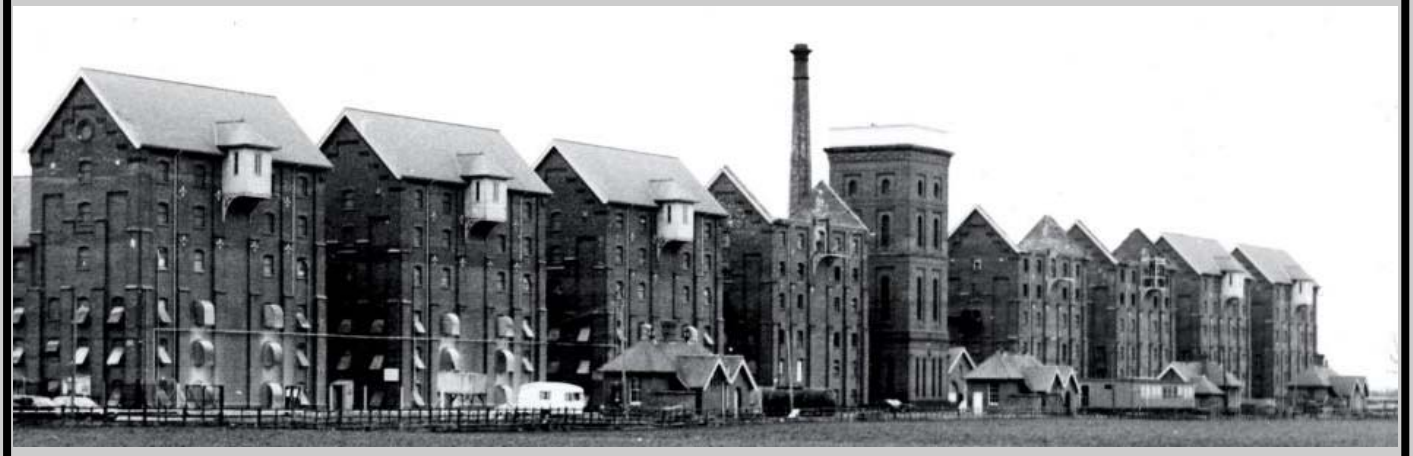
THE BASS MALTINGS, SLEAFORD



APPLICATION FOR PLANNING PERMISSION

BY

THE GLADEDALE SPECIAL PROJECTS DIVISION

ENVIRONMENTAL STATEMENT:
VOLUME 3

ENVIRONMENTAL STATEMENT
VOLUME 3

NON-TECHNICAL SUMMARY

Gladedale Special Projects

December 2008

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1.1 INTRODUCTION

1.1.1 This document provides a non-technical summary of the key findings within the Environmental Statement in accordance with the guidelines contained with the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 1999.

1.1.2 The Environmental Statement accompanies the detailed planning application submitted to the North Kesteven District Council (NKDC) for the comprehensive heritage-led regeneration of the Sleaford Maltings.

1.2 SITE DESCRIPTION

1.2.1 The Site is located to the south-east of Sleaford Town Centre. It is approximately 6.25 ha in area and, as previously identified, contains nine principal ranges.

1.2.2 The malting buildings are Grade II* listed and are considered to be one of the best surviving example of their kind in England. The Maltings buildings were designed by Herbert Couchman, the Chief Engineer for Bass and constructed between 1901 and 1907. The malting use however, ceased in 1959 and the buildings have been continuously used for various purposes since. After a first fire in 1969, a second fire occurred in 1976, in which the barley kiln and barley store of the central block as well as three of the malthouses were severely damaged, although the external walls of the buildings still have structural integrity.

1.2.3 The Site adjoins the railway line to the north and is accessed by a private access road off Mareham Lane. There is residential development to the south west of the site.

1.2.4 The Site comprises a number of parts which include the eight Maltings buildings and a central range containing an engine room, boiler room, water tower, barley kiln, granaries and an artesian well. Additionally, five small single storey detached former mess buildings, which are Grade II listed, are located along the southern boundary of the Site.

1.2.5 In terms of floor areas, each of the eight Maltings buildings have a total floor area of approximately 5,420 m² while the central range comprises 2,800 m².

1.3 PROPOSALS

1.3.1 The proposed mixed use development would comprise a range of activities which can successfully operate alongside and complement each other, whilst preserving the site's heritage.

1.3.2 The applications propose a mixed use development comprising the In detail, the proposed mixed use development would comprise:

- 228 residential dwellings in a mix of apartments and houses;
- 5763 sq m of healthcare facilities;
- 5207 sq m of office floorspace;
- 1391 sq m of retail and commercial floorspace (Use Class A1-A5); and
- 37 sq m of community facilities.

1.3.3 The individual uses proposed are outlined in more detail below:

Residential

1.3.4 Residential is the predominant land use proposed as part of the mixed use development. A total of 228 residential units are proposed, in a mix of apartments and dwelling houses. Residential floorspace is located in

seven of nine of the Maltings buildings (not Blocks 1 and 5), in the messrooms (Buildings 10, 11, 13 & 14) and in the new build element of the scheme to the East of the Site. These different elements are detailed below:

1.3.5 The former Maltings buildings will provide 204 of the proposed residential units, and all of the apartments. The scheme would also comprise a new build residential element to the East of the Maltings buildings, comprising 24 two, three and three and a half storey dwelling houses. The accommodation would provide 24 four bedroom houses.

1.3.6 The viability of the scheme depends on allowing this new build facilitating development to offset the enormous cost of the heritage led regeneration of the listed buildings. As detailed in the Planning Statement, the development is considered to be in general conformity with the relevant development plan policies. Notwithstanding this, the case for the proposed 24 new dwellings, outside of the Sleaford settlement curtilage, is made in accordance with English Heritage Policy Statement 'Enabling Development and the Conservation of Heritage Assets', and the planning application includes the necessary documentation to support this case.

Health

1.3.7 The application proposes 5763 sq m of healthcare floorspace, which would be located in Blocks 5, 6 and 7. The northern parts of Blocks 6 and 7 are proposed to be used as a new Healthcare Centre. This would provide a wide range of facilities including a number of health suites, physiotherapy, podiatry, dental surgeries, a pharmacy and a minor operations room. In addition, the northern part of Block 5 would comprise ancillary offices which would serve the Healthcare suite.

Retail and Commercial Floorspace

1.3.8 The scheme proposes 1391 sq m of retail and commercial floorspace (Use Class A1-A5), which would be located in Blocks 4, 5, 6 and 7, predominantly at ground floor level.

Office

1.3.9 The scheme proposes 5,207 sq m of office floorspace to be located in Blocks 1 and 4. Block 1 is the best preserved of the eight malthouses within the complex. The block is proposed to be converted into offices with a total floorspace of 4,754 m². The conversion of the building to offices will enable the structure to be preserved. Open plan office space will be provided to avoid the subdivision of the internal area. Block 1 has also been identified as the most appropriate to assemble and house the moveable industrial heritage associated with the Maltings process. The existing window openings pattern is also being retained and windows renewed to provide a basic level of energy conservation and weathertightness.

Community Use

1.3.10 The central mess-room (Block 12) will be used as a community hall to promote the Maltings through interpretation signs and other exhibits. It will also be available for hire by local community groups. This conversion will not result in any significant change to the building.

Public Spaces

1.3.11 Demolition of the historic buildings is limited and will affect blocks 4, 6 and 7 where new public courtyards will be created in the most severely

fire damaged areas. The demolition will not remove the walls completely but leave part of the lower storeys at various heights so that the former footprints of the buildings are clearly visible within the landscaping and external works treatment. The courtyards are a key proposal within the scheme, as they will achieve improved access to sunlight, good quality amenity space and a sense of place aided by the A1 (retail) and A3 (café/restaurant) active frontages. They also break up the unremitting pattern of alleys between each building which could create an inhospitable wind tunnel environment for a mixed use scheme of the type proposed.

1.3.12 Other public areas of open space include an Ecological Area proposed to the North East of the site, and open space and play area within the new residential development to the East of the Maltings buildings.

Car Parking

1.3.13 There are 804 car parking spaces proposed as part of the Development. A total of 159 parking spaces per Block would be created in Blocks 2 and 8. The new build part of the Development includes a two level car park proposed to be built in the north-eastern part of the Site. The car park will provide 290 parking spaces. In addition, there is a limited level of ground level parking proposed. 1 car parking space would be provided in the curtilage of buildings 10, 11, 13 and 14; 143 car parking spaces would be provided close to the perimeter of the site and 51 spaces in small courtyards within the new build residential area to the East of the Maltings buildings.

Access

1.3.14 Access to the site would be as existing along the right of way leading from Mareham Lane. No works to the access road or entrance are proposed as part of this application. The mixed use development is in a sustainable location for these uses, and would complement the existing town centre. The site is easily accessible by foot from the town centre and accessible by public transport.

Construction and demolition

1.3.15 The programme of demolition and construction would span approximately 5-6 years. The demolition and construction works will be completed in eight phases:

- The first phase will general remedial works to the building envelope such as re-roofing and elevational repairs;
- Phase 2 will involve the reconversion of blocks 5, 6 and 7 to healthcare use and phase 3 to residential and retail uses;
- Phase 4 will involve enabling work for the new build housing;
- Phase 5 the reconversion of Malthouses 8 and 9 and the purpose built car park;
- Phase 6 the reconversion of blocks 2, 3 and 4;
- Phase 7 the reconversion of block 1 and finally;
- Phase 8 the reconversion of the mess rooms.

1.3.16 Working hours will be agreed with the Local Authority Environmental Health Department and are envisaged to be:

- Monday to Friday 08.00 - 18.30; and
- Saturday 08.00 - 13.00.

1.3.17 The Contractor would be a member of the national Considerate Constructor's Scheme and adhere to an Environmental Management Plan (EMP) which would be agreed with NKDC. The EMP would provide a method of managing the demolition and construction works. It would outline methods for liaison, hours of work, methods to deal with complaints, and outline management practices to control noise, vibration and dust, traffic and access, waste, water resources, ecology and archaeology ensuring a high level of control throughout the demolition and construction phase.

1.4 SUMMARY OF THE ENVIRONMENTAL EFFECTS

Landscape

1.4.1 Development, which will involve the renovation and conversion of the Maltings buildings for residential, healthcare, retail and commercial uses, the inclusion of 2, 3 and 3.5 storey residential properties with associated public landscaping and private gardens and provision of parking together with some open space, will have an overall minor positive residual effect on the local landscape character.

1.4.2 Public views from the north into the Site are obstructed by the existing built form and this will continue to obscure most views of the Development from this direction following its completion. The views from the south are open and long ranging. Retaining existing vegetation and landscape planting along the southern boundary of the Site will provide some screening for surrounding properties and public roads whilst maintaining long views from the south and south-east.

1.4.3 The overall landscape character of the Site will not be dramatically altered due to the retention of the existing listed buildings on-site. The preservation of such landscape features will ensure that the landscape character remains although the setting of the listed building will alter slightly with the

introduction of the proposed two level car park and 2, 3 and 3.5 storey houses.

1.4.4 Mitigation measures which will be implemented to ensure the Development remains as unobtrusive as possible and minimises changes in the current landscape character including: ensuring the facades are renovated to an excellent standard and refurbishment based on a high quality design, and use of high quality construction materials. These measures will ensure the character of the area is not affected in a detrimental manner. The retention and refurbishment of the listed buildings and retention of key landscape features (such as the pond along with existing vegetation and trees) will help to maintain the character of the area and soften long range views of the Development (particularly the proposed car park and proposed new properties) from the south. Following mitigation the operational activities will result in an overall minor positive impact on the landscape character, local viewpoints and Local Nature Reserves.

1.4.5 The construction works associated with the Development are likely to be considerably more intrusive than the completed scheme and this is attributable to the following:

- Localised demolition, material stockpiles and earthworks;
- Site signage, traffic control (pedestrian, vehicular and plant), fencing, hoarding and overhead gantries;
- Construction traffic and working machinery on the narrow and infrequently used access road;
- Site huts, storage units and stored materials;
- Cranes; and
- Scaffolding, hoardings and partly completed façades.

1.4.6 Following mitigation the construction activities will result in an overall minor negative impact, although the activities will be phased over approximately 6

years and only certain areas of the Site will be subject to these activities at any one time.

Built Heritage

1.4.7 The Development has taken into account the Revised Conservation Statement, prepared by Kathryn Sather and Associates, which provides considerable detail on the significance of the built heritage at the Maltings site. The Development is also the product of much consultation and team working and has sought to devise a scheme that will have as great a chance as possible of being viable, but also one that has as limited an impact on the overall character of the listed buildings as possible. The massing of the blocks and their essential detail will be unchanged so externally, from distant views and in key near views the buildings will retain their original character. Although substantial change is proposed, the buildings and Site are considered capable of withstanding such change while retaining their Grade II* listed status and still telling the story of the Malting process. The impacts on each receptor are summarised in the table below:

Table 1: Built Heritage Impacts

Sensitive receptors	**Impact**	**Mitigation**	**Residual Impact**
Complex	Introduction of uses which do not reflect the original industrial process	The proposals will bring the buildings back into economic use, which will ensure their survival.	Major beneficial
Setting	Irreversible alterations	The massing of the blocks and their essential detail will be unchanged so that their original character will be preserved from distant views and key close views.	Minor adverse

Setting	New build two storey car park and enabling works	Landscaping and minimise height of new building	Negligible adverse
Malthouse block 1	Office Conversion	The malting related machinery will be re-assembled and the floors will be kept undivided	Minor adverse
Malthouse block 2	Car parking Conversion	Limit signage and make entrance and exit discreet. No mitigation for internal alterations	Major adverse
Malthouse block 3	Residential conversion: subdivision of the interiors increased window provision	Sensitive design and new windows legible as a new intervention; containment of services internally	Moderate adverse
Malthouse block 4	Residential and commercial/restaurant conversion	Retention of low walls on the side of the courtyards will maintain some visual links along the whole length of each block	Minor adverse
Malthouse block 5	Residential, Commercial & Health Conversion	Preservation of the main elevation to the south; unobtrusive signage	Minor adverse
Malthouse block 6	Residential Health & Commercial conversion	Retention of low walls on the side of the courtyards will maintain some visual links along the whole length of each block; Preservation of the main elevation;	Minor adverse

		unobtrusive signage	
Malthouse block 7	Residential Health & Commercial conversion	Retention of low walls on the side of the courtyards will maintain some visual links along the whole length of each block; Preservation of the main elevation; unobtrusive signage	Minor adverse
Malthouse block 8	Car parking conversion	Limit signage and make entrance and exit discreet. No mitigation for internal alterations	Major adverse
Malthouse block 9	Residential conversion: subdivision of the interiors increased window provision	Sensitive design and new windows legible as a new intervention; services contained internally	Moderate adverse
Mess rooms	Conversion into dwellings	Sensitive design of the addition (lower and in a different style)	Negligible
Mess rooms	Conversion to community use	Provide opportunities for interpretation in the community building	Minor beneficial

1.4.8 Whilst there are some adverse residual impacts following development, the overall residual impact on the Grade II * Listed Building Complex is Major Beneficial, given that the proposals will bring the underutilised buildings back into economic use and ensure their long term survival.

Archaeology

1.4.9 The survival of archaeological features within the footprint of the Site is likely to have been limited by the development of the Bass Maltings. However, there is the potential for archaeological remains to survive within the grassed area in the eastern part of the Site. Impacts to any archaeological deposits in this area may be caused by construction of the new residential units and basement construction for the car park (including piling).

1.4.10 In accordance with policies HE2 and HE3 in the North Kesteven Local Plan, provision needs to be made for a programme of archaeological investigation and recording prior to the commencement of the Development.

1.4.11 Mitigation proposals to be secured by a PPG16 planning condition include trial trenching of the proposed area of the new residential units and the new car park, and monitoring of demolition and minor new build within the main Maltings complex. The residual effect is considered to be Minor Negative.

Ground Conditions

1.4.12 The Site is considered to be of major environmental sensitivity due to:

- The surrounding residential and agricultural land use;
- The surface water pond located in the southeast of the Site;
- The underlying Minor Aquifer;
- The underlying groundwater Source Protection Zone 2.

1.4.13 The main potential sources of soil and groundwater contamination relate to the historical use of the Site, and include the Made Ground particularly in the Eastern End of the Site, existing ground contamination and fuel and chemical

storage. Levels of contaminants above relevant Environment Agency Soil Guideline Values and Threshold Target Values (TTVs) have been identified in Made Ground, natural soils and groundwater in intrusive investigations undertaken at the Site and are summarised as follows:

- Diffuse arsenic contamination across the Site in Made Ground and natural soil;
- Hotspots of lead contamination in the Made Ground and natural soil beneath the Western End of the Site and within the bunds within the Eastern Part of the Site;
- Benzo[a]pyrene contamination within the 'man-made' ridge adjacent to the southern boundary of the Eastern End of the Site; and
- Mercury contamination within the groundwater beneath the Eastern End of the Site.

1.4.14 As the existing hard cover in the Western End of the Site is to be maintained or replaced as part of the Proposed Development, risks to human health posed by the elevated levels of contaminants would be prevented. Based on this and the results from the Enviros Consulting and WSP site investigations no remedial measures are required.

1.4.15 The construction of a two level car park within the Eastern End of the Site would also provide a barrier that would prevent a human health risk, as well as removing contaminated materials during the construction works. This should be carried out prior to the construction of this phase of the development.

1.4.16 However, residential end users in this part of the site will potentially be at risk. Therefore, in the Eastern End of the Site the following remedial measures should be implemented:

- The bunds/mounds, the likely source of mercury that has been detected within the groundwater, should be removed. This should result in levels of mercury returning, to acceptable levels;
- The man-made ridge that runs along the southern boundary contains elevated levels of benzo[a]pyrene and therefore should be removed; and
- A cover system meeting required standards should be applied to a depth of at least 600mm in any gardens and areas of soft landscaping in the residential area. This is not required where roads, buildings and the car park create a barrier preventing a human health risk.

1.4.17 If all the remedial strategy and identified mitigation measures are implemented, adverse effects on sensitive receptors during construction would be reduced to minor adverse at worst. In the long-term the Development would help to minimise soil and groundwater pollution and will promote sustainable regeneration of a brownfield site. The operational impacts of the Development would be moderate positive.

Water Resources and Flood Risk

1.4.18 An assessment has been undertaken to determine the potential effects of the Development on flooding, drainage, surface water quality and surface water resources. The potential effects are summarised as:

- Temporary construction phase impacts including contamination of surface water resources and increase in localised flood risk;
- Alteration of the surface water drainage regime (and associated effects, including changes in discharge rates and flood risk);
- Increase in water demand; and
- Increased pressure on the foul sewerage network.

1.4.19 Based on the findings of previous investigations and site observations (referring to the FRA), the existing drainage regime on the Site for surface water (including existing areas of hardstanding and roofs of the buildings) is assumed to drain to the pond in the east of the Site which is assumed to act as a large soakaway to groundwater.

1.4.20 Suitable mitigation measures are in place to prevent any temporary or permanent deterioration of the on-site pond and groundwater beneath the Site.

1.4.21 The proposed built area on the Site is located in Flood Zone 1 and has no associated flood risk. The implementation of SUDS will accommodate increased surface water run-off associated with the new areas of hardstanding and ensure the overall flood risk is negligible.

1.4.22 Water conservation measures will be considered to reduce the volume of water used during operation and therefore minimise the amount of wastewater requiring treatment. Measures recommended include water efficient appliances and sanitary fixings, as well as rainwater harvesting.

1.4.23 Anglian Water have indicated that they can supply water to the Site and that they can accommodate foul drainage from the Development within the existing sewerage system.

1.4.24 Following the implementation of the recommended mitigation measures, no significant residual effects in terms of flooding, drainage, surface water quality and surface water resources are anticipated during either construction or operation.

Ecology

1.4.25 The Site contains a range of habitats that are of varying value to wildlife. These include two habitats of local importance (i.e. open water and semi-improved grassland) and one habitat (i.e. Buildings) that depending on the results of the ongoing further bat surveys, could be of local, District or greater importance. The Site contains three protected species/protected species groups; the reptiles and notable bird species are of local importance and (depending on the results of the proposed further surveys) the bats are of value at the District level or higher.

1.4.26 The scale and nature of the Development means that there is the potential for significant negative ecological impacts. However, through detailed ecological input into the scheme design and recommendation of mitigation/avoidance measures it has been possible to either eliminate or reduce these impacts such that the Development will result in only a small number of negative residual impacts of local or District significance that would be unlikely or extremely unlikely to occur. The creation of darkened flight corridors which will enhance the existing flight paths and connectivity from the roosts to the wider landscape and foraging areas for bats is a positive design feature of the scheme that would offset habitat loss and operational phase lighting impacts. Also the scheme will provide bat roosts in car parks and basements. Further details on the individual species is provided below.

Bats

1.4.27 In summary, results from the bat surveys conducted at The Bass Maltings show that the Site is used by foraging, commuting and roosting bats. At least four different species of bat have been recorded within the Site. The national conservation status of the majority of the bat species present at The Maltings

are regarded as nationally common. It is possible though that recordings made at the Site could include the species of Myotis, which are less common. Since a full assessment of summer roosting by bats on the Site has not yet been undertaken, a precautionary approach has been adopted in determining the value of the Site for bats. As such, for the purposes of this Ecological Impact Assessment, a preliminary value of District importance is assigned to the bat species found on site. This is the maximum likely value and it may be possible to revise this value following further field surveys in 2009.

1.4.28 After completion of the further survey works, detailed and appropriate mitigation measures will be implemented to ensure that there is no net loss of roosting opportunities and therefore no significant negative residual effects on the local bat population. Mitigation measures could include the following: Prior to any works on-site alternative roost sites couldl be made available for bats, in the form of bat boxes and as a supplement to other forms of mitigation for a wider mitigation scheme, for example purpose built standalone roosts or designing roosts into new built roof spaces (this is dependant on the roost type and number of bats using the roost). For the Development it is envisaged that a dedicated hibernation area will be built into the subterranean granary area of the Maltings Building 9. Dedicated summer roosting areas could also be built into the roof space of the granary section (northern section) of the Maltings Building 9, facing the railway line Furthermore, four bat boxes of varying design could be installed in trees surrounding the existing pond to provide interim mitigation during the construction phase.

1.4.29 To ensure that bats are not harmed during site clearance and demolition/renovation works, the works will be carefully planned. Timing of works to key areas of interest to bats (informed by evidence of droppings found to date and by the emergence and activity survey results) will be scheduled to avoid the bat maternity season (May – August).

1.4.30 The lighting design prepared during the detailed design stage will take into account the ecological constraints and sensitivities associated with the Site and the surrounding area. Mitigation measures could include keeping light levels low where practicable; providing shades and cut-off filters and fitting timers in order to automatically switch off lights close to particularly sensitive areas of the Site (e.g. alternative bat roosts) when continuous lighting during the night-time period is not essential. These measures will reduce light spill and maintain darkened areas of the Site especially around roost entrances. The adoption of mitigation measures will minimise the effects of impacts of lighting on bats. Therefore, a negative impact, significant at the District or any other level would be extremely unlikely.

Badgers

1.4.31 The monitoring surveys undertaken within the rough grassland in 2007 noted the absence of badger on the Site. This species is not considered further in the impact assessment and has not been assigned a value.

Reptiles

1.4.32 Reptile surveys undertaken from August to October 2007 confirmed the presence of a low population of common lizards in the area of grassland to the east of the Maltings Buildings. Common lizards are known to be common in Lincolnshire and are found in almost all habitats with grassy banks and bare areas. Therefore, the population at the Maltings is assigned a Local value.

1.4.33 A capture/ translocation programme will be carried out following best practice guidelines in order to minimise the risk of death or injury to reptiles present within the grassland. This programme will cover the entire area of semi-improved grassland, including an additional strip of grassland in the far east of the Site. Prior to the capture and translocation programme a suitable

receptor site will be identified. This site will be local to the Development Site, if possible, and will not currently support a population of common lizards.

1.4.34 Enhancement of the receptor site will take place prior to the translocation exercise, if necessary to create suitable reptile habitat. These enhancement measures could be achieved through incorporation of suitable basking and hibernation features (e.g. rock piles, debris and piles of dead vegetation), creation of south facing slopes and provision of a water body within the site. Other enhancement measures include management of the remaining grassland habitat in the east of the Site to provide a range of features of potential value to reptiles, such as a variety of patchy areas of varied substrates to include sandy and stony bare ground and sparsely vegetated ground.

1.4.35 It is anticipated that by selecting a suitable local receptor site and translocating the reptiles to this site in accordance with best practice guidelines, there will be an impact at the Site scale (through reduction in area of habitat suitable for reptiles). There would however be no significant impact on reptiles at the local level through the establishment of a receptor site, managed for the benefit of reptiles with management action informed by regular monitoring.

Great Crested Newts

1.4.36 GCN is a priority species under the UK BAP and is declining slowly. There is no evidence that suggests this trend is occurring in Lincolnshire and GCN appear to be relatively widespread in the County. A survey carried out by Lapwings Consultants in 2005 confirmed the likely absence of GCN at the Site and as conditions at the Site have not changed since completion of the survey this species is not considered further in the impact assessment and has not been assigned a value.

Bird Species

1.4.37 The breeding species-list for the whole Site recorded during the breeding bird surveys in May and June 2008 numbered 25, which is considered to be of Local Importance.

1.4.38 None of the species recorded on the Site can be considered especially rare or unexpected (but please note there is also to the Confidential Appendix). They are a typical selection of birds to be found in this type of mixed habitat in this region.

1.4.39 The main demolition / refurbishment works will be ongoing for approximately 9 months (with the works scheduled to take 5 to 6 years in total) and therefore it will not be possible to carry out all works, building demolition or scrub clearance activities outside the bird breeding season which generally runs from March to August inclusive (although some species, such as feral pigeons, may still be breeding into October). Any scrub and trees which remain will have their suitability for breeding birds decreased through the use of 'buzz tape' where appropriate. If any scrub, trees or buildings are to be removed during the breeding season, a nesting bird survey would have to be carried out immediately prior to any tree removal, building demolition or scrub clearance to confirm that birds are not breeding in any trees, scrub or buildings that are going to be cleared or demolished. If birds were found to be breeding then no clearance activities would be possible until young birds have fledged from the nests and the nests should be protected with a buffer zone from any activities which may cause disturbance.

1.4.40 Supplementary planting of native trees and scrub will be incorporated within the Development to minimise any negative effects arising from habitat loss Planting will be undertaken within the retained strip of grassland around the pond, the play area near the new build housing and around the proposed car park. In order to compensate for loss of nesting habitat for birds, bird boxes

will be incorporated onto the buildings and within suitable areas in the Development.

1.4.41 Due to the large number of house martin nests which exist on the Site, this Amber List bird is likely to undergo the most disturbance. Therefore, the external eaves of the current buildings will be incorporated into the Development, where possible. Furthermore, specifically designed artificial house martin nests will be provided in suitable locations on the new buildings to encourage this species back to nest following the construction phase.

1.4.42 It is certain that any effects of construction outside the breeding season would not contravene the Wildlife and Countryside Act 1981 (as amended) and that with the mitigation in place works at other times would also be legally compliant. There would be no significant residual effect at any scale on breeding birds from this and from the loss of bird nesting habitat.

Transportation and Access

Overall Traffic Summary

1.4.43 The Table below provides an overall summary of baseline conditions, impacts associated with the re-use of the permitted use and the proposed development. The table then summarises the residual impact for each of the assessment criteria.

1.4.44 The provision of some minor improvements will help reduce any adverse development impacts. In summary the development impact, in traffic terms can be characterised as permanent negligible negative impact.

Table 2: Summary of Traffic & Transport Effects

Description of Likely Significant Effects	Significance of Impacts		Summary of Mitigation / Enhancement Measures	Significance of Residual Effects	
	(Major, Moderate, Minor, Negligible)	Positive/ Negative		(Major, Moderate, Minor, Negligible)	Positive / Negative
Operation					
Severance: Difficulty/delay crossing roads	Negligible	Negative		Negligible	Negative
Pedestrian Amenity: Quality of walking environment	Negligible	Negative	Increased pedestrian activity enhancing personal safety	Negligible	Negative
Driver Stress & Delay: Changes in speed, congestion & delay	Negligible	Negative	Reductions in the number and length of vehicle trips through Travel Plan	Negligible	Positive & Negative
Accidents & Safety: Changes in personal injury accidents	Negligible	Negative	Traffic increases Reductions in vehicle speeds enhancing road safety	Negligible	Positive

1.4.45 The specific impacts are discussed in more detail below.

Temporary Traffic Impact during Construction

1.4.46 It is assumed that NKDC will impose a condition to restrict working hours of the development construction and may also impose a routing agreement for construction traffic over 7.5 Tonne on London Road and Mareham Lane (south of the site access). It is expected that these conditions will limit associated construction vehicle movements to specified hours. The developer Gladedale Special Projects Division endeavours to take a responsible approach to development and will appoint a 'considerate contractor' to

undertake the development. The contractor will therefore be obliged to avoid peak hours and school periods for the majority of deliveries, which will be prioritised to inter-peak periods. These periods have yet to be finalised with all consultees but are likely to cover the period of 09:30 to 15:00 hours.

1.4.47 With clearly defined routings there should be no residual effects on the rural roads around the site. There will however be very small percentage increases on the A15/17. As traffic flows are relatively light on the B1517 the increase in HGV traffic is unlikely to be material across the day although the nature of construction is likely to ensure that these impacts are experienced over a short period on the primary roads into the site. These will result in a temporary negligible negative impact on these roads.

Severance Impact

1.4.48 The levels of severance (difficulty/ delay crossing the road) on rural links, is in most cases classified as slight or moderate. Whilst the site access road will experience the greatest impact, severance will remain slight. The greatest change is on Mareham Lane.

1.4.49 Permanent negative impacts on severance have been identified as negligible in most cases. The severance impacts are generally negligible, thus taking account of the development viability, no mitigation measures have been identified. In the absence of positive mitigation. measures the residual situation is likely to remain negligible and can therefore be classified as permanent negligible negative impact.

Pedestrian Amenity Impact

1.4.50 Whilst the Development will add to the traffic flows in Sleaford the scale of change is typically less than 10%. Traffic flows increase by more than 10% on the site access road, Mareham Lane, on part of Grantham Road and London Road, in these locations the footway network is already or will be of

an average or good standard. We have therefore classified the development impact as a permanent negligible negative impact. Taking account of the development viability and the negligible negative impact no highway improvements have been identified. The residual effect is therefore likely to be a permanent negligible negative impact.

Driver Stress and Delay

1.4.51 Driver stress conditions are not material within the study area. The only appreciable changes are expected to occur on the site access road and Mareham Lane where the impact could be classified as permanent negligible negative impact.

Accident and Safety

1.4.52 The roads within the study area will experience some increases in traffic flows resulting in lower speeds. In the absence of any improvements the residual effect is likely to be a permanent negligible positive impact.

Air Quality

1.4.53 A qualitative assessment of the potential impacts on local air quality from construction activities associated with the Development has been carried out. This showed that during site activities releases of dust and PM_{10} are likely to occur. However, through good site practice and the implementation of suitable mitigation measures, the impact of dust and PM_{10} releases will be reduced and excessive releases prevented. The impact of the Development during construction is considered to range from minor adverse to negligible.

1.4.54 In addition, an assessment of the potential impacts during the operational phase was undertaken using a computer model to predict the changes in NO_2

and PM_{10} concentrations that would occur due to traffic flows associated with the Development.

1.4.55 The results show that the Development is predicted to cause a small increase in pollutant concentrations at the majority of receptors but would not cause any exceedences of the statutory objectives set out in the Air Quality Strategy.

1.4.56 According to the assessment significance criteria the impact of the Development during operation is considered to range from minor adverse to negligible for NO_2 and negligible for PM_{10}.

Noise and Vibration

1.4.57 With the adoption of the recommended mitigation measures, it considered the recommended noise limit would be met at all receptors during the construction works. However, due to the unavoidable increase in background noise levels, it is still possible, despite the limit being met, for moderate impacts to occur at the nearest existing dwellings. However, any such impacts would be temporary, intermittent and have no lasting effects.

1.4.58 Due to the limited need for demolition/ breaking-out works, and the anticipated lack of requirement for impact piling, no impacts due to vibration during the construction works are anticipated.

1.4.59 For the majority of the receptors in the vicinity of the Site, noise from the additional road traffic movements generated by the Development will not cause an impact. However, the additional movements on the currently relatively lightly trafficked Site Access could result in a significant increase in noise levels outside the nearest dwellings; and, for reasons discussed in the main EIA report body, the measures available to reduce the potential impact are limited.

1.4.60 However, the overall noise levels are anticipated to remain relatively low, and given that the Site Access is outside of the 'front' of the properties, the noise levels within the properties themselves, and the rear gardens, are unlikely to change by the same margin. Consequently, the residual impact overall is considered to be moderate negative.

1.4.61 Noise from the proposed car park in the north-eastern corner of the Site has been predicted to be relatively limited. Based on a theoretical worst case scenario, and assuming a 1 m parapet wall around the top floor of the car park and a 50% open area for the ground floor façade, a minor impact was predicted at the next existing dwellings, whilst a moderate impact was predicted at the nearest proposed dwellings.

1.4.62 In order to reduce the noise impact at the existing dwellings, it was found that increasing the height of the parapet wall to 1.5 m would be sufficient to reduce the impact from moderate to minor negative; which, given the worst case basis for the assessment, is considered to be sufficient.

1.4.63 Suitable noise limits have been presented which should be used to control noise from any proposed buildings services plant. Assuming the adoption of those limits, impacts due to plant noise should be, at most, minor negative.

Artificial Lighting

1.4.64 An assessment of the external lighting environment on and in the immediate vicinity of the Site was undertaken as part of the baseline lighting survey. Readings of both illuminance (light spill) and luminance (glare and sky glow) were recorded at key monitoring locations, supported by night time viewpoint images to illustrate the current night time scene, particularly in the vicinity of sensitive receptors including residential properties adjacent to the Site to the southwest and north.

1.4.65 Areas of the Site recorded ambient lighting levels which are considered representative of an E2 Environmental Zone a "low district brightness area", in accordance with criteria outlined in the Institution of Lighting Engineers Guidance Notes (ILE, 2005). For off-site areas the residential areas to the southwest and north of the Site recorded illuminance levels typical of an E2/E3 Environmental Zone, "low to medium district brightness". The agricultural areas to the east and south of the Site recorded illuminance levels typical of an E1/E2 Environmental Zone and Sleaford town centre and the area at the level crossing to the northwest are well illuminated and are considered representative of an E4 Environmental Zone, "high district brightness".

1.4.66 During the construction phase, the principal lighting impacts are likely to be associated with temporary lighting associated with the illumination of temporary car parking areas, the contractor's compound and work areas. In order to mitigate such temporary impacts on surrounding sensitive receptors the lighting requirements at the Site during the construction phase will be appropriately managed in accordance with the requirements set out in the Construction Environmental Management Plan. Installed lighting will comprise well located, modern light fittings which are directionally controlled and will be operated in accordance with current best practice standards and NKDC's requirements. Overall, the residual effect on sensitive receptors during the construction phase will be short term and temporary in nature and of minor negative significance as a worse case.

1.4.67 During the operational phase, potential impacts may arise from the introduction of new artificial light sources as part of the Development, resulting in changes to the current baseline ambient lighting conditions across the Site. The effects on sensitive receptors will be mitigated through the application of a sensitive lighting design involving the installation of low light pollution fittings which retain light spill within the Site boundary, and

minimise the loss of light to the night sky, glare and discomfort to on-site or neighbouring receptors. Landscape screening and the height and orientation of the Maltings Buildings will assist in filtering and screening residual light spill and glare. Overall, the residual effect on sensitive receptors during the operational phase is considered to be of minor negative significance (worse case) when compared to the existing unlit conditions on the Site.

1.4.68 Following the implementation of the appropriate mitigation measures outlined above, the Development will comply with the relevant policies, British Standards and best practice guidance in relation to external lighting and light pollution. In order to comply with the relevant planning guidance and relevant policy at a national, regional and local level, the Development will use the minimum amount of lighting necessary to provide a safe and secure environment for users of the Site, without affecting the local amenity (including adjacent residential properties), the safety of road users (both existing and future), the visibility of the night sky, ecological species sensitive to changes in ambient lighting levels and the setting of the listed buildings. It is anticipated that the implementation of a lighting design in accordance with current best practice guidance, during both the construction and operational phases, will ensure that the potential effects from light spill, glare and sky glow on sensitive receptors both on-site and in the surrounding area are minimised and reduced to acceptable levels.

Daylight, Sunlight and Overshadowing

1.4.69 The results of the daylight, sunlight and overshadowing assessments have to be considered in the context of an existing complex of listed buildings of national heritage value. For example, the sunlight criteria requires that at least one main living room window should be facing 90^{o} of due south. However, due to the existing nature of the buildings, this criterion cannot be met. A summary of the results is presented below.

Daylight

1.4.70 All proposed habitable rooms within the nine Maltings buildings were subject to a detailed interior daylight calculation based on the Average Daylight Factor (ADF). The ADF is the measure of the amount of daylight in a room.

1.4.71 The ADF calculations showed that 298 of the 592 habitable rooms in the nine buildings assessed do not comply with the minimum daylight levels set for the ADF.

1.4.72 Windows which fall below the criteria are located within all nine of the Maltings buildings and on both the western and eastern facades. Blocks 1 and 8 contain the highest percentage of windows which are below the guidance levels.

1.4.73 Following completion of the assessment various measures have been integrated within the scheme design to increase the amount of daylight. These include providing roof lights to upper levels of the buildings, changes to the window design, modifications to the internal layout of residential units and increasing the size or number of windows where practicable. However, there are limitations as to the design changes that can be made due to the heritage value of the buildings and the design concept for the Site which will ensure that the integrity of the historic value of the buildings and the Maltings complex as a whole is retained.

Sunlight Studies

1.4.74 The sunlight assessment conducted on the 174 qualifying windows within the Development show that 169 windows comply with the BRE criteria for sunlight.

1.4.75 Five windows facing south in the northern section of Block 5 fall below the recommended guidance levels for the probable sunlight hours for winter. This is primarily due to the small distance between the northern and southern sections of Block 5 and the orientation of the buildings which obstructs the sun. The main mitigation measure would be to increase the distance between the northern and southern sections of Block 5. However this is not achievable due to the heritage value of the buildings and the building complex as a whole.

Overshadowing

1.4.76 The results of the overshadowing assessment for open spaces indicate that all three public courtyards within the Development meet the recommended standards for solar access to open spaces.

Wind Environment

1.4.77 The aim of the assessment was to evaluate the existing wind environment in and around the Development and to determine the effect of the Development on pedestrian comfort and safety.

1.4.78 The assessment combined the use of computer based wind modelling to quantify wind speeds and predict air flow patterns around the Development and wind data from the nearest suitable meteorological station. The results were compared to recommended comfort and safety standards.

1.4.79 The study compared the existing wind environment at the Site and in the immediate surroundings with the wind conditions likely to be generated as a result of the Development including changes in pedestrian activity.

1.4.80 The simulations of the pedestrian safety scenarios have revealed several areas where concern could potentially arise on Site during strong wind conditions. The sensitive locations are the north western corner, the south eastern corner and at the base of the central water tower (known as Block 5).

1.4.81 These issues arise because the buildings are exposed due to the lack of shelter from the southerly winds; building height also has a negative effect in the case of the central water tower. Lastly the spaces between the Maltings Buildings are relatively narrow and cause accelerations that could lead to excessively high wind speeds.

1.4.82 The impact of the Development on pedestrian safety and comfort can be described as major negative in the southern part of the Development and moderate negative in locations within the north west or south east and between the blocks. The addition of the 24 new houses in the eastern part of the Site is not expected to have a detrimental effect on the predicted wind environment within the existing Maltings Buildings complex.

1.4.83 The pedestrian comfort issues are fewer than for pedestrian safety however the causes are the same. These issues exist at the southern side of the Site as well as at the western side and the base of the central water tower. The main cause of problems at the base of the central water tower is the height of the building which induces a downwash acceleration that could cause discomfort to pedestrians. The additional 24 houses in the eastern part are expected to experience some impact in particular on the two most easterly houses. These would experience the flow coming off the south easterly corner of the Site, resulting in a localised moderate adverse impact on pedestrian safety and comfort.

1.4.84 Mitigation measures have been incorporated into the design of the Development to reduce the incoming flow from the south and north west

and that flowing down the southern facades of the buildings. These measures consist of some form of landscaping and planting along the southern, northern and western boundaries. The effectiveness of this mitigation will depend on the form of landscaping and planting, which will need to take account of the sensitivity of historic and landscape setting and the listed status of the buildings. The planting along the southern boundary could for example comprise a 2m high hedge.

1.4.85 In order to reduce the downwash problem on Block 5 (where a seating area for the restaurant is proposed) it is recommended that pedestrians are diverted from directly approaching the southern facade of the building by the provision of patios or planting where possible.

1.4.86 Assuming the mitigation measures are implemented it would be expected that the wind environment within the Development would be comfortable and safe for pedestrian use in the recommended areas, such that there would be no significant residual impact. This will need to be confirmed by modelling the complete Development proposals as part of the detailed design.

Socio Economic Impacts

1.4.74 Circa between 410 and 439 jobs are expected to be created directly by the operation of the Development and 46 jobs will be indirectly generated or supported by the Development. In addition, circa 30-40 construction jobs are likely to be generated for each of the 8 construction phases over a 6 year period with 3-4 indirectly associated jobs.

1.4.75 Measures are proposed to mitigate the adverse effects of the Development, such as disturbances to local residents during the construction phase. The residual adverse impacts are considered negligible.

1.4.76 The impact of the Development on the local economy is considered minor beneficial during the construction phase and moderate beneficial during the operation. The Development will include a much needed health facility, which is likely to have a moderate beneficial impact on health facilities in Sleaford.

Sustainability

1.4.77 The sustainability performance of the Development is summarised below:

- A CEMP will be developed to improve the sustainability performance of the construction phase of the scheme. This document will contain various measures and procedures including those relating to recycling, waste storage, pollution prevention and green procurement, and will include KPIs. The requirements of environmental legislation will be met and best practice measures implemented as appropriate;
- No constraints associated with changes in levels of noise and local air quality are expected as a result of the Development;
- Water quality will be protected through the implementation of sustainable drainage systems incorporating pollution prevention measures;
- The new build residential units will comply with the requirements of Code for Sustainable Homes Level 3 and designed in accordance with the principles of 'Secured by Design';
- Water efficiency measures will be implemented;
- The Development will result in the reuse of a brown-field site and existing contamination will be remediated where necessary;
- The conversion and restoration of the listed buildings and retention of key landscape features will maintain and improve the overall landscape/townscape character of the Site;

- The listed buildings will be retained, repaired, maintained and conserved although some demolition of fire damaged parts of the buildings will be required;
- The mitigation measures put into place to offset the ecological impacts of the Development will enhance the overall biodiversity on the Site and will strengthen existing wildlife corridors to the wider countryside;
- Opportunities to implement low and zero carbon technologies at the Site have been considered. The preferred option is connection to a proposed off-site biomass power plant that could supply a significant proportion of the Development's energy requirements;
- The conversion of existing buildings will reduce waste generation. Recycling and waste minimisation will be promoted during operation of the scheme;
- The Site is close to Sleaford railway station and bus interchange. The Transport Assessment undertaken for the Development incorporates measures to minimise the use of the private car and encourage walking and cycling. The Site's location within walking distance of the town centre also promotes a live/ work environment in accordance with the principle of sustainable communities. A Travel Plan will be implemented as part of the Development;
- The use of sustainable materials will be promoted through the use of the BRE's Green Guide to Specification and the use of FSC approved timber;
- The Development will provide 228 quality new homes on a brownfield site. A mixture of sizes of units and tenure types will be provided;
- Healthcare facilities will be provided on-site; and
- The Development will create a mix of job opportunities, through the provision of commercial space, healthcare facilities, a community facility, retail units and long-term maintenance of the Site.

1.4.78 Overall the Development will make a positive contribution to national, regional and local policy objectives to implement sustainable

development. A number of sustainability initiatives have been implemented by the Applicant and further opportunities which will improve the sustainability performance of construction and operational phases of the Development have been identified for future consideration during the detailed design stage.

Cumulative Impacts

1.4.87 Overall, the construction of the development will have short-term minor adverse impacts on sensitive receptors. These impacts are considered acceptable in light of their temporary nature and the long-term benefits of the scheme. Almost all residual impacts of the completed development, once the proposed mitigation measures have been taken into account, are beneficial. The inter-relationship between the predicted impacts is limited and overall positive. The strategic impact of the proposed development when view in light of other developments in the surrounding area is also considered beneficial.

1.5 CONCLUSIONS

1.5.1 The Environmental Impact Assessment has identified that the adverse impacts during the construction period will be limited to relatively short periods.

1.5.2 The EIA has enabled the identification of adverse residual impacts which arise as a result of the proposals and to allow further mitigation to be identified where necessary and appropriate. With mitigation, the proposed development will have beneficial impacts on most sensitive receptors identified in the ES.

Table 3 – Impact summary

Sensitive Receptors	Construction Impact & Significance	Operational Impacts & Significance
Historic Character and Setting	Minor temporary adverse	Major beneficial impact
Archaeological remains	Minor adverse	None
Landscape and visual character	Negligible to minor adverse impact	Negligible to moderate beneficial impact. Minor negative effect on night time scene
Future residents of the Development	Negligible impact	Minor adverse noise impact. Negligible effect on glare and light spill.
Pedestrians On Site	Negligible wind impact	Negligible wind impact
Ground Water	Moderate beneficial impact	Moderate to Major beneficial impact
Ground Conditions	Minor temporary adverse impact	Moderate Beneficial impact
Surface Water	Minor temporary adverse impact	Minor beneficial impact. Negligible impact (risk of flooding)
Water Resources and Foul Sewerage Capacity	Negligible to minor temporary negative impact.	Negligible to minor negative impact
Air Quality	Negligible to minor temporary adverse impact.	Negligible to minor adverse impact
Dwellings on the Site access and Other Neighbouring Dwellings	Negligible impact (noise).	Negligible to Moderate adverse impact (noise and vibration). Negligible to minor adverse impact (artificial light).
Ecology and Nature	Negligible impact	Negligible impact
Traffic	Negligible impact	Negligible adverse

		impact
Local economy	Negligible to minor beneficial temporary impact.	Beneficial moderate impact.

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