for the 2032 PM Peak 'with development' situation the introduction of the proposed Yarm Back Lane /Darlington Back Lane and Elton Interchange infrastructure improvements (column 4) will reduce southbound and northbound journey times by 12:00 and 29:01 minutes respectively on average when compared to the scenario without these improvements (column 3).

When compared to the 2032 Base scenario (column 2) the introduction of the proposed development traffic adds 1:36 and 3:03 minutes on average to the southbound and northbound journey times respectively.

In terms of the overall WeSAM network the impact of the proposed development in the PM peak is relatively limited, despite the introduction of further junctions (including signalised stop lines which hold 'through traffic' back to allow side road traffic to enter the network) as well as the addition of development traffic.

Furthermore, compared to the 2032 Base with the Horse and Jockey Improvement only (column 1) the proposed 2032 Design scenario i.e. with development trips and additional infrastructure improvements (column 4) results in significant northbound and southbound journey time savings of 7½ and 27 minutes respectively

The NorSAM modelling results, for the AM Peak period, are included below.

NoSam AM JOURNEY TIMES	Section	1	2	Difference between Column 2 and 1
		2032 Base With H&J Imp	2032 Design With H&J Imp	
Junction Road E/B	From Harrowgate Lane to Ragpath Lane	00:59	00:59	+00:00
	From Ragpath Lane to The Glebe	01:02	01:00	-00:02
	From The Glebe to A1027	09:57	09:52	-00:05
Sub-Total		11:58	11:51	-00:07

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A1027 S/B	From Junction Road to The Glebe	01:16	01:21	+00:05
	From the Glebe to Dumbarton Avenue	01:35	01:13	-00:22
	From Dumbarton Avenue to A177	02:52	02:51	-00:01
Sub-Total		05:43	05:25	-00:18
A177 N/B	From A1027 to Darlington Lane	01:42	02:10	+00:28
	From Darlington Lane to Redhill Road	01:36	01:46	+00:10
	From Redhill Road to Harrowgate Road	00:48	00:48	+00:00
Sub-Total		04:06	04:44	+00:38
A177 S/B	From Harrowgate Lane to Redhill Road	02:56	02:47	-00:09
	From Redhill Road to Darlington Lane	01:53	01:52	-00:01
	From Darlington Lane to A1027	01:05	01:16	+00:11
Sub-Total		05:54	05:55	00:01
A1027 N/B	From A177 to Dumbarton Avenue	02:08	02:8	+00:10
	Dumbarton Avenue to The Glebe	03:12	03:12	+00:00
	From The Glebe to Junction Road	01:12	01:14	+00:02
Sub-Total		06:32	06:44	+00:12
Junction Road W/B	From A1027 to The Glebe	02:08	002:08	+00:00
	From The Glebe to Ragpath Lane	00:49	00:50	+00:01
	From Ragpath Lane to Harrogate Lane	01:41	01:36	-00:05
Sub-Total		04:38	04:34	-00:04

The results shown in the table demonstrates that for the AM Peak hour the development proposals increase average journey times by a maximum of 38 seconds on various sections of the route (both clockwise and counter-clockwise).

In terms of the overall NoSAM network such an impact is limited and considered to be immaterial. No highway mitigation works are therefore justified on this part of the highway network based on the AM peak model, which is perhaps not surprising as it is located some distance from the development Site.

The NoSAM modelling results, for the PM Peak period, are included below.

NoSam PM JOURNEY TIMES	Section	1	2	Difference between Column 2 and 1
		2032 Base With H&J Imp	2032 Design With H&J Imp	
Junction Road E/B	From Harrowgate Lane to Ragpath Lane	01:15	01:17	+00:02
	From Ragpath Lane to The Glebe	01:13	01:08	-00:05
	From The Glebe to A1027	03:09	02:58	-00:11
Sub-Total		05:37	05:23	-00:14
A1027 S/B	From Junction Road to The Glebe	01:16	01:25	+00:09
	From the Glebe to Dumbarton Avenue	04:03	04:44	+00:41

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	From Dumbarton Avenue to A177	01:18	01:20	+00:02
Sub-Total		06:37	07:29	+00:52
A177 N/B	From A1027 to Darlington Lane	05:23	05:23	+00:00
	From Darlington Lane to Redhill Road	01:11	01:11	+00:00
	From Redhill Road to Harrowgate Road	01:14	01:22	+00:08
Sub-Total		07:48	07:56	+00:08
A177 S/B	From Harrowgate Lane to Redhill Road	01:03	01:01	-00:02
	From Redhill Road to Darlington Lane	01:33	01:29	-00:04
	From Darlington Lane to A1027	01:25	01:24	-00:01
Sub-Total		04:01	03:54	-00:07
A1027 N/B	From A177 to Dumbarton Avenue	03:35	03:41	+00:06
	Dumbarton Avenue to The Glebe	02:19	02:20	+00:01
	From The Glebe to Junction Road	01:22	01:10	-00:12
Sub-Total		07:16	07:11	-00:05
Junction Road W/B	From A1027 to The Glebe	03:17	03:45	+00:28
	From The Glebe to Ragpath Lane	04:25	04:32	+00:07
	From Ragpath Lane to Harrogate Lane	01:04	01:04	+00:00
Sub-Total		08:46	09:21	+00:35

The results shown in the table demonstrates that for the PM Peak hour the development proposals have a similar minimal effect as the AM peak on the NoSAM network. In fact, as for the morning peak period, on some sections of the route, average journey times are predicted to decrease. In terms of the overall NoSAM network such an impact is very limited and considered to be immaterial. The PM peak model therefore also confirms that no highway mitigation works are required or justified on this part of the highway network.

The applicant will however, in accordance with the West Stockton SUE Masterplan, be required to make a contribution towards Additional Infrastructure Works which may be utilised for improvements within the vicinity of the NorSAM.

Vehicle Access Strategy

Currently four ghost island Protected Right Turns (PRTs) junctions are proposed along the length of Yarm Back Lane to access the site. The spacing of these junctions, as currently identified will require the full length of this road to be lit by street lighting. The LHA, as part of the s278 Agreement for these junctions, will design the street lighting requirements.

A proposed 3m wide verge with a post and rail fence denoting the highway boundary is to be provided along the length of YBL.

It is proposed that the 50mph speed limit be maintained on YBL, with the exception of the northern section where a 30mph speed limit is proposed on the section near to the proposed primary school. This change to the speed limit will require amendments to the existing Traffic Regulation Order (TRO).

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An initial review of the junction assessment results, which are included within the submitted TA, indicate that the site access junctions will operate within theoretical capacity.

The proposed site access arrangements are therefore considered to be acceptable. The works to form the site accesses and the implementation of the TRO will be subject to detailed design and will be secured via a s278 Agreement.

Layout/Parking

The development should be designed and constructed in accordance with the Council's (Tees Valley) Design Guide and Specification (Residential and Industrial Estates Development) current edition and Supplementary Planning Document 3: Parking Provision for New Developments (SPD3).

With regards to car parking, the relevant standards (extracted from SBC Design Guide and SPD3: Parking Provision for Developments, 2011) are:

- That each property with 2 or 3 bedrooms provides at least 2 incurtilage car parking spaces and each 4 bedroom property provides 3 parking spaces;
- A garage will only be considered a parking space if it has the minimum internal dimensions of 6m x 3m;
- The length of a driveway, on a green field site, should be 6m. A relaxation to 5m is only permitted in constrained circumstances. As the site is a green field development, the circumstances are not considered to be constrained and all incurtilage drives should meet the minimum 6m length requirement;
- A double length drive should be a minimum of 11m;
- A treble length drive should be a minimum of 16m;
- The width of a drive should be in multiples of 2.4m (per parking space to be provided).

The applicant has submitted, in support of the proposals, house type drawings and the following site layout plans:

- Y81:1181.05 Rev X - Taylor Wimpey - Proposed Site Layout;
- STK-YBL-001 Rev V – Persimmon Homes – Site Layout.

The layouts and car parking, for the proposed development, have been reviewed against the Councils standards and are broadly acceptable however, the following minor issues need to be addressed as a part of any approval issued:

- Persimmon Homes – both the Marston and Delamare house types have integral garages which do not meet the requirements of SPD3. It will therefore be necessary for the developer to provide external cycle storage within the rear gardens of these properties and this should be secured via a s106 Agreement.

It should also be noted that a vehicle access to the triangular piece of land, adjacent to the Taylor Wimpey element of the site, has been indicated on the submitted plans however this road does not extend up to the redline boundary of the land. The connection to this third-party land will be required to be provided within this planning application and its construction form part of the s38 Agreement.

A right of access to this parcel of land is to be secured via a s106 Agreement.

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Feature Squares

The principle of the feature squares is acceptable and the detail necessary to demonstrate their appearance and quality as key spaces within the layout of the site will be secured as part of the s38 agreement. A commuted lump sum will be required for the ongoing maintenance of the hard and soft landscaping, underground planting pits, street furniture, lighting and other details within the feature squares and this sum will be agreed and secured through Section 38 of the Highways Act 1980.

Sustainable Links

Following submission of the proposed application National guidance has been issued on the design of Cycleways, which is set out in LTN 1/20 – Cycle Infrastructure Design, however, in this instance the guidance has not been applied to this application for the following reasons:

- the guidance came out several months after the application had been validated,
- the proposed layout had already gone through several iterations in order to achieve a design that is acceptable to the Council and
- all the proposed cycleways associated with the development comply with the current requirements on the Councils design guide.

Therefore, the proposals have been considered against the current adopted Council design guide.

The layout includes a shared pedestrian / cycle lane along the western YBL boundary which will provide a connection between the existing cycleways on Darlington Back Lane and Darlington Road. This will allow a future link to be provided to Durham Lane Industrial Estate should funding become available. This route would be adopted by the LHA and will include streetlighting. The route, which would pass through land in private ownership / management, would also have to be constructed to withstand occasional maintenance vehicles movements and must have collapsible columns and cable ducting under the foot/cycleway. The foot/cycleway will be subject to Section 38 of the Highways Act 1980, for the works requiring additions to the highway which will be adopted by SBC.

From this route, links into the site from the western edge are provided, it is satisfactory for these linkages to be footways as cyclists can access the site at the road junctions and travel on the roads throughout the site.

There are pedestrian connections across the eastern boundary to destinations to the east of the development site and these are also considered to be acceptable however, they extend beyond the redline boundary for the site and will therefore need to be secured via a s106 Agreement. The locations are as follows:

- Persimmon Homes – from the northern play area / POS to Surbiton Road (adjacent to 227 Surbiton Road);
- Taylor Wimpey – from adjacent to plot 420 providing a connection to Symons Close;
- Taylor Wimpey – from the central POS to Ravensworth Grove;
- Taylor Wimpey – from the southern POS to the Penny Black Public House (PH). This connection is to be safeguarded and would not be implemented until agreement is reached with the owners of the Penny Black PH to make the necessary connection;
- Taylor Wimpey – to the triangular shaped third-party land. This connection is to be safeguarded and would not be implemented until agreement is reached with the owners of

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the land to make the necessary connection. This work would likely form part of the future carriageway connection.

Public Transport Provision

The transport strategy proposes that residents of the development access public transport services using the existing bus stops on Surbiton Road and the services on Darlington Road, with the provision of two new bus stops on Darlington Road as a part of the Elton Interchange works.

Using this approach, the accessibility analysis suggests that the vast majority of the site will be within 400m of the nearest bus stop and that the entire site is within 800m of a bus stop, and from where services can be accessed (4 per hour on Surbiton Road and 2 per hour on Darlington Road) which is considered to be acceptable.

Whilst no improvements have been identified, as a part of this application, to the existing bus stops within the vicinity of the site as set out in the West Stockton Urban Extension (WeSue) Masterplan a proportionate contribution towards Public Transport Improvements is required.

The proportionate share from this development towards Public Transport would be based on the allocations across the WeSUE.

Construction Management Plan

A Construction Management Plan should be agreed, should the application be approved, prior to construction commencing on the site and this should be secured by condition. This will need to take into account the Construction Management Plan for the highway works and both documents should work together to minimise the impact of the development, and associated highway works, on the transport network.

Landscape & Visual Comments

The application site at Yarm Back Lane forms part of the West Stockton SUE and is therefore identified for residential development within the Adopted Local Plan. The site comprises a number of arable fields on the western fringes of Stockton, between Darlington Back Lane in the north and the A66 in the south, the western boundary is defined by Yarm Back Lane. The development site boundary is marked by established mature hedgerows, and there are two unnamed watercourses which cross the site from west to east.

Landscape and Visual Impact

A landscape and visual impact assessment has been submitted as part of the application. It concludes that the impacts on landscape character at completion will be 'Minor - moderate – adverse' improving to 'Minor beneficial' at Year 15 on establishment of soft landscaping. The visual impacts are greater due to the number of residential properties which lie immediately adjacent to the site and the nature of the development which changes the outlook of local receptors from an agricultural landscape to a residential area. The assessment concludes that properties would be subject to a 'Major - adverse' level of visual impact during the construction phase and immediately after completion, reducing to 'Moderate - adverse' as the new planting on site matures and screens and softens views of the new dwellings.

Public Open Space

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Whilst plans requested have not been submitted detailing the quantum of Public Open Space (POS) and the typologies they fit within, the Council have assessed this and consider the provision of open space to be generally acceptable when considered against policy requirements. Whilst some large open spaces are required to allow for informal kickabout etc, all of the areas of POS and greenspace appear to be flat grassed areas with scattered trees, with no defining features to differentiate between the different areas of the site.

Greater variety to the spaces is essential to create character and a sense of place. This could easily be achieved, through variation in planting proposals, or more interesting topography. Site won material could be used to create some interesting landform within the POS. Landscape drawing 2634/10 includes a small group of boulders as a feature within the POS close to Yarm Back Lane. This is welcomed but is only a single small feature on a very large development and needs to be replicated more extensively throughout the POS. However as noted below it is considered that these outstanding details can be agreed via a controlling condition.

Layout

Having reviewed the latest proposals it is noted that minor information is required to fully satisfy outstanding urban design or landscape and visual concerns. It is considered that these issues can be resolved by the imposition of controlling conditions, some of which must be prior to commencement of any works on site:

- Retention of Existing Trees Shrubs and Hedges – To ensure retention of boundary hedgerows and trees to the perimeter of the site, which may be at risk during the construction period;
- Tree and Hedgerow Protection – To secure details of the tree and hedgerow protection scheme which must be implemented on site to protect the perimeter boundary hedge;
- Landscaping Hardworks – To secure details of hard landscaping materials across the development to ensure some consistency in quality and the hierarchy of roads between the two development parcels through their visual appearance;
- Enclosure – To secure high-quality plot boundary treatments across the whole site, for both site frontage and rear garden boundaries which reflect the provide a hierarchy of streets. Currently proposals within the TW area of the site utilising only a 1.8m close board timber fence are currently unacceptable;
- Mounding and levels within Public Open Space (POS) – It is expected that a significant volume of material will be generated on site during construction. The condition is required to control redistribution of site won materials across the site, and particularly within areas of POS to agree upfront the locations, profile and appearance of any mounds or raised areas;
- Soil Management – Due to the significant volumes of materials to be generated on site the condition is required to control the movement and storage of soils on site during the construction process, and minimise impacts on neighbouring properties;
- On Site Public Open Space – Only very limited information has been submitted regarding areas of POS. From the submitted information it is not possible to understand the character or quality of the spaces, site levels, provision of street furniture or lighting, or details of the two proposed play areas. Therefore, a condition is required to secure these details;

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- Landscaping Softworks – There have been some queries regarding the submitted soft landscape information. Issues to be resolved include:
 - tree selection across the site;
 - restricted planting space of only 1m width adjacent to plot boundaries;
 - soft landscaping provision at the south western boundary of the site to provide screening of the new road layout and improve visual separation between the proposed housing development and the Elton Interchange and realigned Darlington Road; and
 - details of planting and seeding within the SuDS basins once the final design and therefore anticipated wet periods can be established.

Due to the limited time frame it is considered that a condition can be applied to secure details of soft landscaping across the site, broadly in accordance with the submitted landscape masterplan:

- Maintenance of Softworks – To secure details regarding future maintenance of soft landscaping across the site;
- Trees Within and Adjacent to the Adopted Highway – Condition to secure details where tree planting is undertaken in close proximity to the adopted highway, to prevent future damage from tree roots;
- Scheme for Illumination – To secure details of street lighting across the development;
- Pumping Station – Due to the prominent locations of the two pumping stations further consideration is required regarding the appearance of these features to minimise their impact upon the streetscape and views from properties which overlook these features, therefore a condition is required.

It is noted that landscape works surrounding the improvements to the Elton Interchange will be subject to detailed design and will be secured via a s278 Agreement.

For the outline application for the school site, landscape related conditions are not generally required as all issues would be covered under the Reserved Matters. However, it is requested that a controlling condition should be added to any permission to protect the boundary hedge around the perimeter of the site due to its prominent location at the confluence of a number of local roads.

SuDS

It should also be noted that further detailed information regarding the appearance of the SuDS areas will be required. Due to the prominent location of these features within the residential area and their contribution to the amenity of the development, high quality inlets and outfalls will be necessary, and standard concretes headwalls will not be acceptable. Maintenance access tracks must be integrated into the landscape with suitable materials. Suitable planting and enhancement of these areas is also required to be undertaken. However, all these issues will be covered under Flood Risk Conditions.

Flood Risk Management

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The applicant has provided sufficient information to satisfy the Lead Local Flood Authority that an appropriate surface water solution can be achieved to manage increased flows of runoff generated by the proposed development, and that flows can be contained within the boundaries of the development site without increasing existing flood risk to the site or the surrounding area, however the applicant has not provided all the detailed information required, therefore the LLFA request that this information is secured by condition.

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Appendix 2 - Conditions

<p>FRM - Discharge of Surface Water</p>	<p>The development hereby approved shall not be commenced on site, until a scheme for the implementation, maintenance and management of a Sustainable Surface Water Drainage Scheme has first been submitted to and approved in writing by the Local Planning Authority. The scheme shall be implemented and thereafter managed and maintained in accordance with the approved details, the scheme shall include but not be restricted to providing the following details;</p> <ol style="list-style-type: none"> I. Detailed design of the surface water management system; II. A build programme and timetable for the provision of the critical surface water drainage infrastructure; III. A management plan detailing how surface water runoff from the site will be managed during the construction phase; IV. Details of adoption responsibilities. <p>Reason: To ensure the site is developed in a manner that will not increase the risk of surface water flooding to site or surrounding area, in accordance with the guidance within Core Strategy Development Plan Policy CS10 and the National Planning Policy Framework.</p>
<p>FRM - Discharge of Surface Water</p>	<p>The development permitted by this planning permission shall only be carried out in accordance with the approved Flood Risk Assessment (FRA) Reference 15173/FRA/RS/1 Version 7 dated April 2016 and the following mitigation measures detailed within the FRA</p> <ul style="list-style-type: none"> • Northern Catchment (Persimmon Homes) discharge rate must not exceed 55.1l/sec • Southern Catchment (Taylor Wimpy) discharge rate must not exceed 84.19l/sec • Discharge rates for Elton Interchange improvement works and Yarm Back Lane improvement works must not exceed the rates highlighted within Arups report <p>The mitigation measures shall be fully implemented prior to the occupation and subsequently in accordance with the timing / phasing arrangements embodied within the scheme, or within any period as may subsequently be agreed, in writing, by the local planning authority.</p> <p>Reason: To prevent flooding by ensuring the satisfactory storage of / disposal of surface water from the site and to reduce the risk of flooding to the proposed development and future occupants.</p>

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<p>FRM - Discharge of Surface Water</p>	<p>The building hereby approved shall not be brought into use until: -</p> <ul style="list-style-type: none"> • Requisite elements of the approved surface water management scheme for the development, or any phase of the development are in place and fully operational to serve said building • The drawings of all Suds features have been submitted and approved in writing by the Local Planning Authority, the drawings should highlight all site levels, including the 30year and 100year+cc flood levels and confirmation of storage capacity • A Management and maintenance plan of the approved Surface Water Drainage scheme has been submitted and approved in writing by the Local Planning Authority, this should include the funding arrangements and cover the lifetime of the development <p>Reason: To reduce flood risk and ensure satisfactory long-term maintenance are in place for the lifetime of the development.</p>
<p>FRM - Informative</p>	<p>The submitted Flood Risk Assessment Version 7 does not specify if any provision has been made to accommodate a surface water connection from the neighbouring parcel of land included within the masterplan but not included within the redline boundary of this application.</p> <p>As the triangular parcel of land has no direct access to either of the two watercourses that flow through PH & TW development sites, the LLFA require confirmation that a provision has been made to accommodate a future surface water connection from the triangular parcel of land.</p> <p>The developer will need to provide a detailed landscape Architects drawing for each SuDS feature.</p> <p>If the surface water runoff is not contained within the low flow channel of the SuDS feature for all events up to the 1 in 5 year event, the SuDS feature cannot be classed as a dry basin and therefore must be designed as a wetland feature, should include treatment forebays at each inlet, should include areas of permanent water along a defined flow channel.</p> <p>The Management and Maintenance Plan should provide detailed information regarding the maintenance and Management of the critical flow channel</p> <p>A risk assessment will need to be provided for each SuDS feature</p> <p>Bottom of batter drainage must be provided where public footpaths / cycle ways could be affected by runoff from earth mounds</p> <p>More detail is required regarding Maintenance Access to the control structures on both SuDS features</p> <p>Inlet and outlet structures should be designed to form part of the natural environment.</p> <p>Interaction between Persimmon Homes drainage and the highway drainage should be clearly highlighted</p>

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	<p>Drainage allowance for the Education development should be clearly highlighted</p> <p>Maintenance and Management should form a standalone document and contain the following information;</p> <p>Section 1 -Introduction</p> <ul style="list-style-type: none"> • Description of the site; • Total site area, total impermeable and permeable area; • Storage volume/s provided in each SuDS component/s; • Agreed discharge rate; • Agreed discharge location; • State hydro brake manhole number/s and location/s including location/s of any critical surface water infrastructure. • Detailed description of how the finale surface water system is to be managed through the site; <p>Section 2 – SuDS Maintenance Requirements</p> <p>All drainage systems, suds components should be inspected and maintained. This ensures efficient operation and prevents failure.</p> <ul style="list-style-type: none"> • A management statement to outline the management goals for the site and required maintenance; • A breakdown of typical maintenance requirements. This should include an overview of the design concepts and a maintenance schedule for the scheme to ensure that it continues to function as intended; • The maintenance activities and their frequency should be highlighted for each component/s of the proposed surface water drainage system. For example, private inlets/outlets, SuDS basin, Swales, Hydro-brake/s, catch pits and underground storage. • A copy of the manufactures maintenance specifications and installation requirements should be included as an appendix, if applicable. <p>Section 3 – Details of who is responsible for the maintenance and management of the final SuDS.</p> <ul style="list-style-type: none"> • Name • Company Address • Email Address • Telephone Number • Emergency 24hr call out/out of hours telephone number <p>Section 4 – Landownership Details</p> <ul style="list-style-type: none"> • Details of who will remain the landowner of the public open space/location of the proposed SuDS feature/s; • Landowners Name, Landowners Address, Landowners Telephone Number, Landowners Email Address; <p>Section 5 – Funding Arrangements – details of how the surface water drainage system would be funded.</p> <ul style="list-style-type: none"> • Details of how the responsible owner will be funded to undertake the management and maintenance works of the surface water drainage system. • How the maintenance of the SuDS has been calculated and the expected charge on individual properties, if applicable. • Life expectancy and replacement costs, if applicable. • How any replacement costs will be funded, if applicable. <p>Section 6 – inspection and reporting</p> <ul style="list-style-type: none"> • A full site inspection of all SuDS shall be undertaken in accordance with the specified frequency.
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	<ul style="list-style-type: none"> • Details of the site inspections should be recorded on the inspection log (example provided in appendix A). • The site inspection log sheet should be tailored to suit the development site. • An annual inspection log should be issued to Stockton Borough Council's Lead Local Flood Authority email: lfa@stockton.gov.uk to confirm all maintenance activities have been undertaken to ensure efficient operation. <p>SECTION 7 – APPENICES THAT MUST BE INCLUDED</p> <ul style="list-style-type: none"> • Appendix A – Overall Drainage Layout • Appendix B – Section 104 drawing • Appendix C – A drawing highlighting what the management company are responsible for managing and maintaining • Appendix D – Detailed landownership plan highlighting all responsible landowner/s. • Appendix E - A site plan highlighting maintenance access points, easements and outfalls. • Appendix F – Any manufactures installation and maintenance specifications for any proposed Storage Structures, if necessary. • Appendix G – Exceedance Route drawing • Appendix H – Maintenance visit log
<p>Construction Management Plan</p>	<p>Within each phase, no development shall take place, until a Construction Management Plan has been submitted to, and approved in writing by, the local planning authority. The Construction Management Plan shall provide details of:</p> <ul style="list-style-type: none"> (i) the site construction access(es) (ii) the parking of vehicles of site operatives and visitors; (iii) loading and unloading of plant and materials including any restrictions on delivery times; (iv) storage of plant and materials used in constructing the development; (v) the erection and maintenance of security hoarding including decorative displays and facilities for public viewing, (vi) measures to be taken, including but not limited to wheel washing facilities and the use of mechanical road sweepers operating at regular intervals or as and when necessary, to avoid the deposit of mud, grit and dirt on the public highway by vehicles travelling to and from the site; (vii) measures to control and monitor the emission of dust and dirt during construction; (viii) a Site Waste Management Plan; (ix) details of the HGVs routing including any measures necessary to minimise the impact on other road users; (x) measures to protect existing footpaths and verges; and (xi) a means of communication with local residents. <p>The approved Construction Management Plan shall be adhered to throughout the construction period.</p> <p>Reason In the interests of highway safety and residential amenity.</p>

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<p>Retention of Existing Trees Shrubs and Hedges</p>	<p>Notwithstanding the proposals detailed in the Design and Access Statement/ submitted plans (whichever is applicable) a plan shall be submitted identifying the trees and hedgerows to be retained on the site. All trees and hedgerows indicated for retention shall be retained and maintained for a minimum period of 25 years from practical completion of the development. No tree, shrub or hedge shall be cut down, uprooted or destroyed, topped or lopped other than in accordance with the approved plans. Any tree, shrub or hedge or any tree, shrub or hedge planted as a replacement that dies or is removed, uprooted or destroyed or becomes seriously damaged or defective must be replaced by another of the same size and species unless directed in writing by the Local Planning Authority.</p> <p>Reason: To protect the existing trees/shrubs and hedges on site that the Local Planning Authority consider to be an important visual amenity in the locality and should be appropriately maintained.</p>
<p>Tree and Hedgerow Protection</p>	<p>Notwithstanding the proposals detailed in the Design and Access Statement/ submitted plans no development shall commence until a Tree and Hedgerow Protection Plan is approved in writing by the Local Planning Authority and implemented on site. This must be in close accordance with:</p> <ul style="list-style-type: none"> (i) British Standard 5837:2012 Trees in relation to design, demolition and construction – Recommendations (ii) NJUG Guidelines For The Planning, Installation And Maintenance Of Utility Apparatus In Proximity To Trees (Issue 2) – Operatives Handbook 19th November 2007 <p>Any such scheme agreed in writing by the Local Planning Authority shall be implemented prior to any equipment, machinery or materials being brought to site for use in the development and be maintained until all the equipment, machinery or surplus materials connected with the development have been removed from the site.</p> <p>Reason: To protect the all existing trees and hedgerows on and immediately adjacent to the site (within 10m) that the Local Planning Authority consider provide important amenity value in the locality.</p>
<p>Landscaping Hardworks</p>	<p>No development shall commence until full details of proposed hard landscaping including the highway materials has been submitted to and approved in writing by the Local Planning Authority. This will include all external finishing materials, finished levels, and all construction details confirming materials, colours, finishes and fixings. The scheme shall be completed to the satisfaction of the Local Planning Authority and in accordance with the approved details within a period of 12 months from the date on which the development commenced or prior to the occupation of any part of the development. Any defects in materials or workmanship appearing within a period of 12 months from completion of the total development shall be made-good by the owner as soon as practicably possible.</p> <p>Reason: To enable the Local Planning Authority to control details of the proposed development, to ensure a high quality hard landscaping scheme is provided in the interests of visual amenity which contributes positively to local character of the area.</p>
<p>Enclosure</p>	<p>Notwithstanding the proposals detailed in the Design and Access Statement/ submitted plans, (whichever is applicable) prior to the commencement of development, details of the enclosure shall be submitted to and approved in writing by the Local Planning Authority. This shall include all acoustic barriers, walls, fences,</p>

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	<p>entrance feature walls, hedgerows and kneerails, including those surrounding pumping stations and other infrastructure sites. Such means of enclosure shall be implemented in accordance with the approved plan prior to the occupation of the:</p> <ul style="list-style-type: none"> (i) Development; (ii) or approved phases. <p>Reason: In the interests of the visual amenities of the locality.</p>
<p>Mounding and Levels within POS</p>	<p>Notwithstanding the proposals detailed in the Design and Access Statement/submitted plans, (whichever is applicable) prior to the commencement of development the principals for retention of site won soils and any mounding on site shall be agreed in writing. This shall comprise existing and proposed ground levels for all the POS, and for mounding all indicative locations shall be indicated. Mounding details shall also include typical cross sections, at a minimum scale of 1:200 illustrating topsoil capping and core materials, side slope gradients that shall not exceed 1:5 and indicative heights. Placed soil materials shall be of a suitable depth and compaction ensure successful grass, shrub and tree establishment.</p> <p>Reason: To provide high quality open spaces and level areas where such spaces are identified for field sports or play areas, and in the interests of the visual amenity of the locality.</p>
<p>Soil Management</p>	<p>No development shall be commenced until the Local Planning Authority has approved in writing the details of a soil management plan. The plan shall indicate how and where soils will be stripped, and their temporary storage during the works. Details shall describe the height, width, length and location on site of all such mounding together with any temporary seeding.</p> <p>Reason: To ensure satisfactory residential amenity.</p>
<p>On Site Public Open Space</p>	<p>No development shall commence until a scheme has been submitted and the Local Planning Authority has approved in writing the details of the Public Open Space (POS) within the site including:</p> <ul style="list-style-type: none"> (i) The delineation and siting of the proposed POS; (ii) The type and nature of the facilities to be provided within the POS including provision of two play areas; (iii) Details of the preparation, cultivation, grading and drainage of large grassed areas of POS; (iv) Details of street furniture within POS; (v) The phased delivery of areas of POS; (vi) The arrangements the developer shall make for the future management of the POS including water courses which pass through the site. Where Title Transfer is not proposed the management details shall be prepared for a minimum period of 20 years from practical completion of the completion of the final phase of the POS works. <p>The open space shall be completed in accordance with the approved scheme and any phasing arrangements as agreed</p> <p>Reason: To enable the Local Planning Authority to satisfactorily control the development.</p>

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<p>Landscaping Softworks</p>	<p>No development shall commence until full details of Soft Landscaping has been submitted to and approved in writing by the Local Planning Authority. This will be a detailed planting plan and specification of works indicating soil depths, plant species, numbers, densities, locations inter relationship of plants, stock size and type, grass, and planting methods including construction techniques for pits in hard surfacing and root barriers.</p> <p>All works shall be in accordance with the approved plans. All existing or proposed utility services that may influence proposed tree planting shall be indicated on the planting plan. The scheme shall be completed in the first planting season following:</p> <ul style="list-style-type: none"> (i) Commencement of the development; (ii) or agreed phases; (iii) or prior to the occupation of any part of the development. <p>The development shall not be brought into use until the scheme has been completed to the satisfaction of the Local Planning Authority.</p> <p>Reason: To ensure a high quality planting scheme is provided in the interests of visual amenity which contributes positively to local character and enhances bio diversity.</p>
<p>Maintenance Softworks</p>	<p>No development shall commence until full details of proposed soft landscape management has been submitted to and approved in writing by the Local Planning Authority. The soft landscape management plan shall include maintenance access routes to demonstrate operations can be undertaken from publicly accessible land, long term design objectives, management responsibilities and maintenance schedules for all landscape areas/ retained vegetation, other than small privately owned domestic garden shall be submitted to and approved in writing by the Local Planning Authority and implemented in accordance with the approved plan prior to the occupation of the:</p> <ul style="list-style-type: none"> (iii) Development; (iv) or approved phases. <p>Any vegetation within a period of 5 years from the date of from the date of completion of the total works that is dying, damaged, diseased or in the opinion of the Local Planning Authority is failing to thrive shall be replaced by the same species of a size at least equal to that of the adjacent successful planting in the next planting season.</p> <p>Landscape maintenance shall be detailed for the initial 5 year establishment from date of completion of the total scheme regardless of any phased development period followed by a long-term management plan for a period of 20 years. The landscape management plan shall be carried out as approved</p> <p>Reason: To ensure satisfactory landscaping to improve the appearance of the site in the interests of visual amenity.</p>
<p>Trees within and adjacent to the adopted highway</p>	<p>No development shall be commenced until the Local Planning Authority has approved in writing the details of arrangements for the planting of Street Trees and protection of the adopted highway from tree root damage. Root barriers will be required where trees are planted within 2m of the adopted highway.</p>

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	Reason: To protect the adopted highway from damage by tree roots.
Scheme for Illuminatio	<p>Prior to the commencement of development full details of the method of external LED illumination and the position of all columns shall be agreed in writing by the Local Planning Authority to avoid conflict with the positions of trees. The lighting shall be implemented wholly in accordance with the agreed scheme prior to the occupation of the:</p> <p>(i) Development; (ii) or approved phases.</p> <p>Reason: To enable the Local Planning Authority to control details and in the interests of the amenity of adjoining residents.</p>
Feature Squares	<p>Notwithstanding any description contained within this application, prior to the first occupation of the hereby approved development full details of all hard landscape and planting works for the feature squares shall be submitted to and be approved in writing by the Local Planning Authority. These details shall include layouts; hard surfacing materials; planting details (tree/shrub types and species, stock size, numbers and densities); construction methods including tree pits; minor structures (e.g. street furniture); and, a phasing plan for implementation. The feature squares shall be implemented in full accordance with the approved details and agreed phasing plan.</p> <p>Any landscaping works which within a period of five years from the date of planting die, are removed, become seriously damaged or diseased shall be replaced in the next planting season with others of a similar size and species unless the Local Planning Authority gives written consent to any variation or an alternative long term maintenance arrangement.</p>
Pumping Station	<p>Notwithstanding any description contained within this application, prior to the first occupation of the hereby approved development full details of all hard landscape, fencing and planting works for the pumping stations shall be submitted to and be approved in writing by the Local Planning Authority. These details shall include layouts; hard surfacing materials; planting details (tree/shrub types and species, stock size, numbers and densities) and fencing. These features shall be implemented in full accordance with the approved details and agreed phasing plan.</p>

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