22 March 2018 | NP | P18-0053 rev A
Respondent ID: 15661

FINAL FOR SUBMISSION

GREATER NORWICH LOCAL PLAN DOCUMENTS:

- **GROWTH OPTIONS**
- **SITE PROPOSALS**

REGULATION 18 CONSULTATION JANUARY 2018

ON BEHALF OF THE TRUSTEES OF ARMINGHALL SETTLEMENT

Pegasus Group

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PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

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APPENDICES:

1. GROWTH OPTIONS

Question 1: Do you agree with the draft vision and objectives for the plan?

1.1 For the main part, the Trustees of Arminghall Settlement (my client) is generally in support of the draft vision and objectives. However, the objectives regarding homes and economy warrant further refinement.

1.2 The 'Homes' objective should be focussed on speeding up delivery to reflect the draft NPPF. It is suggested that this should be worded as follows "To enable and facilitate the prompt delivery …"

1.3 As part of this, Councils should be encouraged to work with landowners and developers to ensure that the speed of planning decision-making is improved and that pre-commencement conditions are kept to a minimum. This will allow the commencement of development to take place as soon as possible and limit the barriers to prompt implementation.

1.4 The 'Economy' objective should recognise the need to sustain and enhance employment opportunities in the rural area (as recognised in paragraph 4.2), especially given the acknowledged reduction in the agricultural sector. It is suggested that this should be amended by adding the following text to the end of the objective "…whilst recognising the importance of supporting the growth of the rural economy"

1.5 As part of this, Councils should be encouraged to acknowledge the different economic challenges and needs across their individual districts and plan accordingly.

Question 2: Do you support the broad strategic approach to delivering jobs, homes and infrastructure?

1.6 Paragraph 4.5 seeks to ensure that greenfield development takes place in accessible locations but this does not take into account the potential for locations to be made accessible by the development proposed. It is suggested that this is clarified by replacing 'accessible locations' with 'locations that are or can be made accessible'. We support the acknowledgement that such developments can help to sustain town and village life – this is consistent with the draft NPPF.

1.7 Paragraph 4.7 would benefit from a clear acknowledgment that supporting economic growth is not confined to allowing housing growth in the villages. It is

suggested that this is best achieved by simply providing the current text as two separate sentences (with consequential amendments).

Question 6: Do you agree that windfall development should be in addition to the 7,200 homes?

1.8 Yes.

Question 9: Which alternative or alternatives do you favour?

1.9 My client favours option 4 as this would allow for their site at Octagon Farm (GNLP0321 and 1032) to come forward. Further submissions on this have been made under the Site Proposals consultation to demonstrate the deliverability of these sites.

1.10 It is noted that the plan at Appendix 1 of the document does not appear to demonstrate that the zone of dispersal would cover the area of these sites and that the supporting text neglects to mention Framlingham Earl. Both aspects should be amended accordingly.

1.11 It is also suggested that the potential yield from sites to be allocated at Key Service Centres should be increased and that the availability of sites identified in the HELAA would suggest that this is entirely capable of achieving. It is considered that it is important to ensure that such settlements provide a suitable level of housing to ensure that the needs of the rural community can be met and that such communities can be sustained. Such a strategy would complement a strategy that allows for significant growth in and around Norwich.

Question 13: Do you support the establishment of a Green Belt?

1.12 My client strongly objects to the establishment of a Green Belt around Norwich in any form. It agrees with the comments at paragraph 4.73 that exceptional circumstances required to justify this do not exist.

Question23: Do you agree with the approach to the top three tiers of the hierarchy?

1.13 Yes

Question 24: Do you favour option SH1, and are the villages shown in appendix 3 correctly placed?

1.14 No – in the case of the lower order settlements, this would actively prevent the consideration of the proximity of supporting facilities in nearby settlements and the potential this provides to support new development. It also fails to acknowledge that alternative strategies are required in rural areas. This is contrary to the approach set out in the draft NPPF.

Qu. 25 – Do you favour the Village Group approach in option SH2? And a) What criteria should be used to define groups? b) Which specific villages could form groups? c) How could growth be allocated between villages within a group?

1.15 My client support option SH2 as this is consistent with the approach set out in the draft NPPF concerning the need to identify opportunities for villages to grow and thrive as well as the need to support the rural economy.

1.16 The criteria should consider the proximity of individual settlements to supporting facilities in the surrounding area and the ease of access to that area. It should also consider the potential to enhance access and the scope for further development to support these existing facilities. In my client's case, the proximity of Bixley to Framlingham Earl and the Norwich Urban Area make it an obvious candidate for this broader consideration. Growth can then be apportioned to such settlements having taken into account the local needs and the scope provided by supporting settlements.

1.17 My client has put forward their site at Bixley (GNLP 0323) for employment uses. Such development at this site could assist enhancing the potential for rural enterprise, which the GNLP acknowledges at paragraph 2.8 as being important to the local economy. Such development would help to support jobs growth for residents in nearby Framlingham Earl.

1.18 My client has also put forward for two mixed use sites on the edge of Framlingham Earl (GNLP 0321 and 1032). Both sites have the potential to deliver a mix of residential and employment uses that will assist in supporting jobs growth in that settlement.

Question 27 – Which option or options do you support?

1.19 My client supports EC3 but in doing so notes a strong preference for the sites put forward to be allocated and therefore these would not be identified as windfall development. The options available do not appear to allow for the potential for this.

Question 30: Are there any new employment sites that should be allocated?

1.20 As noted in response to question 27, my client has put forward three possible sites that could deliver employment uses. The first is GNLP0323. The second and third are adjacent to each other and are proposed for a mix of employment and residential uses (GNLP1032 and 0321). Further submission on this are made in the Site Proposals document.

Question 33: What measures could the GNLP introduce to boost the rural economy?

1.21 The range of employment opportunities promoted in the rural area in the current policy is limited and should be widened. The GNLP must recognise that the rural economy will operate differently to the economy within and around Norwich. Greater flexibility will be needed to reflect the rural location of individual areas and the limitations that that places on accessibility to services. The suitability of development sites should not be subject to the same criteria as sites in Norwich as this would not ensure that economic development in the rural area can be achieved. The GNLP should actively encourage mixed use developments in rural areas to ensure that the needs of those living in rural communities can be better catered for. Such uses are likely to complement rather than compete with economic developments in areas like Norwich.

1.22 Such an approach would be consistent with the support for the rural economy given in the draft NPPF and that acknowledgment in the Growth options document regarding the importance of the rural economy in this area.

Question 37: Which approach to affordable housing thresholds do you prefer?

1.23 Option AN2 is preferred but must be backed by viability evidence and must allow for the full range of affordable housing types to be considered.

Question 38: Which approach do you favour for affordable housing percentages?

1.24 Option AH5 is preferred as this would allow for the specific viability considerations of larger sites to be considered at the allocation stage. Such an approach is consistent with the requirements of the draft NPPF. For smaller sites, the level should be restricted to a maximum requirement of 27% with higher proportions permissible at the developer's discretion. This is, of course, subject to appropriate viability testing to demonstrate that such a proportion is deliverable.

Question 41: Which approach to the mix of housing do you support?

1.25 AH10 is supported as this is more appropriate to allow site-specifics and market conditions to be considered. The requirements quoted in Figure 6 relate to the whole of the HMA, which includes a wide variety of areas and needs. It would be wrong to apply a blanket requirement – even with a threshold limit. Furthermore, affordable housing requirements are usually assessed on a case-by-case basis having regard to the greatest need at that time and the specifics of the site. This provides further justification to avoid a rigid housing mix policy.

Question 42: Which approach or approaches to housing for older people and care accommodation do you favour?

1.26 It is important to recognise that the need for institutional accommodation is in addition to the housing need identified for the purposes of the OAN. Requiring the provision of such space on existing allocations rolled forward or new allocations to be identified would mean that the ability of such allocations to meet the OAN requirements will be reduced. As such, further development sites or greater yields at those sites will be required to ensure that all housing needs can be met. To avoid viability issues on allocated sites it is considered that the most appropriate response would be a combination of options AH12 (specific allocations) and AH13 (criteria-based policy for sites outside of settlements or in alternative use).

Question 44: Which policy approach do you favour to planning for the needs of Gypsies and Travellers?

1.27 It is preferred that specific allocations for gypsy and traveller accommodation pitches is provided (option GT1). Option GT2 is not supported as a blanket requirement for such provision on all larger housing allocation sites does not allow for the appropriateness of such use to be taken into account for individual sites.

Question 51: Which approach do you favour for air quality?

1.28 The preferred option is AQ2. A blanket requirement for an air pollution statement will add to the material required for a planning submission and will not be justifiable in all cases. AQ2 acknowledges that there are other powers available to ensure that air quality can be protected through development proposals.

Question 53: Which option do you support?

1.29 The application of either option needs to be ensure that it includes criteria to confirm when it is applicable. The need for either requirement must be fully justified and necessary to make the development acceptable and this is not catered for in the options presented. As such, both options will need to be amended to allow both the specifics of the development site location to be considered and the specifics of the development proposed. The final option should also allow for either commuted payments in lieu of provision or on-site provision (or a combination of the two) – the current options each only allow for one scenario. For that reason, it is not appropriate to choose between the two options.

Question 56: Should the GNLP protect additional Strategic Gaps and if so where should these be?

1.30 No – there is an absence of evidence to suggest that this is required.

Question 57: Should option EN1 be included in the GNLP?

1.31 Option EN1 will need to be supported by clear evidence to demonstrate that it is the most appropriate method of securing a low carbon future and embrace the policies set out in the draft NPPF. Caution is recommended on adopting a blanket requirement for carbon reduction through renewable energy initiatives as this can often disregard the embodied carbon within the technologies. They may assist in tackling fuel poverty issues but may not deliver the low carbon future that is envisaged by this option. Until such evidence is provided it is not possible to express an opinion about this option.

Question 59: Do you support option COM1 for the distribution of affordable housing?

1.32 No - option COM1 is poorly worded. The clustering of affordable housing should not be deemed as unacceptable. Where appropriately designed, such approaches can ensure an appropriate compromise between management of assets by the RSLs and a cohesive community. The option should be amended to acknowledge that clusters are acceptable and that the clusters should be spread evenly across a development.

Question 60: Which option do you support?

1.33 The need for Health Impacts Assessments is considered to be unsubstantiated and a duplication of the matters that would be considered through the development management process. For that reason, option COM3 (no requirement for a HIA) is supported.

Question 65: Which option do you support?

1.34 The issue of action to be taken in the event of a lack of a five-year supply is now covered in the draft NPPF. An Action Plan will be required to address any shortfall and that plan will need to be based on the reasons behind any shortfall. For that reason, it is not possible to select a preferred option at this stage and it is suggested that the options are refined to allow for the causes of any shortfall to feature in the appropriate response.

2. SITE PROPOSALS DOCUMENT

2.1 My client has previously put forward three sites for development, although two are adjacent to each other and effectively count as one site: Land at Park Farm, Bungay Road (GNLP 0323) and Land at Octagon Farm (GNLP 0321 and 1032). Further submissions regarding these sites are made below.

Site GNLP 0323 – Land at Park Farm, Bungay Road, Bixley

2.2 Site GNLP 0323 was put forward for employment uses and has been assessed as unsuitable for development in the HELAA because of its distance from other facilities and possible access issues. The site is already in use for agricultural purposes and is already served by an existing highway access. My client has sufficient landholdings in the area to ensure that an adequate highway access can be created.

2.3 The site provides an opportunity to serve an alternative employment market to that catered for by sites on the edge of Norwich, which typically command higher rents. Furthermore, it enables employment uses to be provided closer to existing settlements to the south of Norwich and will assist in reducing journey times and trip lengths to access such facilities. This benefit is not acknowledged in the HELAA.

2.4 It is noted that the site has an amber rating for landscape impact in the HELAA meaning that detrimental impacts are likely but that these could be mitigated. The site is well-screened and surrounded by land within the same ownership. There is significant potential to mitigate any potential landscape impact such that this need not be a barrier to allocation. The proposed site lies in an area of localised lower lying topography, which combines with nearby vegetation helps to limit views of the existing farm buildings from publicly accessible areas. A carefully designed layout would work with this localised topography to limit both short range and long-range views towards the development. The design would also work with the locally characteristic vegetation noted in the published Landscape Character Assessment, such as small areas of woodland and hedgerows with trees, to further limit or mitigate views.

2.5 It is noted that the site has an amber rating for townscape impact in the HELAA although it is not clear from the text what aspect of the townscape is likely to be impacted on. As with landscape impact, the HELLA indicates that such impacts could be mitigated and for the reasons identified above in terms of landscape impact, this is certainly the case at this site.

2.6 Of further significance is the fact that the site is capable of conversion to alternative uses under the GPDO. This is a valid consideration to take into account when considering the suitability of the site for allocation.

2.7 All other matters are considered to be capable of mitigation through the detailed design consideration of the development proposals.

2.8 As such, my client objects to the site being deemed unsuitable in the HELAA and requests that it is considered as a possible site allocation for employment uses in the site proposals element of the plan. The precise mix of uses will be the subject of further detailed design work and discussion with the Councils.

Site GNLP 0321 Land adjacent to Octagon Farm, Bungay Road, Framlingham Earl

Site GNLP1032 Land north of Octagon Farm, Bungay Road, Bixley

2.9 These sites are immediately adjacent to each other and are separated by an existing gallery and studio. This facility includes a craft shop and a café and has a small visitor car park. It is well-used by the local community and is opposite a site that is currently being developed for housing (LPA ref 2012/0405 and 2017/2485).

2.10 It is noted that site GNLP0321 falls within Framlingham Earl and GNLP1032 falls within Bixley. The site as a whole reads as part of Framlingham Earl and therefore should be considered as part of this Key Service Centre and the access to the supporting facilities therein.

2.11 My client has put both sites forward for consideration and both are assessed in the HELAA as suitable for development. Site 0321 is proposed for mixed use development involving 60 dwellings, commercial, business and light industrial floorspace. Site 1032 is proposed for mixed use purposes involving commercial business use and 100 dwellings. The sites have a combined area of 8.48ha and provide the potential to deliver c.160 new homes with employment uses. The exact development yield and nature of the commercial uses will be subject to detailed design work and further discussions with the relevant Councils.

2.12 Given the proximity of the sites, these further submissions consider the two sites together. To assist the Council in its further assessment of these sites for allocation in the GNLP, the following is provided:

- A **Transport Technical Note** prepared by Royal HaskoningDHV (Appendix 1). This provides a summary of the existing accessibility of the sites for all modes of transport and its connectivity to supporting services. It explains the measures necessary to create a safe and appropriate means of access to

the sites. It concludes that it there are no highways access or infrastructure provision issues that should prevent either site for coming forward for allocation of the proposed uses.

The note includes indicative access arrangements for each site, which take into account the location of the access for the consented scheme opposite and indicate sufficient visibility splays. This would be the subject of further discussions with the highway authority following refinement of the proposed development.

The note also includes potential infrastructure improvements within the local highway. These involve potential bus stop enhancements and pedestrian/cycle links. The potential will also exist for providing pedestrian and cycle links through the development sites – either in addition to those along the highway or instead of. This would be a matter for further consideration as the design progresses. For now, it is clear that the potential exists to deliver such improvements.

- A **Drainage Note** prepared by Royal HaskoningDHV (Appendix 2). This provides a summary of the existing drainage infrastructure and the opportunities arising at this site. It explains the measures necessary to deliver a suitable drainage strategy and concludes that there are not any drainage issues that should prevent either site for coming forward for allocation of the proposed uses.

- A **Landscape Technical Note** prepared by Pegasus Group (Appendix 3). This identifies that the site is visually contained on three sides by development currently under construction and woodland, such that its visual envelope is largely limited to the immediate vicinity. It concludes that the site is well contained and that it is possible for a development scheme to be prepared that will not materially impact on the landscape character of the immediate area. It also demonstrates that the amber rating in the HELAA of the site GNLP1032 is not justified by the evidence on site. As a consequence, there are no landscape issues that cannot be mitigated and as such landscape impact is not a barrier to the allocation of either site.

2.13 The Site Proposals document acknowledges that the proposed uses mirror the approved scheme on the opposite side of the road. It goes on to note that the presence of the woodland adjacent to the site means that the development is not contiguous with existing development on that same side of the road. We consider that this does not render the site inappropriate for allocation in light of the extension of built form on the opposite side of the road. The redevelopment of the proposals sites provides the opportunity to provide a new landscape buffer that will form the new edge to the settlement and prevent further linear development.

2.14 This additional information provides further evidence to support the allocation of these sites for housing and employment uses. The site is under the control of a landowner that has significant experience in development (as is evidenced by their involvement in the site on the opposite side of the road) and is able to bring the site forward for development in the early years of the plan.

APPENDIX 1: TRANSPORT TECHNICAL NOTE

REPORT

Transport Technical Note

Octagon Farm, Framingham Earl

Client: Trustees of The Arminghall Settlement

Reference: T&PPB7641R001F1.0

Revision: 1.0/Final

Date: 14 March 2018

Royal HaskoningDHV

Enhancing Society Together

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Royal HaskoningDHV

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1 Introduction

1.1.1 Royal HaskoningDHV has been commissioned by the Trustees of Arminghall Settlement to provide transport planning advice in relation to the proposed allocation of potential development sites located at Octagon Farm, Bungay Road in Framingham Earl.

1.1.2 These sites have been identified to be potentially suitable for development in the Greater Norwich Local Plan under the Housing and Economic Land Availability Assessment (HELAA) published in December 2017. The Constraints Analysis of the assessment identified that there are potential constraints relating to access in the proposed sites which could be overcome through development.

1.1.3 On this basis, This Technical Note appraises the proposed development sites' accessibility. Subsequently the feasibility of achieving safe and appropriate means of highways access into the proposed sites is tested. In doing so, this note draws on:

- A site visit to appreciate the site's context and take measurements of key highway geometry;
- Provision of a 2D preliminary design for the access junctions that would be required to serve the proposed development in accordance with the applicable standards; and
- A review of the existing levels of transport infrastructure within proximity of the proposed developments and subsequently identify critical additional infrastructure that would be required to sustain the site.

2 Site Context

2.1 Proposed Allocation

2.1.1 The proposed development sites consist of two existing fields located to the east of Bungay Road, with site references GNLP1032 and GNLP0321 as shown in Figure 1.

2.1.2 GNLP1032, the northern site, is located in the south of the parish of Bixley while GNLP0321 is across the parishes of Bixley and Framingham Earl. The sites are currently formed of agricultural land and are bounded by other agricultural land to the east, north and south and Bungay Road/Norwich Road to the west.

2.1.3 The site to the north of Octagon Farm (GNLP1032) covers an area of 4.28 hectares and adjoins Bungay Road. An allocation is sought for a mixed-use development to consist of approximately 60 dwellings as well as commercial, business and light industrial spaces.

2.1.4 The site to the south of Octagon Farm (GNLP0321) covers an area of approximately 4.20 hectares and adjoins Norwich Road. An allocation is for a mixed-use development for commercial business use as well as approximately 100 dwellings with landscaping and associated infrastructure.

2.2 Existing Transport Infrastructure

Highways Infrastructure

2.2.1 Vehicular access to the sites is provided by tracks which are perpendicular to Bungay Road and Norwich Road as shown in Figure 1. Bungay Road and Norwich Road feed into the A146, the A47 and the A143 which provide vehicular access to the wider highway network in Norwich.

2.2.2 In the vicinity of the site, Bungay Road is a single carriageway, rural road subject to the national speed limit of 60mph which changes to 30mph as it becomes Norwich Road close to Octagon Farm. The road has lining and a continuous footway / cycleway present on its western edge. Street lighting is present on Norwich Road as it bears south towards the existing settlement.

2.2.3 Norwich Road, south of Octagon Farm has lining, continuous footways present on the western edge and street lightening coincident with the existing developments. Discontinuous footways are also present on the eastern edge of the road which, in part, also provides a shared footway / cycleway facility.

Public Transport Infrastructure

2.2.4 The closest bus stops to the proposed development are The Rambler bus stops which facilitate southbound and northbound services as shown in Figure 1.

2.2.5 The bus stops are demarcated by poles and flags, with no timetable information available at these locations. The approximate daytime frequencies and routes for the bus services are set out in Table 2.1.

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Table 2.1: Summary of Bus Frequencies

Service number	Route	Approximate frequency								
		Monday – Friday			Saturday			Sunday		
		First	Freq.	Last	First	Freq.	Last	First	Freq.	Last
40	Poringland - Norwich City Centre	08:25	Every 30 minutes	17:46	08:06	Every 30 minutes	17:41	No Service		
40	Norwich City Centre - Poringland	07:53	Every 30 minutes	17:20	08:10	Every 30 minutes	17:15			
41	Bungay - Poringland - Norwich City Centre	07:58	-	-	No Service					
41	Norwich City Centre - Poringland - Bungay	16:45	And then	18:15	16:45	and then	18:15	No Service		
84	Norwich City Centre - Harleston	11-48	-	-	No Service					
87	Poringland - Norwich City Centre	17:02	Every 30 minutes	18:07	17:02	And then	17:37	No Service		
87	Norwich City Centre - Poringland	08:25	-	-	No Service					
88	Norwich - Bungay - Halesworth - Southwold	08:42	Every 60 minutes	18:27	08:42	Every 60 minutes	18:27	No Service		
88	Southwold - Halesworth - Bungay - Norwich	07:21	Every 60 minutes	18:43	07:45	Every 60 minutes	18:43	No Service		
X41	Bungay - Poringland - Norwich City Centre	07:36	Every 60 minutes	18:56	07:36	Every 60 minutes	18:56	No Service		
X41	Norwich City Centre - Poringland - Bungay	08:55	Every 60 minutes	18:00	08:55	Every 60 minutes	17:55	No Service		
X88	Norwich - Bungay - Halesworth - Southwold	07:57	Every 60 minutes	17:30	09:11	Every 60 minutes	17:30	No Service		
X88	Southwold - Halesworth - Bungay - Norwich	08:25	Every 60 minutes	14:37	09:37	Every 60 minutes	14:37	No Service		

2.2.6 Table 2.1 shows that the site has a good level of service by public transport.

Pedestrian and Cycling Infrastructure

2.2.7 The western edge of Bungay Road has a continuous footway / cycleway of approximately 2.8m width. There is a wider grassed verge of approximately 4.4m width to the eastern edge of Bungay Road to the north of Octagon Farm.

2.2.8 On the eastern edge of Norwich Road, there is a continuous footway / cycleway of approximately 2m width, separated from the carriageway by a 1.4m wide verge. Discontinuous footways are also present on the eastern edge of Norwich Road with trodden paths present immediately south of Octagon Farm.

2.3 Consented Development

2.3.1 To the west of the proposed allocation sites, is a consented development (Ref No. 2012/0405) for a mixed-use development of community, residential and commercial uses as well as external works. This development was approved on 10 October 2013.

2.3.2 The consented development involves the development of 56 (up to 60) dwellings and 488sqm of B1(c) commercial units. Initially, the consented development was to have two primary points of vehicular access on to Bungay Road.

2.3.3 A variation to the consented development (Ref No. 2017/2485) was approved on the 17th of January 2018 which adopts a single point of vehicular access in which the approximate location of the access is shown in Figure 2.

3 Development Transport

3.1.1 This section details measures which could be provided at the proposed allocated sites, to provide a safe and appropriate means of access by all applicable modes of transport.

3.2 Access Arrangements

3.2.1 To ensure that a safe, sustainable and appropriate means of vehicular access can be achieved, the existing road properties including geometry and speed limits, as well as the consented development to the west of Octagon Farm, have been considered.

3.2.2 A minimum offset of 50m from all existing and consented accesses and junctions have been incorporated into the potential access locations as shown in Figure 2.

3.2.3 As Bungay Road is subject to the national speed limit of 60mph, the Design Manual for Roads and Bridges (DMRB) is applicable. In accordance with TD 42/95 of the DMRB, a sketch of the potential access point design for GNLP1032 is shown at Figure 3.

3.2.4 The access for GNLP0321 is to be located on Norwich Road which is subject to a speed limit of 30mph, however, due to the proximity to the national speed limit on Bungay Road, an assumed design speed of 40mph is adopted for the visibility splays to account for the variance in speeds. Subsequently, in accordance with TD 42/95 of the DMRB, a sketch of the potential access point for GNLP0321 is also shown at Figure 3.

3.2.5 The potential accesses for the proposed allocation are feasible as they demonstrate good visibility and are in compliance with the applicable standards.

3.3 Potential Off-Site Works

3.3.1 As the allocation is to consist of residential and commercial land use, access to the sites by active and sustainable modes of transport will ensure sustainable development.

3.3.2 On site measurements note that, the verge is approximately 4.4m wide on Bungay Road which could therefore accommodate a footway / cycleway 3m in width. This would enable the sites' integration with the existing transport infrastructure.

3.3.3 In addition to this, there would appear to be potential to provide a further length of footway / cycleway, also 3m wide, on Norwich Road to the south of Octagon Farm to further enhance the existing pedestrian infrastructure.

3.3.4 The Institution of Highways and Transportation's (IHT) Guidelines for Planning for Public Transport in Developments advocates that bus stops should ideally be located no more than 400 metres from homes. As the Rambler bus stops are located within 200 metres from the centre of the sites, the bus stop accessibility is considered to be appropriate.

3.3.5 However, taking into consideration that The Rambler bus stops are only demarcated by posts and flags, it is proposed that further enhancements to the bus stop infrastructure would promote sustainable travel in the region. These enhancements could include the provision of:

- bus shelters with seating,

- bus boarder kerbs to provide easier access to vehicles,
- wider footways at the bus stops where possible to accommodate pedestrian movements,
- real time information at the bus stops.

3.3.6 The potential off-site works stipulated above are shown in Figure 4.

4 Conclusions

4.1.1 This Transport Technical Note has been prepared for the Trustees of Arminghall Settlement to provide transport planning advice in relation to the proposed allocation of potential development sites located at Octagon Farm, Bungay Road in Framingham Earl.

4.1.2 A review of the existing transport infrastructure reveals that the proposed allocation sites are well served by existing pedestrian and cycling infrastructure which provides links to the existing settlement to the south.

4.1.3 Potential vehicular access points have been identified for the sites, which take account of the existing and consented points of access to both sides of Bungay/ Norwich Road. Given the level of visibility achievable at the potential access points, it is evident that the proposed sites can be accessed safely without hindering the integrity of the existing highway network.

4.1.4 In addition, it has been demonstrated that it is feasible to provide a package of off-site works which would accommodate the proposed level of development and also enhance the provision for sustainable travel within the local community.

4.1.5 On this basis, it is considered that there is no reason relating highways access and infrastructure provision which should hinder the progression of the proposed allocation.

FIGURES

Octagon Farm, Framingham Earl

Transport Technical Note

Client:	Trustees of The Arminghall Settlement
Reference:	T&PPB7641R001F1.0
Revision:	1.0 / Final
Date:	14 March 2018

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FIGURES

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FIGURE 1

Site Location Plan

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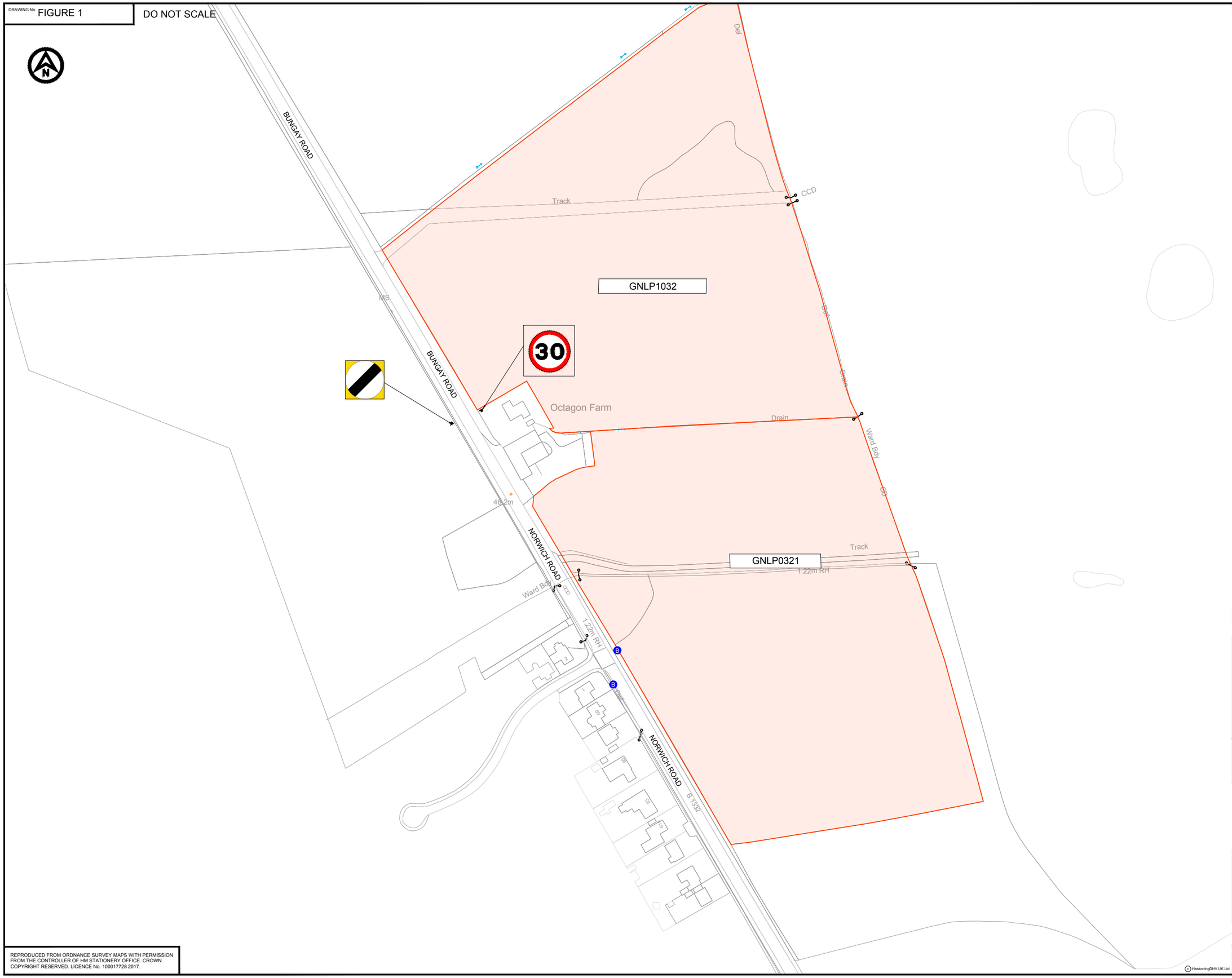
DRAWING No. FIGURE 1

DO NOT SCALE



NOTES

1. Do not scale from this drawing. All dimensions are in metres unless noted otherwise.

KEY

APPLICATION SITES

EXISTING BUS STOP

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

TRUSTEES OF ARMINGHALL SETTLEMENT

PROJECT

OCTAGON FARM, FRAMINGHAM EARL

TITLE

SITE LOCATION

Enterprise House,
Delta Way, Egham,
Surrey, TW20 8RX
Tel +44(0)1932 569566
www.royalhaskoningdhv.com

Royal HaskoningDHV
Enhancing Society Together

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JI	SS	SS

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DRAWING No. FIGURE 1

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FIGURE 2

Potential Access Arrangement

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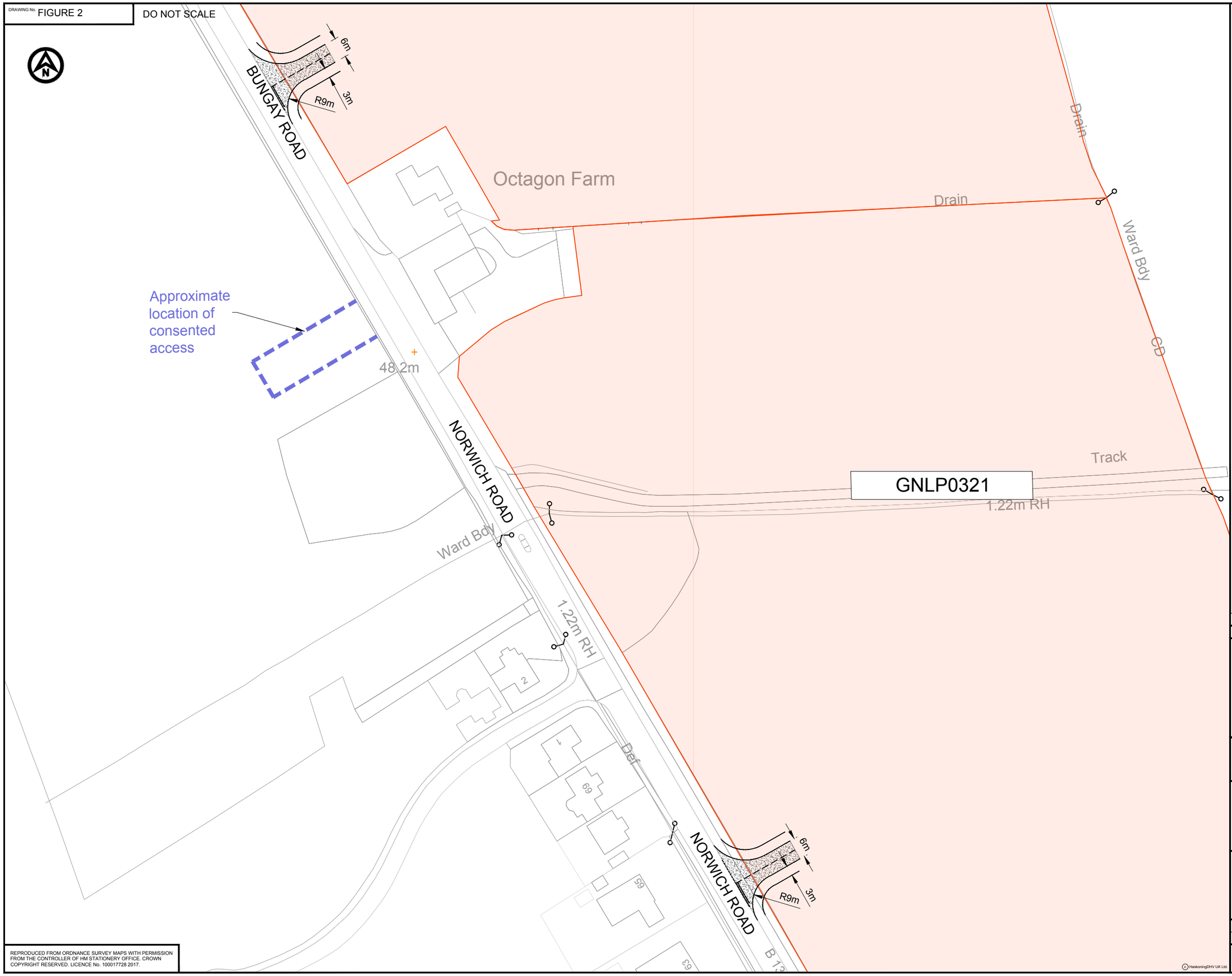
DO NOT SCALE



NOTES

1. Do not scale from this drawing. All dimensions are in metres unless noted otherwise.

KEY

SITE OUTLINE

PROPOSED ACCESS WITH 3m FOOTWAY

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

TRUSTEES OF ARMINGHALL SETTLEMENT

PROJECT

OCTAGON FARM, FRAMINGHAM EARL

TITLE

POTENTIAL ACCESS ARRANGEMENT

Enterprise House
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FIGURE 3

Visibility Splays

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DRAWING No. FIGURE 3

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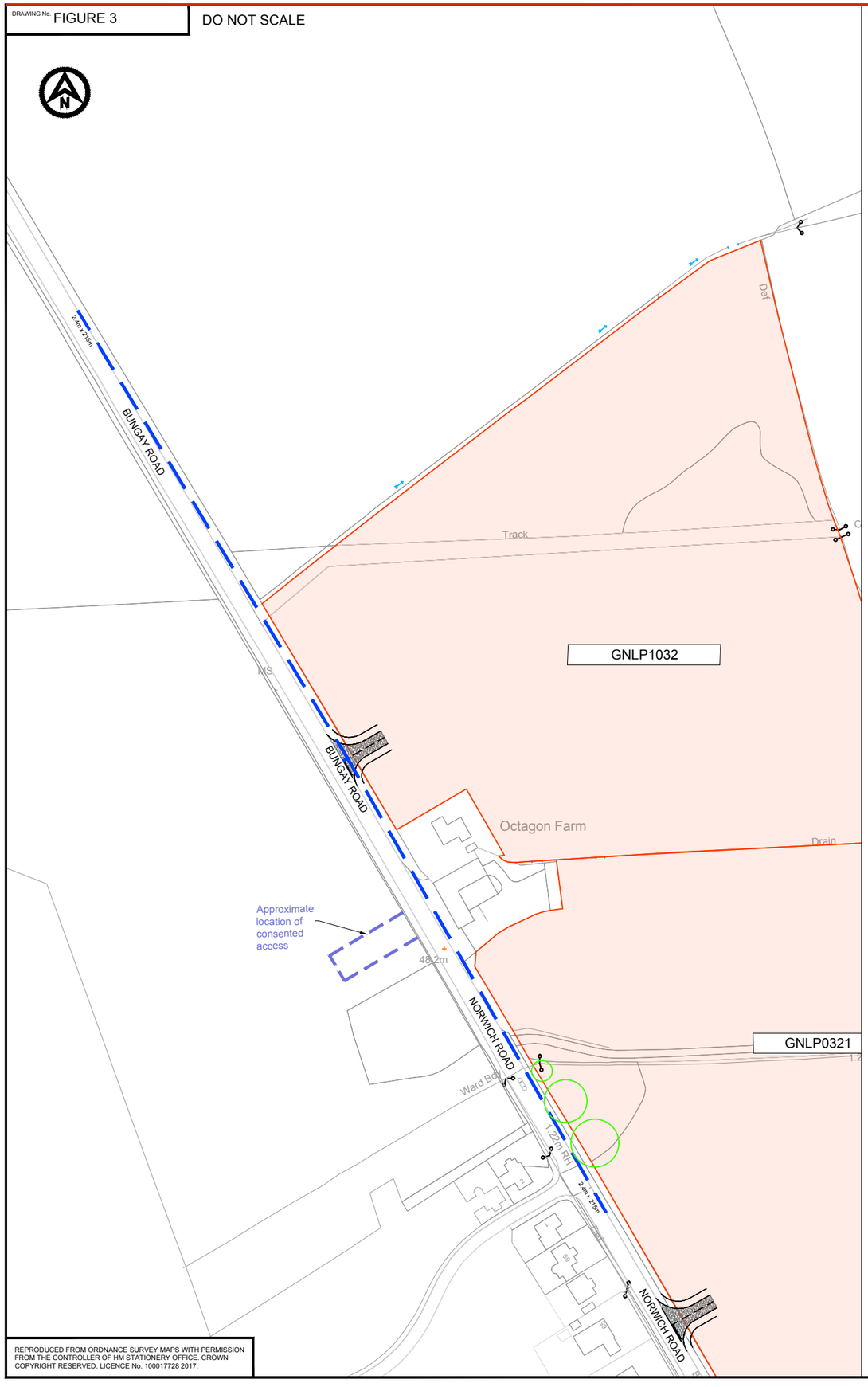

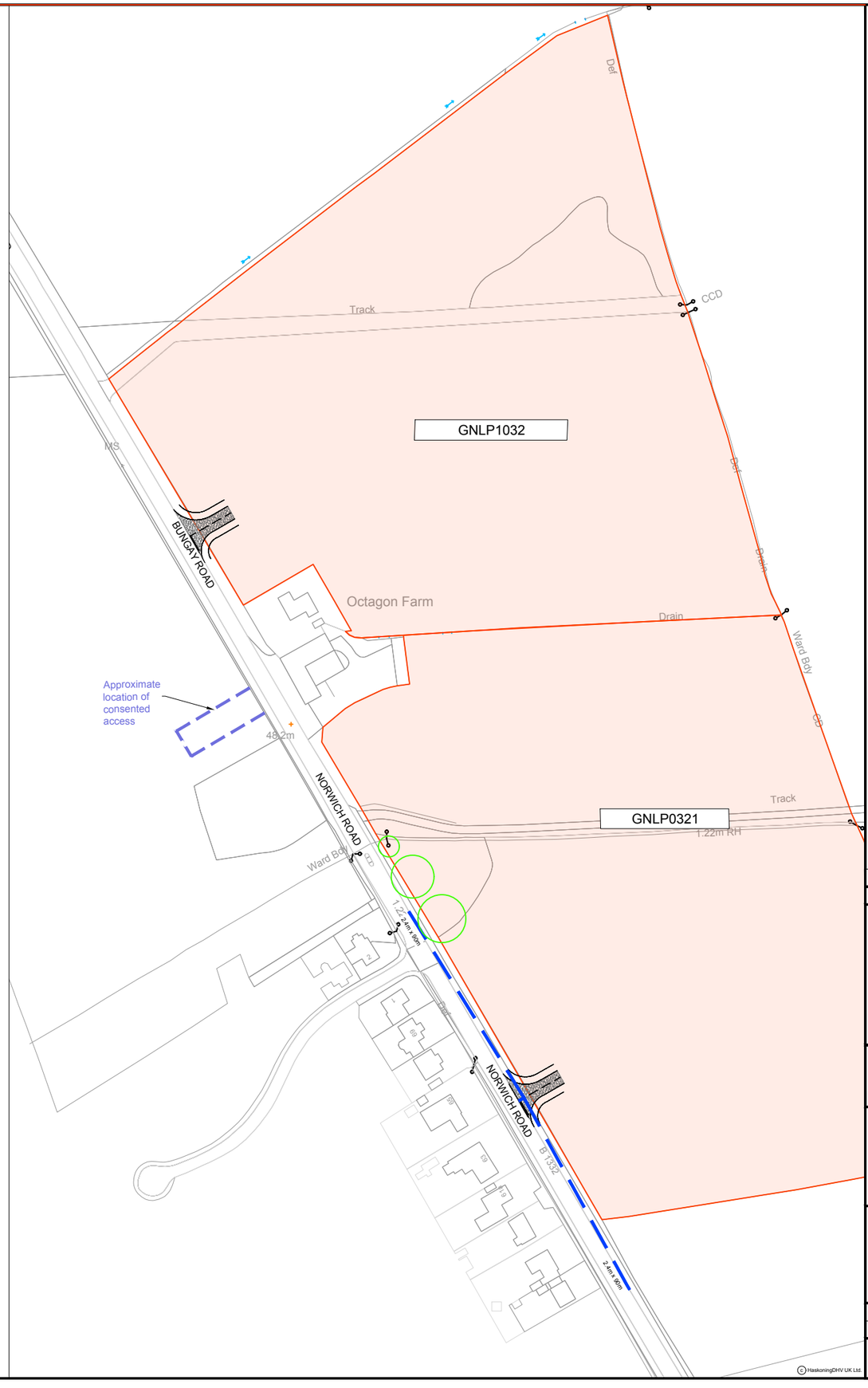

NOTES

1. Do not scale from this drawing. All dimensions are in metres unless noted otherwise.

KEY

- SITE OUTLINE
- PROPOSED ACCESS WITH 3m FOOTWAY
- VISIBILITY SPLAYS 2.4m x 215m to GNLP1032 2.4m x 90m to GNLP0321
- APPROXIMATE LOCATION OF EXISTING TREES

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

TRUSTEES OF ARMINGHALL SETTLEMENT

PROJECT

OCTAGON FARM, FRAMINGHAM EARL

TITLE

VISIBILITY SPLAYS

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FIGURE 4

Potential Infrastructure Enhancements

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DRAWING No. FIGURE 4

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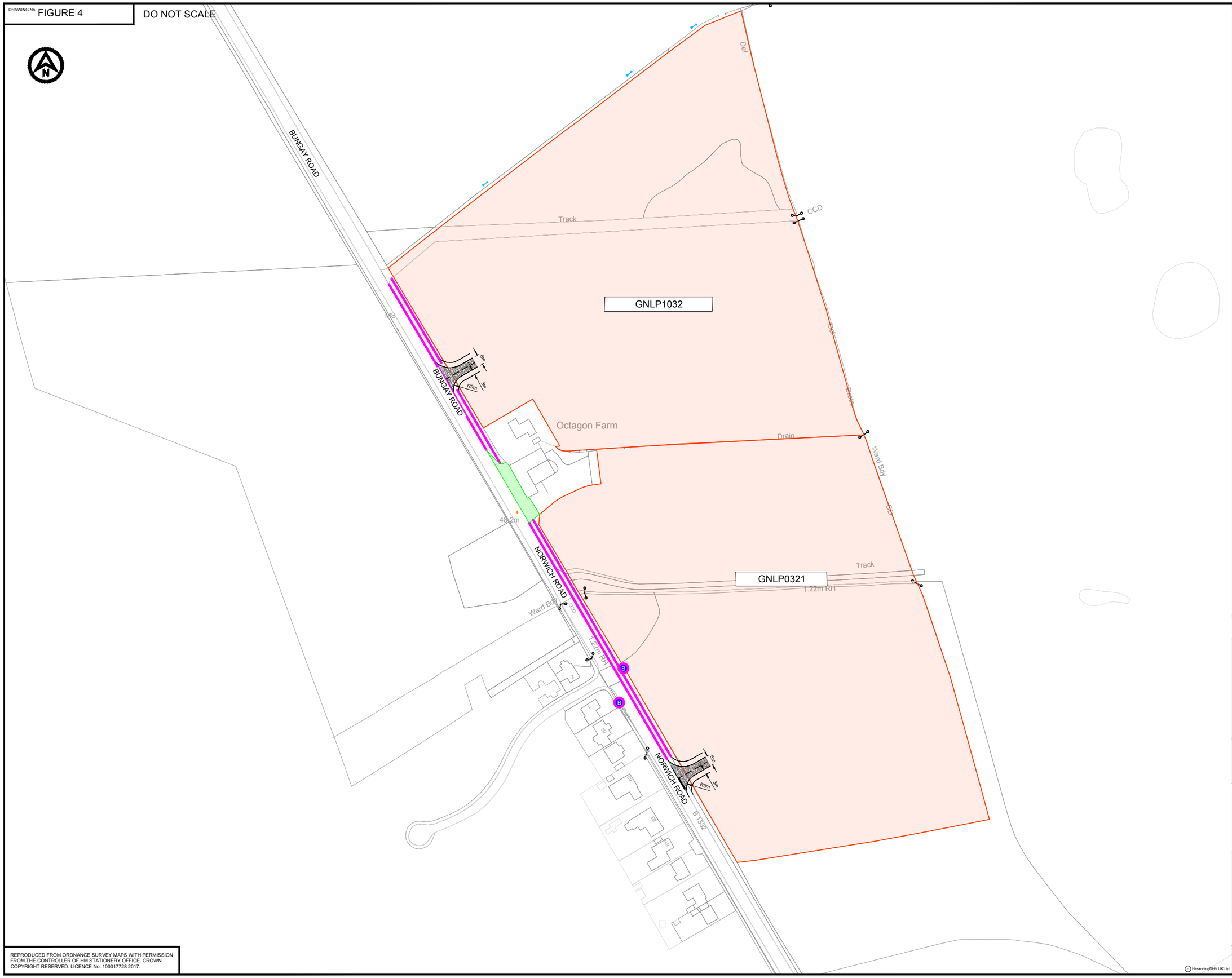

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NOTES

1. Do not scale from this drawing. All dimensions are in metres unless noted otherwise.

KEY

- SITE OUTLINE
- PROPOSED ACCESS WITH 3m FOOTWAY
- PROPOSED BUS STOP INFRASTRUCTURE ENHANCEMENTS
- PROPOSED HIGHWAY INFRASTRUCTURE ENHANCEMENT (3m FOOTWAY / CYCLEWAY)
- LAND OWNERSHIP TO BE CONFIRMED. POTENTIAL FOOTWAY / CYCLEWAY TO BE PROVIDED IN THIS SECTION

REV	DATE	DESCRIPTION	BY	CHK	APP

REVISIONS

CLIENT

TRUSTEES OF ARMINGHALL SETTLEMENT

PROJECT

OCTAGON FARM, FRAMINGHAM EARL

TITLE

POTENTIAL INFRASTRUCTURE ENHANCEMENTS

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APPENDIX 2: DRAINAGE TECHNICAL NOTE

REPORT

Flood Risk and Drainage Feasibility Study

Octagon Farm, Framingham Earl

Client: Trustees of the Arminghall Settlement

Reference: WATPB7641R001F1.0

Revision: 1.0/Final

Date: 20 March 2018

Royal HaskoningDHV

Enhancing Society Together

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Document title:	Flood Risk and Drainage Feasibility Study
Document short title:	
Reference:	WATPB7641R001F1.0
Revision:	1.0/Final
Date:	20 March 2018
Project name:	Octagon Farm
Project number:	PB7641
Author(s):	Emily Blaney and Inge Phernambucq
Drafted by:	Emily Blaney and Inge Phernambucq
Checked by:	Jonathan Morgans
Date / initials:	21/03/2018 JM
Approved by:	
Date / initials:	

Classification
Project related

Disclaimer

Royal HaskoningDHV

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1 Introduction

1.1.1 Royal HaskoningDHV has been commissioned by the Trustees of Arminghall Settlement to provide a high level review of the flood risk and drainage issues in relation to the proposed allocation of potential development sites located at Octagon Farm, Bungay Road in Framingham Earl.

1.1.2 These sites have been identified to be potentially suitable for development in the Greater Norwich Local Plan under the Housing and Economic Land Availability Assessment (HELAA)[1] published in December 2017. The Constraints Analysis of the assessment identified that there are potential constraints relating to flood risk in the proposed sites which could be overcome through development.

1.1.3 In response to the Regulation 18 consultation and in particular the Site Proposals consultation document, the high level review has:

- Reviewed the national and local guidelines which may inform the development in relation to flood risk
- Assessed the flood risk sources to the proposed sites, using available data
- Carried out a preliminary calculation of greenfield runoff rates and likely storage volumes
- Indicated potential drainage solutions and SuDS approaches appropriate to the potential sites.

1.1.4 This Technical Note summarises the findings of the high level review.

[1] *The Greater Norwich Development Partnership (2017) Housing and Economic Land Availability Assessment (HELAA). [Available Online] https://gnlp.jdi-consult.net/documents/pdfs_14/helaa_-_reg_18_-_dec_2017.pdf. Accessed 20/03/2018.*

2 Site Description and Location

2.1 Existing Site Description

2.1.1 The proposed development sites consist of two existing fields located to the east of Bungay Road, with site references GNLP1032 and GNLP0321 as shown in Figure 2-1. The existing sites are currently agricultural land. The sites are bounded by existing agricultural land to the north, east and south, with Bungay Road/Norwich Road to the west.

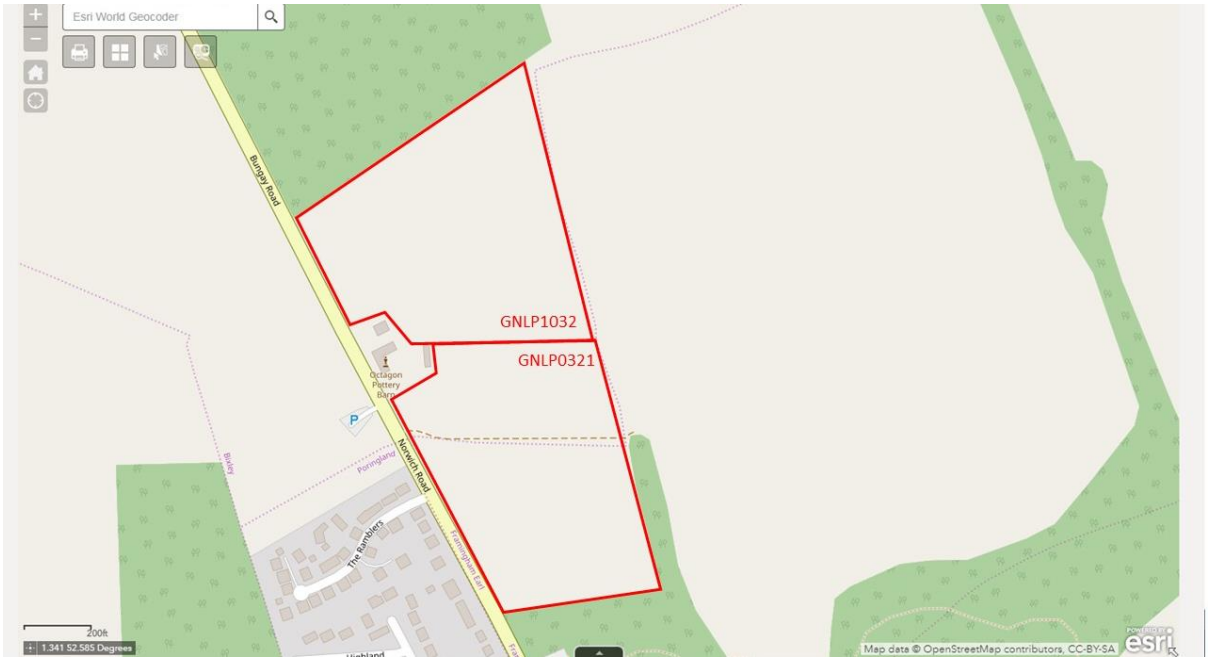

Figure 2-1 The approximate location of the proposed sites. Not to scale. (Source: Open Street map - Accessed 20/03/2018)

2.2 Proposed Development

2.2.1 GNLP1032, the site to the north of Octagon Farm covers an area of 4.28 hectares and adjoins Bungay Road. An allocation is sought for a mixed-used development to consist of approximately 60 dwellings as well as commercial, business and light industrial spaces.

2.2.2 GNLP0321, to the south of Octagon Farm covers and areas of approximately 4.20 hectares and adjoins Norwich Road. An allocation is sought for a mixed-use development for commercial business use along with approximately 100 dwellings with landscaping and associated infrastructure.

2.3 Existing Drainage System

2.3.1 The existing site predominantly comprises of agricultural land, and therefore is believed to be permeable. The site is located at a boundary of soil types with different infiltration characteristics: to the north there are loamy and clayey soils with impeded drainage, while to the south freely draining sandy soils are present

2.3.2 Surface water is assumed to drain via existing land drainage ditches along the northern and eastern perimeter of the proposed sites.

2.3.3 Anglian Water is understood to be the local water and wastewater company. It is likely that any surface water sewers or combined overflow sewers are operated by Anglian Water.

2.4 Geology

2.4.1 The British Geological Survey (BGS) maps[2] identify the bedrock underlying the sites to be White Chalk, overlain with superficial deposits of Crag Group (sand and gravel). There are also superficial deposits of Lowestoft Formation (clay and silt) to the north of GNLP032 and Lowestoft Formation (diamicton) overlaying the area of the remaining proposed developments.

2.5 Hydrology

2.5.1 The sites are located within the main hydrological catchment of the River Yare. The nearest "Main River" as defined by the Environment Agency is Hellington Beck, which flows eastward from Framingham Pigot where it joins as a tributary of the River Yare east of Rockland St Mary. The sites are located approximately 1.2 km to the west of Hellington Beck.

2.5.2 There are no other watercourses located near the proposed sites. There may be culverted Ordinary Watercourses in the area; however, these cannot be identified from Ordinance Survey mapping.

2.5.3 Regionally, the principal groundwater body underlaying the sites is the Broadland Rivers Chalk and Crag. The chalk bedrock is designated as a Principal Aquifer and the sites are located within an Outer Zone 2 Source Protection Zone (SPZ).

[2] *British Geological Survey (BGS; 2017) GeoIndex (Onshore) Online Map. [Available Online] http://mapapps2.bgs.ac.uk/geoindex/home.html. Accessed 19/03/2018.*

3 Policy and Local Guidance

3.1 National Planning Policy Framework (NPPF)

3.1.1 The National Planning Policy Framework (NPPF) Planning Practice Guidance (PPG) for Flood Risk and Coastal Change[3] and the Environment Agency's Climate Change Allowance Guidance[4] provides direction on how flood risk should be considered at all stages of the planning and development process. The planning system should ensure that new development is safe and not exposed unnecessarily to the risks associated with flooding.

3.2 Local Development Documents

The Greater Norwich Local Plan

3.2.1 The proposed sites have been identified to be potentially suitable for development within the Greater Norwich Local Plan (GNLP) under the Housing and Economic Land Availability Assessment (HELAA) published in December 2017[5]. The GNLP will build upon the Joint Core Strategy for the area, and will ensure that housing and employment needs for the area are continued to be met to 2036.

3.2.2 The potential objectives which may be of relevance to the development of the two sites, and to flood risk outlined within the GNLP growth options[6], are:

- *'Homes – to enable delivery of high quality homes of the right size, mix and tenure to meet people's needs throughout their lives*
- *Environment – to protect and enhance the built and natural environment, make best use of natural resources, mitigate against and adapt to climate change.'*

3.2.3 In context of flooding, the GNLP will steer new development away from flood risk areas as far as possible and that development mitigates against or is adapted to flood risk. The favoured approach to flood risk, which the GNLP will take is Option FR1 – *'Require all relevant application undertake a site-specific FRA and to provide a Surface Water Drainage Strategy showing how any SuDS infrastructure will be maintained in perpetuity*.'

3.2.4 The local plan should be informed by the Broadland Rivers Catchment Flood Management Plan (CFMP), to ensure development is guided away from areas with a high probability of flooding.

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[3] *Ministry of Housing, Communities and Local Government (2014) National Planning Policy Framework., Flood Risk and Coastal Change. [Available Online] https://www.gov.uk/guidance/flood-risk-and-coastal-change#making-development-safe-from-flood-risk. Accessed 19/03/2018.*

[4] *Environment Agency (2016) Flood risk assessments: climate change allowances. [Available Online] https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. Accessed 19/03/2018.*

[5] *The Greater Norwich Development Partnership (2017) Housing and Economic Land Availability Assessment (HELAA). [Available Online] https://gnlp.jdi-consult.net/documents/pdfs_14/helaa_-_reg_18_-_dec_2017.pdf. Accessed 20/03/2018.*

[6] *The Greater Norwich Development Partnership (2018) Greater Norwich Local Plan Regulation 18 Consultation – Growth Options. [Available Online] http://www.gnlp.org.uk/assets/Uploads/Reg.18-Growth-Options-document-final050218.pdf. Accessed 20/03/2018.*

Broadland Rivers Catchment Flood Management Plan (CFMP)[7]

3.2.5 The CFMP identifies that the main sources of flood risk to the Broadland Rivers catchment are river flooding from the River Bure, tidal flooding, tide locking, failure of pumping stations and breaching of embankments. These main sources may not be appropriate to the proposed sites. The flood risk sources most appropriate to the proposed sites are described in more detail in Section 4.

3.2.6 The relevant Policy to the proposed sites is Policy 2, Fluvial Rivers. These cover areas of low to moderate flood risk, where existing flood risk management actions can be reviewed to ensure the actions are proportionate to the level of risk.

Greater Norwich Area Strategic Flood Risk Assessment (SFRA)[8]

3.2.7 The SFRA produced in 2017, aims to assess the potential sources of flooding, assess the potential impact of climate change on the flood risk, provide guidance for developers and recommend the criteria that should be used to assess future development. The SFRA should form part of the evidence base of the Local Plan and can be used to inform the Sustainability Appraisal.

3.2.8 There are many flood risk sources outlined in the SFRA which are relevant to the proposed sites which are included in more detail throughout Section 4 – the definition of the flood hazard, in this technical note.

3.2.9 The SFRA outlines that Sustainable Drainage Systems should be considered during preparation of the initial site conceptual layout to ensure well-designed, appropriate and effective systems are implemented. This guidance must be considered in any forthcoming development of the proposed sites.

Norfolk Local Flood Risk Management Strategy (LFMP)[9]

3.2.10 The Norfolk LFMP produced by Norfolk County Council as the Lead Local Flood Authority, which aims to inform all stakeholders in flood risk and flood management. It identifies the extent and characteristics of flood risk in Norfolk and establishes a framework of policies to ensure a consistent approach to flood management is adopted throughout the region. The GNLP is expected to be consistent with the policies set out in the LFMP.

3.2.11 Relevant to the development of the proposed sites, is the notion in the LFMP that states '*there is a need to introduce more sustainable drainage systems in to the* area'. Consideration to this point must be given in any forthcoming development.

3.2.12 The LFMP outlines that three settlements near to the proposed sites have been subject to groundwater flooding. The relevance of this is explored in Section 4.5.

---

[7] *Environment Agency (2009) Broadland Rivers Catchment Flood Management Plan. [Available Online] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/288882/Broadland_Rivers_Catchment_Flood_Management_Plan.pdf. Accessed 19/03/2018.*

[8] *Greater Norwich Partnership (2017) Greater Norwich Area Strategic Flood Risk Assessment. [Available Online] http://www.broads-authority.gov.uk/__data/assets/pdf_file/0006/1037355/2017s5962-Greater-Norwich-Area-SFRA-Final-v2.0.pdf#Norwich. Accessed 19/03/2018.*

[9]

4 Definition of Flood Hazard

4.1 Probability of Flooding – Flood Zones

4.1.1 Table 4-1 outlines the definition of each Flood Zone and associated probability, which has been taken from Table 1 of the NPPF PPG. The NPPF through the application of the Sequential Test aims to steer development towards areas at lowest risk of flooding (Flood Zone 1) and away from medium and high flood risk areas (Flood Zones 2 and 3).

Table 4-1 Summary of Flood Zone Definitions

Flood zone	Probability of flooding	Return periods
1	Low	Land having a less than 1 in 1,000 annual probability of river or sea flooding.
2	Medium	Land having between a 1 in 100 and 1 in 1,000 annual probability of river flooding; or Land having between a 1 in 200 and 1 in 1,000 annual probability of sea flooding.
3a	High	Land having a 1 in 100 or greater annual probability of river flooding; or Land having a 1 in 200 or greater annual probability of sea flooding.
3b	High – Functional Floodplain	This zone comprises land where water has to flow or be stored in times of flood. Local planning authorities should identify in their SFRAs areas of functional floodplain and its boundaries accordingly, in agreement with the Environment Agency.

4.2 Historic Flooding

4.2.1 The Greater Norwich SFRA[10] does not identify any historical flood events located within or near to either of the proposed sites.

[10] *Greater Norwich Partnership (2017) Greater Norwich Area Strategic Flood Risk Assessment. [Available Online] http://www.broads-authority.gov.uk/__data/assets/pdf_file/0006/1037355/2017s5962-Greater-Norwich-Area-SFRA-Final-v2.0.pdf#Norwich. Accessed 19/03/2018.*

4.3 Flooding from rivers

4.3.1 The potential sites are located within Flood Zone 1 as defined by the Environment Agency online Flood Map[11] for planning and presented in Figure 4-1.

4.3.2 It is likely that the catchment area for the existing drainage ditches, falls below the threshold for the Environment Agency's national modelling for flood zone mapping. Although increased flood risk is unlikely at the proposed sites, due to their location within the catchment, high level hydrological modelling would be required to support any forthcoming planning applications.

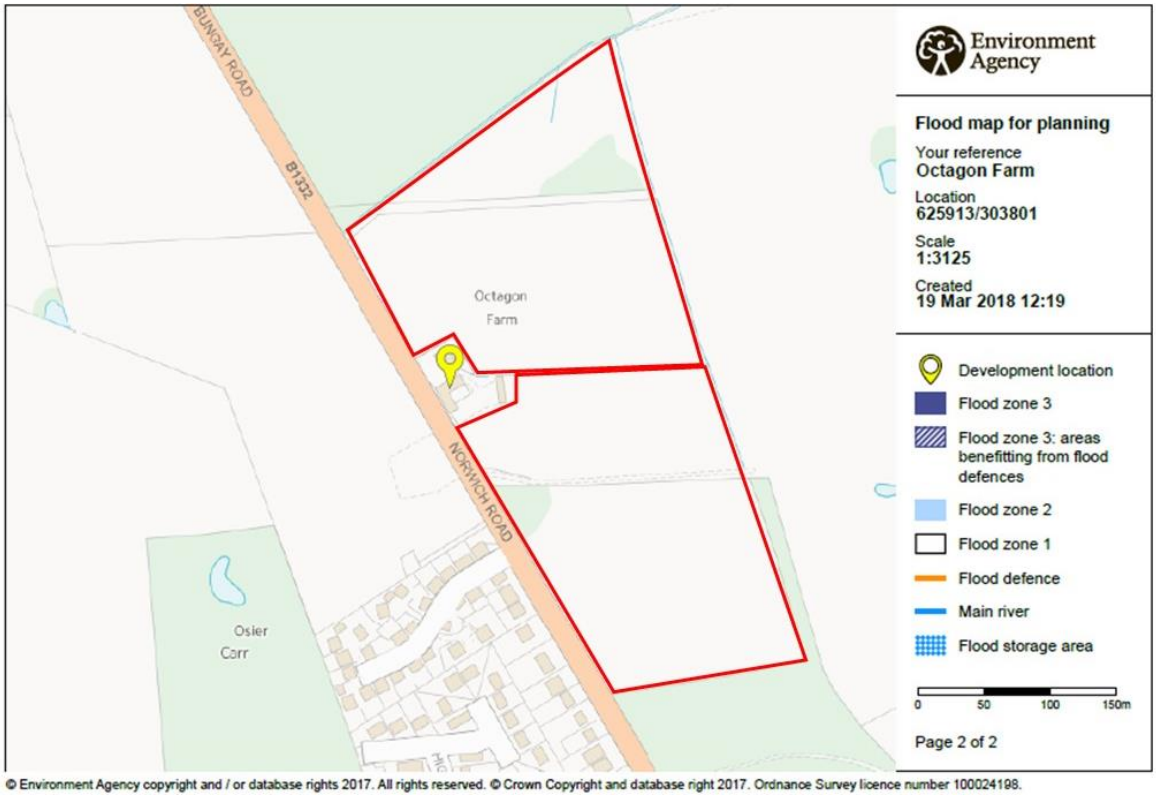

Figure 4-1 The flood map for planning indicating the flood zone and approximate location of the proposed sites. Not to scale. (Source: Environment Agency flood map for planning)

4.3.3 As discussed above, the nearest Main River to the proposed sites is 1.2km to the east, and therefore it can be assumed that it poses minimal fluvial flood risk to the proposed sites. There are existing drainage ditches running to the north and east of the site however, the flood risk from these watercourses is unclear.

4.3.4 Environment Agency Product 4 data identifying modelled water levels (mAOD) for the area has been requested, but at the time of writing have not been received. The assessment of these data would enable the fluvial flood risk to be better evaluated, and how this may inform Environment Agency Flood Zones in the future.

[11] *Environment Agency (Undated) Flood map for planning. [Available Online] https://flood-map-for-planning.service.gov.uk/. Accessed 19/03/2018.*

4.4 Flooding from the sea

4.4.1 The proposed sites are located approximately 27km inland. The Greater Norwich SFRA does not identify any location within proximity to the proposed sites, however does recognise that combined river and tidal flooding is known to affect some settlements within the area. One such settlement is Brundal, located approximately 8.2km from the proposed sites, on the River Yare. It is unlikely that tidal flooding would affect the proposed sites, given the distance from any Main River discussed in Section 2.5. As such, the risk of tidal flooding is still deemed to be low.

4.5 Flooding from groundwater

4.5.1 Owing to the underlying chalk aquifer in the district, described in Section 2.5, flooding from groundwater may pose a risk to the proposed sites. The Greater Norwich SFRA identifies Poringland, Framingham Pigot and Framingham Earl as being at risk of groundwater flooding. The proposed sites are located approximately 2.4km, 1.9km and 2.6km respectively, from the settlements at risk of flooding identified above. The Norfolk Local Flood Risk Management Strategy[12] denotes that the groundwater flooding problems in Poringland and Framingham Earl are attributed to water percolation through the overlying glacial sands and gravels followed by surface run-off across the interface with the chalky boulder clay.

4.5.2 Precise locations of areas at increased risk are not defined, however as the settlements identified as being at risk of groundwater flooding are within close proximity of the proposed sites, groundwater flooding may pose a risk to potential development. Forthcoming development should consider potential groundwater flooding risk and the use of ground investigations to detail this risk.

4.6 Flooding from surface water

4.6.1 The Environment Agency Surface Water Flood Map[13] (Figure 4-2) identifies that the majority of GNLP0321 to the south of Octagon Farm is at very low risk of flooding from surface water. There is a small area of high flood risk on the western boundary of the proposed site. A review of aerial imagery of this site indicates that the area of increased flood risk is associated with an area of increased vegetation, bounded to the east by Norwich Road, and to the north by a small track. Light Detection and Ranging (LiDAR) Digital Terrain Map (DTM) data indicates that this is an isolated, topographically low-lying area and therefore may be acting as a storage area for surface water run-off. The medium flood risk along the eastern perimeter of the proposed site GNLP0321 appears to be correlated with an existing drainage ditch.

[12] *Norfolk County Council (2015) Norfolk Local Flood Risk Management Strategy. [Available Online] https://www.norfolk.gov.uk/what-we-do-and-how-we-work/policy-performance-and-partnerships/policies-and-strategies/flood-and-water-management-policies/local-flood-risk-management-strategy. Accessed 20/03/2018.*

[13] *Environment Agency (2018) Flood risk from surface water, online map. [Available Online] https://flood-warning-information.service.gov.uk/long-term-flood-risk/map. Accessed 19/03/2018.*

4.6.2 The proposed site GNLP1032, to the north of Octagon Farm has an area of low to medium flood risk from surface water flowing from south-west to north-east of the site (Figure 4-2). Reviewing aerial imagery has not resulted in any conclusions as the reason for this increased flood risk, however this risk would need to be appropriately managed for the proposed development.

4.6.3 An area of low to high flood risk also runs along the northern, western and eastern boundaries of the proposed sites. This linear pattern of flood risk can be associated with Bungay Road which runs along the western boundary of the site. Review of aerial imagery suggests there is an existing drainage ditch along the northern and eastern perimeters of the site, correlating with the increased flood risk.

4.6.4 The Site Proposals consultation document mentions a surface water flood risk as well:
"The latter site, GNLP1032 (4.2ha) is adjacent to GNLP0321 (4.2ha). Both have areas at risk of surface water flooding around the boundary and within the site (for GNLP1032, these areas are widespread). These would need to be avoided and mitigated."

4.6.5 The information presented above indicates that the proposed sites are at moderate to high risk of flooding from surface water.

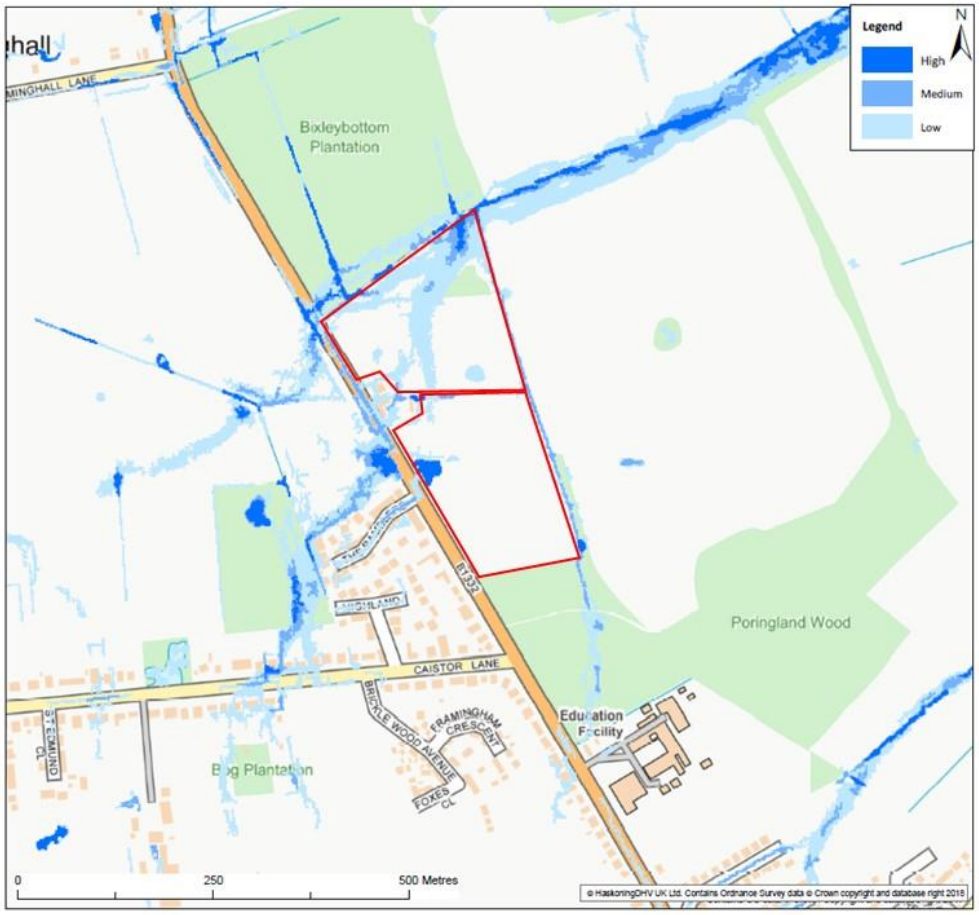

Figure 4-2 The risk of surface water flooding and the approximate location of the proposed sites. Not to scale. (Source: Environment Agency Surface Water Flood Map)

4.7 Flooding from sewers

4.7.1 The Greater Norwich SFRA[14] identifies three recorded flood incidents due to flooding in the postcode NR14 7 associated with the settlements Poringland and Framingham Earl. As above, the exact locations are not specified but the settlements named are within close proximity of the proposed sites. However, as the proposed sites are currently existing agricultural land with just a few farm buildings located on the western perimeter, the risk of flooding from sewers is likely to be very low.

4.8 Flooding from reservoirs, canals and other artificial sources

4.8.1 The proposed sites are not within the maximum extent of flooding from reservoirs as defined by the Environment Agency Reservoir Flooding Map[15]. The proposed sites are also not located near to any canals or other artificial sources. As such, the risk of flooding from these sources is deemed to be negligible.

4.9 Summary of Flooding Sources

4.9.1 The proposed sites are located within Flood Zone 1. The proposed sites are deemed to be at low risk of flooding from fluvial sources, despite the existing drainage ditches which run along the northern and eastern perimeter of the sites. The sites are also deemed to be at low risk of flooding from tidal, sewer and other artificial sources of flooding.

4.9.2 There is evidence that groundwater flooding poses an increased risk to the settlements within proximity to the proposed sites. Although precise locations are not identified, groundwater flooding should be considered at any further development stages and the use of ground investigations should investigate this risk.

4.9.3 The greatest existing risk of flooding to the proposed sites is from surface water. As the existing site is predominantly permeable, the proposed developments have the potential to increase surface water runoff and intensify the risk of surface water flooding. The pluvial flood risk should be assessed and managed by working with the architect to develop the layout to ensure that overland flow routes are identified as part of any future development.

4.9.4 Environment Agency Product 4 data has been requested but has not been received at the time of writing. The assessment of this data would provide greater certainty regarding the flood risk to the proposed sites.

[14] *Greater Norwich Partnership (2017) Greater Norwich Area Strategic Flood Risk Assessment. [Available Online] http://www.broads-authority.gov.uk/__data/assets/pdf_file/0006/1037355/2017s5962-Greater-Norwich-Area-SFRA-Final-v2.0.pdf#Norwich. Accessed 19/03/2018.*

[15] *Environment Agency (2018) Flood risk from reservoirs, online map. [Available Online] https://flood-warning-information.service.gov.uk/long-term-flood-risk/map. Accessed 19/03/2018.*

5 Flood Vulnerability

5.1 Sequential and Exception Test

5.1.1 The aim of the NPPF PPG Sequential Test is to ensure that a sequential approach is adopted to steer new development to areas with the lowest probability of flooding i.e. Flood Zone 1. Where there are no reasonably available sites in Flood Zone 1 the Local Planning Authority (LPA), Norfolk County Council, can consider reasonably available sites in Flood Zone 2. Only where there are no reasonably available sites for development in Flood Zone 1 and 2, should the suitability of sites in Flood Zone 3 be considered.

5.1.2 Following the application of the Sequential Test, if it is not possible for the development to be located in zones with a lower probability of flooding, the Exception Test may be required. For the Exception Test to be passed:

- It must be demonstrated that the development provides wider sustainability benefits to the community that outweigh flood risk, informed by a Strategic Flood Risk Assessment where one has been prepared.
- A site-specific flood risk assessment must demonstrate that the development will be safe for its lifetime taking account of the vulnerability of its users, without increasing flood risk elsewhere, and, where possible, will reduce flood risk overall.

5.1.3 Both elements of the test will have to be passed for development to be allocated or permitted. Within each flood zone, surface water and other sources of flooding also need to be considered in applying the sequential approach to the location of development.

5.2 Sequential Test Vulnerability Assessment

5.2.1 The vulnerability of different types of development is classified in the NPPF Technical Guidance for Flood risk and coastal change[16]. The descriptions of Highly Vulnerable, More Vulnerable, Less Vulnerable and Water Compatible from the guidance are as follows:

- ***Highly Vulnerable*** *– Buildings used for: Police, ambulance and fire stations and command centres; basement dwellings; caravans and mobile homes; and installations requiring hazardous substances consent.*
- ***More Vulnerable*** *– Buildings used for: hospitals; dwellings and accommodation; residential institutional accommodation; non-residential health services, educational facilities; drinking establishments; nightclubs and hotels.*
- ***Less Vulnerable*** *– Buildings used for: shops; financial, professional and other services; restaurants and cafes; hot food and takeaways; offices; general industry and storage etc.*
- ***Water Compatible*** *– Development used for: flood control infrastructure; amenity open space, nature conservation and outdoor sports facilities; water / sewerage pumping stations; docks marinas and wharves; and navigation facilities.*

[16] *Ministry of Housing, Communities and Local Government (2014) National Planning Policy Framework., Flood Risk and Coastal Change. [Available Online] https://www.gov.uk/guidance/flood-risk-and-coastal-change#making-development-safe-from-flood-risk. Accessed 19/03/2018.*

5.2.2 The NPPF Technical Guidance also defines in Table 3 what should be classed as suitable development given the flood risk vulnerability of the development and the flood zone it is located within. This table is reproduced here as Table 5-1.

Table 5-1 Flood risk vulnerability and flood zone 'compatibility'. Key: ✓development should be permitted, ✗ development should not be permitted.

Flood Zones	Flood Risk Vulnerability Classification				
	Essential Infrastructure	Highly Vulnerable	More Vulnerable	Less Vulnerable	Water Compatible
Zone 1	✓	✓	✓	✓	✓
Zone 2	✓	Exception Test required	✓	✓	✓
Zone 3a	Exception Test required	✗	Exception Test required	✓	✓
Zone 3b	Exception Test required	✗	✗	✗	✓

5.3 Site Vulnerability Assessment

5.3.1 Under the NPPF Flood risk and Coastal Change, Planning Practice Guidance, the proposed developments with site GNLP1032 would be considered as *'**More Vulnerable**'* due to the residential dwellings proposed for the site regardless of the '***Less Vulnerable***' commercial aspect. The proposed site GNLP0321 would also be classified as *'**More Vulnerable**'* for the same reason. Under the NPPF Guidance, developments classified as 'More Vulnerable' are considered to be appropriate within Flood Zones 1 and 2. Those in Flood Zone 3a require an Exception Test, and those in Flood Zone 3b are not considered compatible (Table 5-1). The table does not reflect the need to avoid risk from sources other than rivers and sea.

5.4 Development Potential

5.4.1 The proposed sites have been identified as being located within Flood Zone 1, and the proposed development is not classified as Essential Development or Highly Vulnerable. Therefore, the development in accordance with the NPPF is appropriate.

5.4.2 The increased surface water risk to the proposed sites should be managed appropriately, ensuring the development layout being designed so that the most vulnerable uses are restricted to higher ground at lower risk of flooding. This may mean potentially limiting development within areas of high surface water flood risk to 'Water Compatible' developments. Potential mitigation measures are considered in more detail in section 7.

5.5 Climate Change

5.5.1 Given the potential sources of flooding at the site, climate change is likely to impact the site through increased rainfall intensity and duration which may amplify surface water flooding.

5.5.2 The Environment Agency issued updated guidance in February 2017 on climate change allowances[17] to be considered within Flood Risk Assessments (FRAs), and therefore further consideration of this matter will be required at this stage.

[17] *Environment Agency (2016) Flood risk assessments: climate change allowances. [Available Online] https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. Accessed 19/03/2018.*

6 High Level Surface Water Drainage Strategy

6.1 Existing Drainage System

6.1.1 As discussed in Section 2.3, the proposed sites are predominately greenfield land. They have no formal drainage system and drain naturally via a land drainage network to the northern and eastern perimeter of the proposed sites.

Proposed High Level Drainage Strategy

6.1.2 The Proposed Development seeks allocation for approximately 60 dwellings in the site to the north (GNLP1032) and 100 dwellings in the site to the south (GNLP0321). A full Drainage Strategy will need to be developed along with the full Flood Risk Assessment to accompany any forthcoming planning application.

6.1.3 The development will be served by a new drainage network that will discharge into the existing land drainage network. Figure 6-1 shows the LiDAR DTM map, which indicates the southern part of the area is at a slightly higher elevation. A network of channels could be provided that flow towards the existing drainage network to the north and east of the Sites.

6.1.4 The isolated low-lying area is marked in Figure 6-1. This area may be acting as a storage area for surface water run-off.

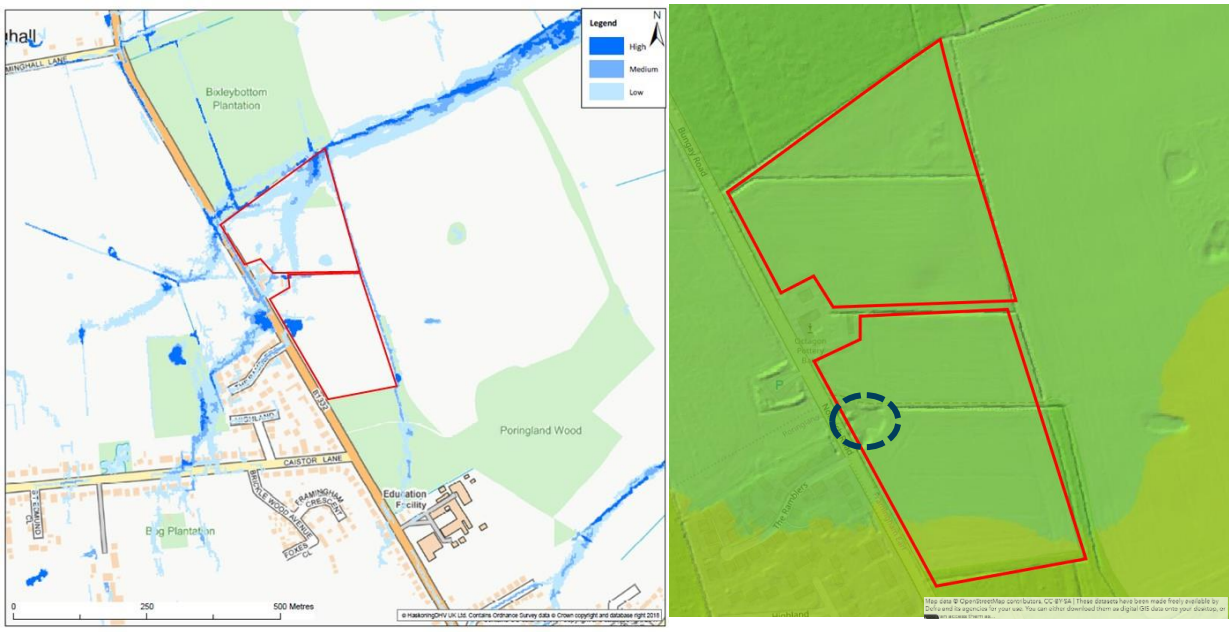

Figure 6-1 EA Flood Map (Left) and LiDAR DTM map (right). The low-lying area is marked.

6.1.5 The system's required capacity is calculated in the next section.

6.2 Surface Water Drainage Strategy Calculations

Assumptions

6.2.1 It is assumed that at this greenfield site the impermeable area is 0%. Because there is no indication of the likely impermeable proportion for the proposed use given, there are three calculations done: with and assumed proposed impermeable area of 20, 50 and 80%. 20% is a likely minimum with the proposed number of dwellings and the fact that homes have an average usable floor area of 94 m^2 [18]. An impermeable area of 80% is a likely maximum.

Table 6-1 Characteristics of the proposed sites

Site Name	Site Location	Area (ha)	No. Dwellings	Assumed Proposed Impermeable Area (%)
GNLP1032	Octagon Farm North	4.28	60	20, 50, 80
GNLP0321	Octagon Farm South	4.20	100	20, 50, 80

6.2.2 The greenfield runoff rates were calculated using the IH124 Method. The IH124 method is a recognised industry approach recognised by the Environment Agency and Local Planning Authorities.

6.2.3 The runoff calculation uses the Standard Percentage Runoff (SPR). The site is located at a boundary of soil types with different infiltration characteristics: to the north there are loamy and clayey soils with impeded drainage, while to the south freely draining sandy soils are present. The Soil Types Map in the Greater Norwich Area SFRA[19] confirms this observation. For the runoff rate calculations, a 37% runoff percentage is assumed for greenfield area, and a 75% runoff percentage is used for impermeable areas. It is recommended that the infiltration characteristics of the present soil in the Sites is studied in more detail in the full Drainage Strategy.

6.2.4 The Norfolk County Council guidance document[20] regarding their Lead Local Flood Authority role as Statutory Consultee to Planning provides information on how SuDS proposals for new developments will be determined. It states that greenfield runoff rates should not exceed the 1% (1 in 100) plus climate change allowance rainfall event.

6.2.5 The Environment Agency guidelines[21] outline a 65% climate change allowance for the Anglian River Basin District as the upper end allowance for total potential change anticipated for the '2080s'.

[18] *Ministry of Housing, Communities and Local Government (2016) English Housing Survey, Housing stock report 2014-2015. [Available Online] https://www.gov.uk/government/statistics/english-housing-survey-2014-to-2015-housing-stock-report. Accessed 20/03/2018*

[19] *Greater Norwich Partnership (2017) Greater Norwich Area Strategic Flood Risk Assessment. [Available Online] http://www.broads-authority.gov.uk/__data/assets/pdf_file/0006/1037355/2017s5962-Greater-Norwich-Area-SFRA-Final-v2.0.pdf#Norwich. Accessed 19/03/2018.*

[20] *Norfolk County Council (2017) lead Local Flood Authority Statutory Consultee for Planning, Guidance Document. [Available Online] https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-developers. Accessed 20/03/2018.*

[21] *Environment Agency (2016) Flood risk assessments: climate change allowances. [Available Online] https://www.gov.uk/guidance/flood-risk-assessments-climate-change-allowances. Accessed 19/03/2018.*

Results

6.2.6 The greenfield runoff rates for GNLP1032 - North are outlined in Table 6-2.

Table 6-2 Calculated runoff rates including 65% climate change allowance for the GNLP1032 - North

	Runoff Rate (l/s/ha)	
	Return Period 1:1	Return Period 1:100
Current	3.5	14.2
Impermeable area 20%	6	24.5
Impermeable area 50%	9.8	39.9
Impermeable area 80%	13.5	55.4

6.2.7 The pre-development greenfield runoff rate is approximately 14.2 l/s/ha for the 1 in 100 year return period with climate change. For the whole area of 4.28ha, this equals 60.7 l/s. The proposed post development runoff rate will be attenuated and controlled to not exceed this rate. The total attenuation provided for the development in this area of the site is shown in table 6-3 for the different scenarios.

Table 6-3 Calculated runoff rates and attenuation based on a 6-hour rainfall event for the GNLP1032 - North

	Runoff rate (l/s)	**Attenuation (m^3)**
Current	60.7	-
Impermeable area 20%	104.7	952
Impermeable area 50%	170.8	2380
Impermeable area 80%	237.0	3808

6.2.8 The greenfield runoff rates for GNLP0321 - South are outlined in Table 6-4.

Table 6-4 Calculated runoff rates including 65% climate change allowance for the GNLP0321 – South

	Runoff Rate (l/s/ha)	
	Return Period 1:1	Return Period 1:100
Current	3.4	13.9
Impermeable area 20%	5.9	24
Impermeable area 50%	9.6	39.2
Impermeable area 80%	13.3	54.3

6.2.9 The pre-development greenfield runoff rate is approximately 13.9 l/s/ha for the 1 in 100 year return period with climate change. For the whole area of 4.20ha, this equals 59.5 l/s. The proposed post development runoff rate will be attenuated and controlled to the maintain this rate. The total attenuation provided for the development in this area of the site is shown in Table 6-5 for the different scenarios.

Table 6-5 Calculated runoff rates and attenuation based on a 6-hour rainfall event for the GNLP0321 - South

	Runoff rate (l/s)	**Attenuation (m^3)**
Current	59.5	-
Impermeable area 20%	102.8	935
Impermeable area 50%	167.6	2336
Impermeable area 80%	232.5	3737

6.3 Management and Maintenance of Drainage Systems

6.3.1 Any private on-site drainage structures (such as pipes, attenuation structures, interceptors, pumping stations, outfalls) will remain in the ownership and responsibility of the site occupiers who will be required to maintain these appropriately.

6.3.2 The maintenance and repair of any public sewers will be the responsibility of the local Water and / or Sewerage Company. Any public highway drains will be the responsibility of the Local Highways Authority to maintain. The ordinary watercourses are the responsibility of the riparian owner. This is normally defined on the title plan and register of the land registry documents. In instances where this is not defined each adjacent land owner is responsible up to the centreline of the watercourse for its maintenance.

6.3.3 The drainage network will need to be operated in accordance with the design specification. A maintenance plan will be developed for the site and should implement appropriate practices in accordance with industry standards to maintain the design capacity of the drainage system. The management and maintenance plan shall also include the arrangements for adoption by any public authority or statutory undertaker and any other arrangements.

7 Mitigation Measures

7.1.1 When determining planning applications, local planning authorities should ensure that flood risk is not increased elsewhere and consider if development is appropriate for the level of flood risk. There are a number of opportunities to reduce flood risk to the proposed sites during their lifetime, which would help satisfy concerns of the Environment Agency and improve the chances of receiving planning permission from the Local Planning Authority. These are considered below along with a qualitative indication of the construction and maintenance.

7.2 Surface Water Flooding Recommendations

7.2.1 The pluvial flood risk should be assessed by working with the architect to develop the layout to ensure that overland flow routes are identified as part of any future development. These could be Swales, SUDs, green spaces, play areas etc. The pluvial risk should be managed in careful profiling of any housing development and where needed adequately high finished floor levels. This approach would need to be agreed with the Local Planning Authority

7.3 Sustainable Drainage Systems (SuDS)

7.3.1 Surface water runoff will need to be controlled to ensure no flooding of property, and no increase in the existing surface water runoff rate to a receiving watercourse during a 1 in 100 year plus climate change allowance event.

7.3.2 Sustainable Drainage Systems (SuDS) can be installed to reduce the causes and impacts of flooding and remove urban pollutants from urban run-off at source. Whether the use of SuDS should be considered or not, and the practicality of the different types of SuDS, will ultimately depend upon the proposed development and its location.

7.3.3 The Greater Norwich Area SFRA[22] states that '*SuDS must be considered at the outset, during preparation of the initial site conceptual layout to ensure that enough land is given to design spaces that will be an asset to the development rather than an after-thought. This will assist with the delivery of well designed, appropriate and effective SuDS'*. Chapter 9 describes the different guidance on SuDS in this area, and describes effects of SuDS, types of SuDS and the management of SuDS.

7.3.4 The Norfolk County Council guidance document[23] regarding their Lead Local Flood Authority role as Statutory Consultee to Planning provides information on how SuDS proposals for new developments will be determined. It details:

> '*The proposed method for draining the site should be in accordance with the sustainable drainage hierarchy; with a preference for shallow (<2 m deep) infiltration measures, followed by measures to drain to a nearby watercourse, otherwise discharging to a surface water sewer. The last method of draining a site would be to either a combined/foul sewer, or via deep infiltration methods (>2 m below ground level)*.'

7.3.5 In conducting the full Drainage Strategy, it is recommended that both documents are reviewed.

[22] *Greater Norwich Partnership (2017) Greater Norwich Area Strategic Flood Risk Assessment. [Available Online] http://www.broads-authority.gov.uk/__data/assets/pdf_file/0006/1037355/2017s5962-Greater-Norwich-Area-SFRA-Final-v2.0.pdf#Norwich. Accessed 19/03/2018.*

7.3.6 The proposed sites are located within an Outer Zone 2 Source Protection Zone which could influence the use of infiltration SuDS. As part of the ground investigations, infiltration testing would be required in accordance with BRE digest 365 to confirm whether these types of SuDS are appropriate.

7.3.7 Opportunities for source and site control measures should be considered where practicable. Measures including filter strips or drains and permeable paving would limit the impermeable proportion of the development. There is the potential for a detention basin or pond within isolated low-lying areas of the development to store surface water runoff.

[23] *Norfolk County Council (2017) lead Local Flood Authority Statutory Consultee for Planning, Guidance Document. [Available Online] https://www.norfolk.gov.uk/rubbish-recycling-and-planning/flood-and-water-management/information-for-developers. Accessed 20/03/2018.*

8 Summary

8.1.1 The proposed sites are located within Flood Zone 1. Surface water flooding may pose a risk to development on the sites, particularly GNLP1032. This risk can be managed with appropriate layout design and the use of mitigation methods such as SuDS. Groundwater flooding may also pose a risk to the site, however further investigation is needed. Fluvial, tidal and other sources of flooding are deemed to pose a low risk to the proposed sites. Environment Agency Product 4 data has not been received at the time of writing, however, it is observed the consideration of this data may provide a more reliable representation of flood risk.

8.1.2 There is potential for residential, commercial and light industrial development on the proposed sites, and such development would be in accordance with the Sequential and Exception Tests. However, residential properties or accommodation may need to be limited to areas of higher ground which are at lower risk of flooding.

8.1.3 The existing ground conditions are permeable, but there is opportunity to implement SuDS techniques, such as source and site control measures, in order to reduce or store surface water runoff. The potential for surface water from the development to be discharged into the ground would be subject to further ground investigation and Environment Agency agreement in principle.

APPENDIX 3: LANDSCAPE TECHNICAL NOTE

Respondent ID: 15661
March 2018 | HD | P18-0053

GREATER NORWICH LOCAL PLAN: SITE PROPOSALS DOCUMENT

SITES: GNLP 0321 AND GNLP 1032

LANDSCAPE TECHNICAL NOTE

ON BEHALF OF THE TRUSTEES OF ARMINGHALL SETTLEMENT

Pegasus Group

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Birmingham | Bracknell | Bristol | Cambridge | Cirencester | East Midlands | Leeds | Liverpool | London | Manchester

PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

CONTENTS:

1. INTRODUCTION

1.1 Pegasus Group was asked to carry out a preliminary landscape and visual review of two sites at Framingham Earl which are identified within the Housing and Economic Land Availability Assessment (December 2017) (HELAA): Sites GNLP 0321 and GNLP 1032.

1.2 The location of these sites is shown on the **Site and Viewpoint Location Plan** at **Appendix 1**. **Photographic views** of the sites and the surrounding area are set out at **Appendix 2**.

1.3 The HELAA sets out a Suitability Assessment for each site which assesses both Sites GNLP 0321 and GNLP 1032 as 'Suitable'. However, the HELAA Suitability Assessment - Impacts Analysis places the two sites in different categories in terms of 'Sensitive Landscapes' and this is subject of this Technical Note.

2. SITE CONTEXT

2.1 Sites GNLP 0321 and GNLP 1032 are contiguous with each other and are located on the eastern side of Bungay Road, to the north of Framingham Earl. The combined sites are physically and visually contained by woodland, roads and residential development to the north, south and west.

2.2 The house and other commercial buildings associated with Octagon Farm are located on Bungay Road, adjacent to the western boundaries of both sites (refer to **Photoview 1** at **Appendix 2**).

2.3 Existing residential properties within Framingham Earl are located on the western side of Bungay Road directly opposite the south-western boundary of Site GNLP 0321. Further residential development is currently (March 2018) under construction on the western side of Bungay Road, directly opposite Sites GNLP 0321 and GNLP 1032 (refer to **Photoviews 1 and 2** at **Appendix 2**).

2.4 Poringland Wood forms the southern boundary of Site GNLP 0321, whilst Bixley Bottom Plantation forms the northern boundary of Site GNLP 1032 (refer to **Photoviews 1 and 2**).

2.5 The eastern boundary of both sites is identified on the ground by the edge of the arable fields. These field edges contain a small number of isolated mature trees and a line of trees. Beyond the sites' eastern boundaries lie further arable fields separated by lines and blocks of woodland (refer to **Photoviews 3 and 5**).

3. HELAA IMPACTS ANALYSIS –LANDSCAPE

3.1 As noted above, the HELAA Suitability Assessment - Impacts Analysis places the Sites GNLP 0321 and GNLP 1032 in different categories in terms of their potential impact on 'Sensitive Landscapes'. Site GNLP 0321 is placed in the Green category for 'Sensitive Landscapes', whilst the contiguous Site GNLP 1032 is placed in the Amber category. We disagree with this analysis and contend that both sites should be placed in the Green category.

3.2 The Suitability Assessment Criteria for Impact Analysis are set out at Appendix A of the HELAA. Sensitive Landscapes are described as follows:

> ***"Sensitive landscapes include***
>
> - ***areas within and adjacent to National Parks, the Broads and Areas of Outstanding Natural Beauty***
>
> ***They also include land within and adjacent to the Broads which has equivalent status to a National Park and benefits from the highest status of protection in relation to landscape and scenic beauty.***
>
> ***Other considerations include the potential loss of protected trees on the amenity of the area and the impacts on the setting of the Norfolk Coast AONB***
>
> ***Other landscapes include Strategic Gaps (or equivalent) and or areas identified as particularly sensitive in Landscape Character Assessments."***

Nationally and Locally Significant Landscapes.

3.3 Neither Site GNLP 0321 nor Site GNLP 1032 lies within or in close proximity to a National Park or an Area of Outstanding Natural Beauty.

3.4 Similarly, neither site lies within a Strategic Gap.

Published Landscape Character Assessment

3.5 Both sites lie within the same Landscape Character Area (LCA) within the South Norfolk Landscape Assessment (2001) – 'D2: Poringland Settled Plateau Farmland'. Based on our site visit carried out for this Technical Note, there is no obvious distinction between the landscape character of either site. Both are arable fields of very similar visual and physical qualities (refer to **Photoviews 3 and 5** at **Appendix 2**). Neither site is considered to be 'particularly sensitive' in landscape character terms.

3.6 The published 'Development Considerations' for 'D2: Poringland Settled Plateau Farmland' equally apply to both sites, and include:

- ***"…maintaining the distinction and separation between the core settled area around Poringland and smaller outlying settlements;***
- ***Consider the impact of developments upon views from and to the sensitive edge of the plateau, particularly in the north of the area which is intervisible with Norwich; …***
- ***Ensure that any new development is well-integrated into the landscape and maintains the quality of transition between the settled and the agricultural landscape; …."***

3.7 With regard to maintaining the distinction and separation between settlements, both sites are clearly separated from the next nearest settlement (Arminghall to the north-west) by agricultural fields, woodland blocks and by the new residential development which is currently under construction to the west of Bungay Road (refer to **Photoview 4** at **Appendix 2**). This distinction would be maintained should either Site GNLP 1032 or Site GNLP 0321 come forward for development.

3.8 With regard to intervisibility with Norwich, Bixleybottom Plantation adjacent to the north of Site GNLP 1032, other intervening woodland and the current development to the west of Bungay Road provide substantial physical and visual separation between both of the sites and Norwich (refer to **Photoview 1** at **Appendix 2**). Our assessment is supported by the published LCA which also notes that the potential for long open to Norwich from the LCA "*has been interrupted by landcover elements (woodland, hedgerows and settlement)*" (paragraph 13.2).

3.9 With regard to maintaining the quality of the transition between settled and agricultural landscapes, should these sites come forward for development, the proposed site layout would encompass a comprehensive and robust landscape framework, such that the development would sit comfortably within its existing context.

South Norfolk Local Landscape Designations Review (2012)

3.10 Whilst not mentioned in the Suitability Assessment Criteria regarding 'Sensitive Landscapes' in the HELAA, South Norfolk Council published the 'South Norfolk Local Landscape Designations Review - Norwich Southern Bypass Landscape Protection

Zone' (SNLLDR) in 2012. Figure 5.1 – Viewing Cones/Zones from the Northern Plateau Edge' within the SNLLDR (see **SNLLDR extract** at **Appendix 3**) sets out two 'Viewing Cones/Zones' which extend southwards from Norwich City Centre.

3.11 The outer edge of the identified Viewing Cone which extends to the south-east of Norwich encompasses both Bixleybottom Plantation and Site GNLP 1032, which lies immediately to the south of this substantial block of woodland. Site GNLP 0321 is excluded from the Viewcone and we consider that this may have been the cause of the separate Amber and Green ratings with regard to 'Sensitive Landscapes' within the HELAA Suitability Assessment - Impacts Analysis. We consider that this distinction is arbitrary and erroneous.

3.12 As has been demonstrated in the preceding paragraphs and by the **Photoviews** at **Appendix 2**, there is no intervisibility between either Site GNLP 1032 or Site GNLP 0321 and Norwich. Views northwards from both sites are prevented by the substantial Bixleybottom Plantation. We, therefore, consider that the inclusion of Site GNLP 1032 within the broadly defined Viewcone identified in the SNLLDR is erroneous.

3.13 Given the above analysis, we consider that Site GNLP 1032 should have received the same Green rating for 'Sensitive Landscapes' as Site GNLP 0321 in the HELAA Suitability Assessment.

4. SUMMARY AND CONCLUSION

4.1 Sites GNLP 0321 and GNLP 1032 are contiguous with each other and are physically and visually contained by woodland, roads and residential development to the north, south and west.

4.2 The HELAA Suitability Assessment - Impacts Analysis places Sites GNLP 0321 and GNLP 1032 in different categories in terms of their potential impact on 'Sensitive Landscapes'. Site GNLP 0321 is placed in the Green category for 'Sensitive Landscapes', whilst the contiguous Site GNLP 1032 is placed in the Amber category. We disagree with this analysis and contend that both sites should be placed in the Green category.

4.3 Having considered the Suitability Assessment Criteria set out at Appendix A of the HELAA, neither Site GNLP 0321 nor Site GNLP 1032 fulfils any of the stated criteria for inclusion in the Amber category for 'Sensitive Landscapes'.

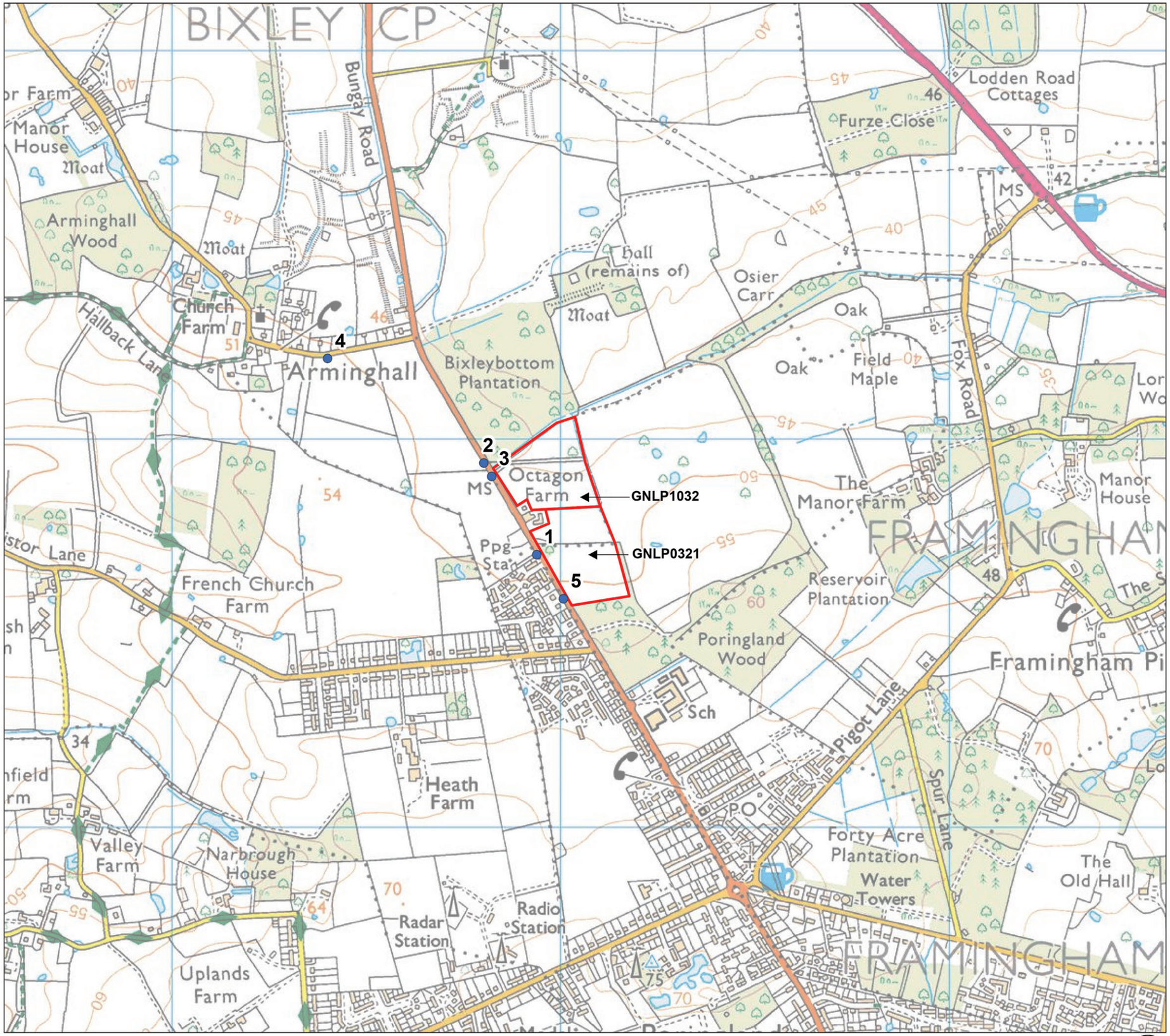
4.4 It is considered that the distinction between the differing 'Impacts Analysis - Sensitive Landscapes' assessment in the HELAA of the two sites may be the erroneous inclusion of Site GNLP 1032 in a broadly drawn Viewcone between Norwich City Centre and 'the Northern Plateau Edge' (as defined in 'South Norfolk Local Landscape Designations Review - Norwich Southern Bypass Landscape Protection Zone').

4.5 The visual analysis contained in this Technical Note demonstrates that both Sites GNLP 1032 and GNLP 0321 are visually separated from Norwich, most notably by Bixleybottom Plantation which lies immediately to the north of Site GNLP 1032.

4.6 We consider that the distinction between 'Sensitive Landscapes' assessment of both Sites GNLP 1032 and GNLP 0321 in the HELAA is arbitrary and erroneous, and that both sites should be placed in the Green category of that assessment ie that "*Development of the site would have either a neutral or a positive impact, but importantly not have a detrimental impact, on sensitive landscapes or their setting*".

APPENDIX 1

Site and Viewpoint Location Plan



KEY

Site Boundary

Viewpoint Location

PLANNING | DESIGN | ENVIRONMENT | ECONOMICS

0 0.5 km

N

Revisions:
First Issue- 22/03/2018 AJH

Site and Viewpoint Location Plan

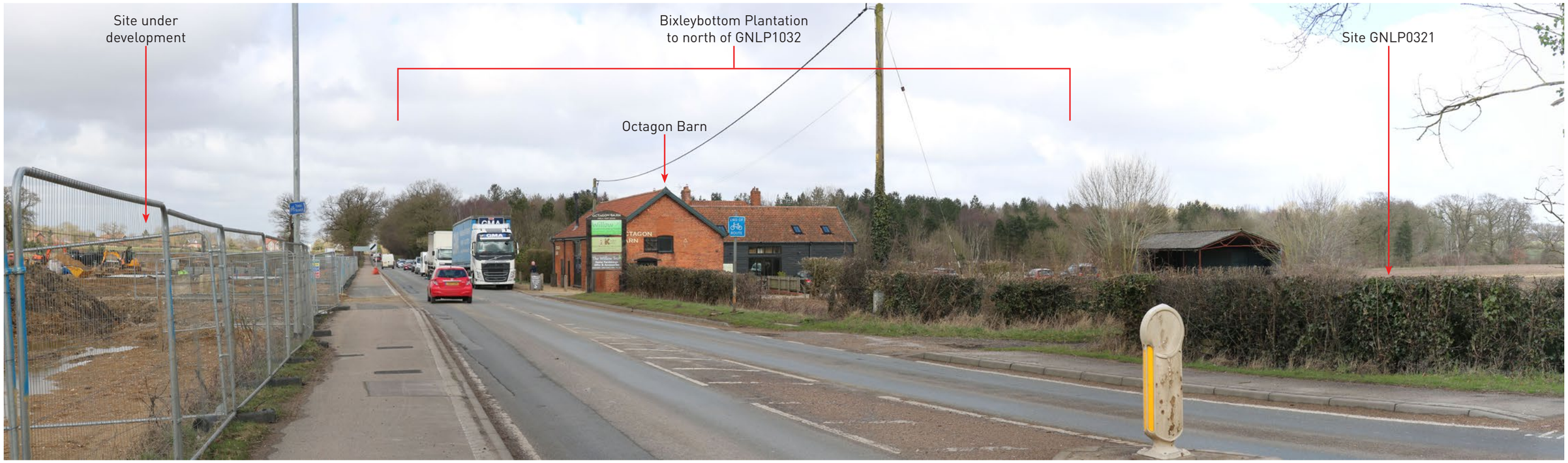
Framingham Earl

Client:	Trustees of Arminghall Settlement		
DRWG No:	**P18-0053_02**	Sheet No: **-**	REV: **-**
Drawn by:	AJH	Approved by:	DRAFT
Date:	22/03/2018		
Scale:	1:10,000 @ A3		

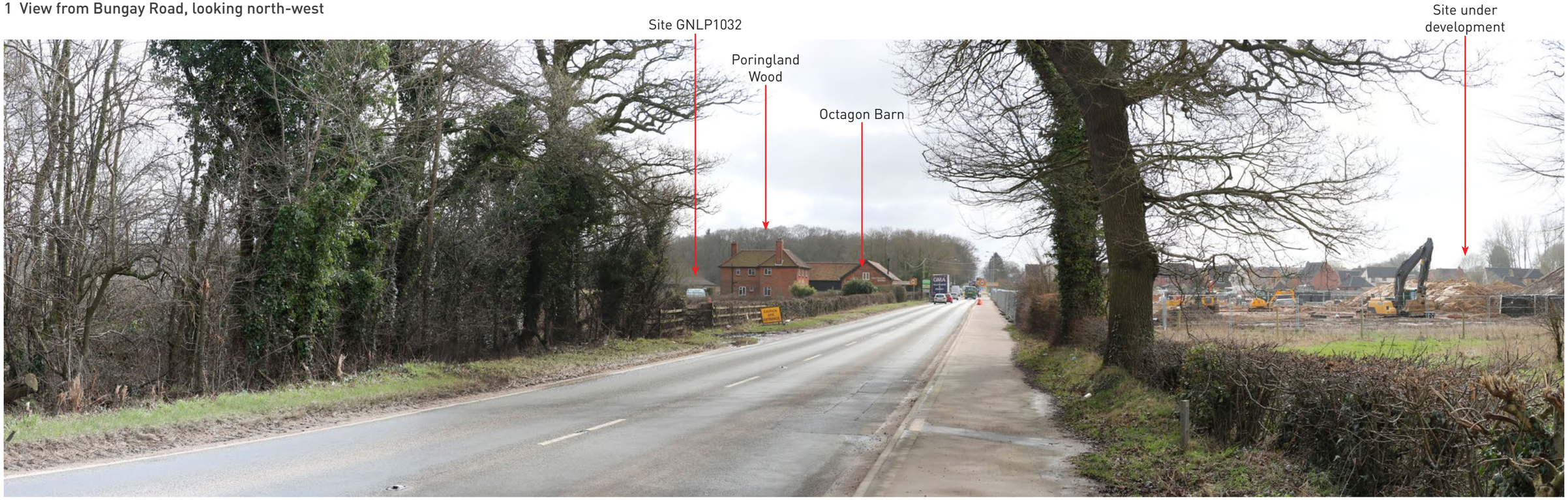
Pegasus Environment

APPENDIX 2

Photoviews



1 View from Bungay Road, looking north-west



2 View from Bungay Road, looking south-east

3 View from Bungay Road, looking at Site GNLP1032

4 View from Arminghall Lane, looking south-east

5 View from Bungay Road, looking at Site north-east

APPENDIX 3

Extract from South Norfolk Local Landscape Designations Review - Norwich Southern Bypass Landscape Protection Zone

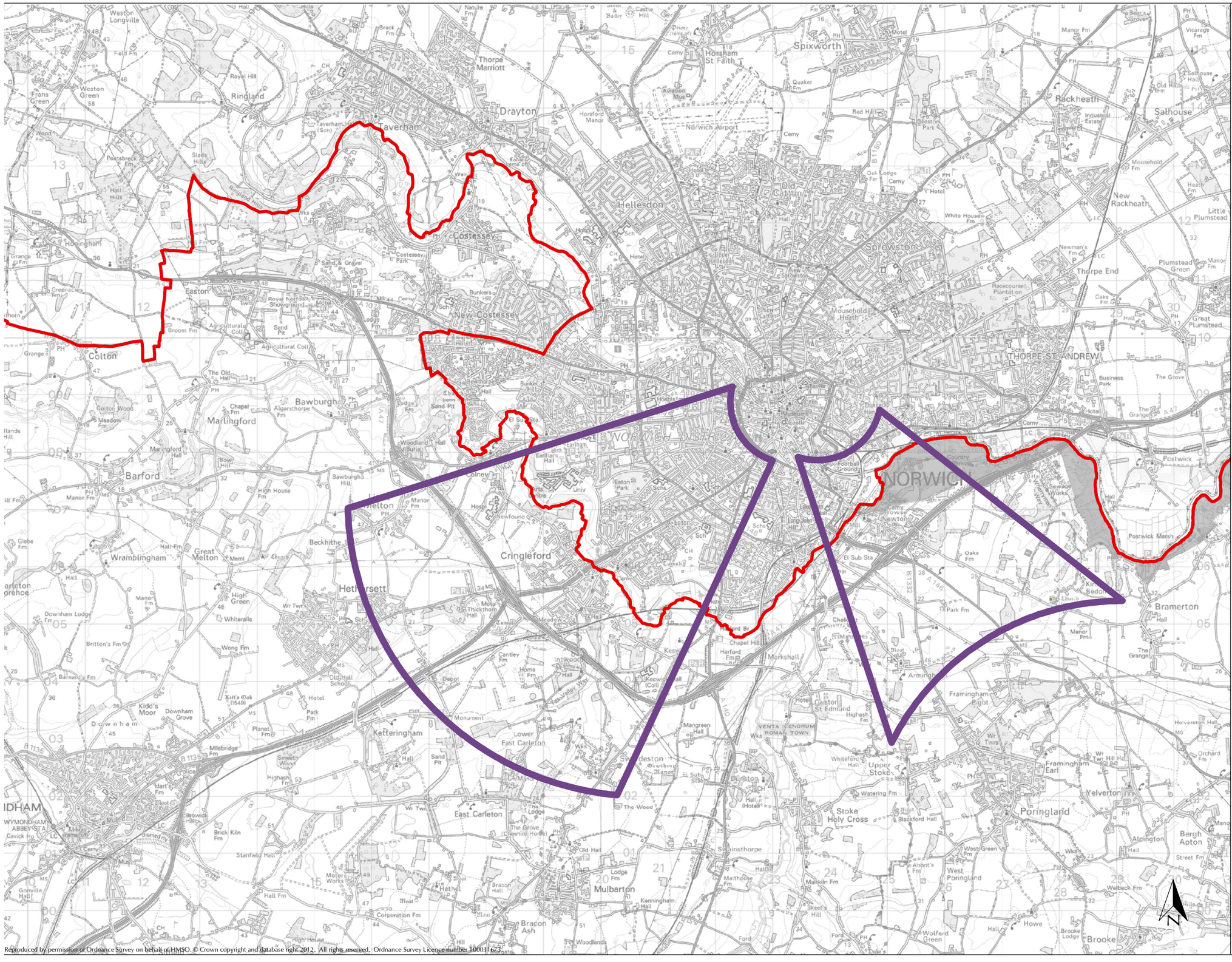
CHRIS BLANDFORD ASSOCIATES
environment landscape planning

South Norfolk Council

South Norfolk Local Landscape Designations Review

Norwich Southern Bypass Landscape Protection Zone

November 2012



KEY

- South Norfolk District
- Broads Authority Area
- Viewing Cones/Zones

N

0 0.5 1 1.5 km

CHRIS BLANDFORD ASSOCIATES
environment landscape planning

NOVEMBER 2012

SOUTH NORFOLK LOCAL LANDSCAPE DESIGNATIONS REVIEW

Norwich Southern Bypass Landscape
Protection Zone

FIGURE 5.1
Viewing Cones/Zones
from the Northern Plateau Edge