

## Habitats Regulations Assessment (HRA)

<b>Application reference:</b>	20/01716/FUL
<b>Application address:</b>	University Air Squadron 1A Bugle Street Southampton SO14 2AL
<b>Application description:</b>	Change of use of existing offices (use class B1) to form mixed use event spaces and wedding venue (sui generis) and 7 no. hotel guest bedrooms (use class C1) (Submitted in conjunction with 20/01717/LBC).
<b>HRA completion date:</b>	18/01/2022

<b>HRA completed by:</b>	
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<b>Summary</b>
<p>The project being assessed is the conversion of an office building to form an events and wedding venue with 7 guest bedrooms. The development is located approximately 118m from the Solent and Dorset Coasts Special Protection Area (SPA), 950m from the Solent and Southampton Water Special Protection Area (SPA) and Ramsar site, 3.1km from the Solent Maritime Special Area of Conservation (SAC) and approximately 4.1km from the New Forest Special Area of Conservation (SAC), SPA and Ramsar site.</p> <p>The site is located a significant distance from the European sites and as such construction stage impacts will not occur. Concern has been raised however, that the proposed development, in combination with residential developments across south Hampshire, could result in recreational disturbance to the features of interest of the New Forest SPA/Ramsar site and the Solent and Southampton Water SPA/Ramsar site, and also the release of additional nitrogen and phosphorous, via waste water, which could affect the features of the Solent Maritime SAC and the Solent and Southampton Water SPA/Ramsar site.</p> <p>The findings of the initial assessment concluded that a significant effect was possible. A detailed appropriate assessment was therefore conducted on the proposed development. Following consideration of a number of avoidance and mitigation measures designed to remove any risk of a significant effect on the identified European sites, it has been concluded that <b>the significant effects which are likely in association with the proposed development can be overcome.</b></p>

<b>Section 1 - details of the plan or project</b>	
<p><b>European sites potentially impacted by plan or project:</b></p> <p>European Site descriptions are available in Appendix I of the City Centre Action Plan's Habitats Regulations Assessment Baseline Evidence Review Report, which is on the city council's website at</p>	<ul style="list-style-type: none"> <li>▪ New Forest Special Area of Conservation (SAC)</li> <li>▪ New Forest Special Protection Area (SPA)</li> <li>▪ New Forest Ramsar site</li> <li>▪ Solent Maritime SAC</li> <li>▪ Solent and Southampton Water SPA</li> <li>▪ Solent and Southampton Water Ramsar Site</li> </ul>

<p><b>Is the project or plan directly connected with or necessary to the management of the site (provide details)?</b></p>	<p>No – the development consists of a new hotel which is neither connected to, nor necessary for, the management of any European site.</p>
<p><b>Are there any other projects or plans that together with the project or plan being assessed could affect the site (provide details)?</b></p>	<ul style="list-style-type: none"> <li>▪ Southampton Core Strategy (amended 2015) (<a href="http://www.southampton.gov.uk/policies/Amended-Core-Strategy-inc-CSPR-%20Final-13-03-2015.pdf">http://www.southampton.gov.uk/policies/Amended-Core-Strategy-inc-CSPR-%20Final-13-03-2015.pdf</a>)</li> <li>▪ City Centre Action Plan (<a href="http://www.southampton.gov.uk/planning/planning-policy/adopted-plans/city-centre-action-plan.aspx">http://www.southampton.gov.uk/planning/planning-policy/adopted-plans/city-centre-action-plan.aspx</a>)</li> <li>▪ South Hampshire Strategy (<a href="http://www.push.gov.uk/work/housing-and-planning/south_hampshire_strategy.htm">http://www.push.gov.uk/work/housing-and-planning/south_hampshire_strategy.htm</a> )</li> </ul> <p>The PUSH Spatial Position Statement plans for 104,350 net additional homes, 509,000 sq. m of office floorspace and 462,000 sq. m of mixed B class floorspace across South Hampshire and the Isle of Wight between 2011 and 2034.</p> <p>Southampton aims to provide a total of 15,610 net additional dwellings across the city between 2016 and 2035 as set out in the Amended Core Strategy.</p> <p>Whilst the dates of the two plans do not align, it is clear that the proposed development 1a Bugle Street is part of a far wider reaching development strategy for the South Hampshire sub-region which will result in a sizeable increase in population and economic activity.</p>

Regulation 68 of the Conservation of Habitats and Species Regulations 2010 (as amended) (the Habitats Regulations) is clear that the assessment provisions, i.e. Regulation 61 of the same regulations, apply in relation to granting planning permission on an application under Part 3 of the TCPA 1990. The assessment below constitutes the city council's assessment of the implications of the development described above on the identified European sites, which is set out in Regulation 61 of the Habitats Regulations.

## Section 2 - Assessment of implications for European sites

### Test 1: the likelihood of a significant effect

- This test is to determine whether or not any possible effect could constitute a significant effect on a European site as set out in Regulation 61(1) (a) of the Habitats Regulations.

The proposed development is located 118m to the north of the Solent and Dorset Coast SPA, 950m to the east of a section of the Solent and Southampton Water SPA and Solent and Southampton Water Ramsar and 3.1km to the east of the Solent Maritime SAC whilst the New Forest SAC, SPA and Ramsar site are approximately 4.1km to the south.

A full list of the qualifying features for each site is provided at the end of this report. The development could have implications for these sites which could be permanent arising from the operational phase of the development.

The following mitigation measures have been proposed as part of the development:

- *New Forest Mitigation?*
  - 4% of the CIL contribution, which will be a minimum of £X,XXX, will be ring fenced for footpath improvements in the Lordsdale and Lordswood Greenways.
  - 1% of the CIL contribution, £XXX, will be allocated to the New Forest National Park Authority Habitat Mitigation Scheme;
- A contribution of £25,988 towards the Solent Recreation Mitigation Partnership.

The development will result in an annual increase of 48.52kg which will be added to the levels of nitrogen to be addressed by a strategic mitigation scheme once one has been developed.

### Conclusions regarding the likelihood of a significant effect

This is to summarise whether or not there is a likelihood of a significant effect on a European site as set out in Regulation 61(1)(a) of the Habitats Regulations.

The project being assessed would lead to the provision of a 7 bed hotel and wedding venue located approximately 950m from the Solent and Southampton Water Special Protection Area (SPA) and Ramsar site, 1.85km from the Solent Maritime SAC and 6.3km from the New Forest Special Area of Conservation (SAC)/SPA/Ramsar site

The site is located a significant distance from the European sites and as such construction stage impacts will not occur. Concern has been raised however, that the proposed development, in combination with residential developments across south Hampshire, could result in recreational disturbance to the features of interest of the New Forest SPA/Ramsar site and the Solent and Southampton Water SPA/Ramsar site. In addition, waste-water generated by the development could result in the release of nitrogen and phosphate into the Solent leading to adverse impacts on features of the Solent Maritime SAC and the Solent and Southampton Water SPA/Ramsar site.

The applicant has provided details of several avoidance and mitigation measures which are intended to reduce the identified impacts. However, without more detailed analysis, it is not possible to determine whether the proposed measures are sufficient to reduce the identified impacts to a level where they could be considered not to result in a significant effect on the identified European sites. Overall, there is the potential for permanent impacts which could be at a sufficient level to be considered significant. As such, a full appropriate assessment of the implications for the identified European sites is required before the scheme can be authorised.

## Test 2: an appropriate assessment of the implications of the development for the identified European sites in view of those sites' conservation objectives

The analysis below constitutes the city council's assessment under Regulation 61(1) of the Habitats Regulations

In order to make a full and complete assessment it is necessary to consider the relevant conservation objectives. These are available on Natural England's web pages at <http://publications.naturalengland.org.uk/category/6528471664689152> .

The conservation objective for Special Areas of Conservation is to, "Avoid the deterioration of the qualifying natural habitats and the habitats of qualifying species, and the significant disturbance of those qualifying species, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving Favourable Conservation Status of each of the qualifying features."

The conservation objective for Special Protection Areas is to, "Avoid the deterioration of the habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring the integrity of the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive."

Ramsar sites do not have a specific conservation objective however, under the National Planning Policy Framework (NPPF), they are considered to have the same status as European sites.

### **PERMANENT, OPERATIONAL EFFECTS.**

#### ***Recreational disturbance***

Human disturbance of birds, which is any human activity which affects a bird's behaviour or survival, has been a key area of conservation concern for a number of years. Examples of such disturbance, identified by research studies, include birds taking flight, changing their feeding behaviour or avoiding otherwise suitable habitat. The effects of such disturbance range from a minor reduction in foraging time to mortality of individuals and lower levels of breeding success.

#### **New Forest SPA/Ramsar site/ New Forest SAC**

Although relevant research, detailed in Sharp et al 2008, into the effects of human disturbance on interest features of the New Forest SPA/Ramsar site, namely nightjar, *Caprimulgus europaeus*, woodlark, *Lullula arborea*, and Dartford warbler *Sylvia undata*, was not specifically undertaken in the New Forest, the findings of work on the Dorset and Thames Basin Heaths established clear effects of disturbance on these species.

##### **Nightjar**

Higher levels of recreational activity, particularly dog walking, has been shown to lower nightjar breeding success rates. On the Dorset Heaths nests close to footpaths were found to be more likely to fail as a consequence of predation, probably due to adults being flushed from the nest by dogs allowing predators access to the eggs.

##### **Woodlark**

Density of woodlarks has been shown to be limited by disturbance with higher levels of disturbance leading to lower densities of woodlarks. Although breeding success rates were higher for the nest that were established, probably due to lower levels of competition for food, the overall effect was approximately a third fewer chicks than would have been the case in the absence of disturbance.

### **Dartford warbler**

Adverse impacts on Dartford warbler were only found to be significant in heather dominated territories where high levels of disturbance increased the likelihood of nests near the edge of the territory failing completely. High disturbance levels were also shown to stop pairs raising multiple broods.

In addition to direct impacts on species for which the New Forest SPA/Ramsar site is designated, high levels of recreation activity can also affect habitats for which the New Forest SAC is designated. Such impacts include trampling of vegetation and compaction of soils which can lead to changes in plant and soil invertebrate communities, changes in soil hydrology and chemistry and erosion of soils.

### **Visitor levels in the New Forest**

The New Forest National Park attracts a high number of visitors (13.3 million annually), and is notable in terms of its catchment, attracting a far higher proportion of tourists and non-local visitors than similar areas such as the Thames Basin and Dorset Heaths. Research undertaken by Footprint Ecology, Sharp et al (2008), indicates that 40% of visitors to the area are staying tourists, whilst 25% of visitors come from more than 5 miles (8km) away from the National Park boundary. The remaining 35% of visitors are local day visitors originating from within 5 miles (8km) of the boundary.

The report states that the estimated number of current annual visits to the New Forest is predicted to increase by 1.05 million annual visits by 2026 based on projections of housing development within 50km of the Forest, with around three quarters (764,000) of this total increase originating from within 10km of the boundary (which includes Southampton).

The application site is located 6.3km from the nearest part of the New Forest SPA and Ramsar site and 4.9km from the National Park boundary in terms of linear distance and as such, residents of the proposed hotel would appear to fall into the category of local day visitors.

### **Characteristics of visitors to the New Forest**

In addition to visitor numbers, the report, "Changing patterns of visitor numbers within the New Forest National Park", 2008 also showed that:

- 85% of visitors to the New Forest arrive by car.
- 23% of the visitors travelling more than 5 miles come from the Southampton/Eastleigh area (see para 2.1.1).
- One of the main reasons for visiting the National Park given in the 2005 Visitor Survey was dog walking (24% of visitors - Source New Forest National Park Visitor survey 2005).
- Approximately 68% of visitors to UK National Parks are families.

(Source: [www.nationalparks.gov.uk](http://www.nationalparks.gov.uk)).

The majority of the visitors to New Forest locations arriving from Southampton could therefore be characterised as day visitors, car-owners in family groups and many with dogs.

### **Car parking and accessibility**

The development consist of a 7 bed hotel and event space. There is no on-site car parking however, public car parks are available nearby.

## **Mitigation**

Although the likely frequency of recreational visits to the New Forest, arising from the proposed development is low, there is still the risk of recreational impacts. Southampton City Council has therefore undertaken to use 5% of Community Infrastructure Levy (CIL) contributions.

The majority of this money, 4%, will be used to upgrade footpaths and infrastructure in the City's greenways. The greenways are a series of wooded stream valleys within Southampton's urban area which provide opportunities for walks in a semi-natural environment.

However, even with good quality walking routes available within Southampton, the New Forest's draw as a special destination is likely to attract visitors from the Compass House development. It is therefore proposed that 1% of the CIL contribution will be used to fund the New Forest National Park Habitat Mitigation Scheme. This scheme involves the following elements:

- Access management within the designated sites.
- Alternative recreation sites and routes outside the designated sites.
- Education, awareness and promotion.
- Monitoring and research.

The development will result in a contribution of **£2,347** to pay for improvements within the two greenways and **£587** towards the New Forest National Park Habitat Mitigation Scheme.

## **Solent and Southampton Water SPA/Ramsar site**

In 2008 the Council adopted the Solent Disturbance Mitigation Project's mitigation scheme, in collaboration with other Councils within the Partnership for Urban South Hampshire, in order to mitigate the effects of new residential development on the Solent and Southampton Water SPA and Ramsar site. This enables financial contributions to be made by developers to fund appropriate mitigation measures. The level of mitigation payment required is linked to the number of bedrooms within the properties.

Assuming the hotel always contains a number of visitors there will be a net increase in population of the city which could lead to significant impacts on the Solent and Southampton Water SPA. There is therefore the risk that the development, in-combination with residential developments across south Hampshire, could lead to recreational impacts upon the Solent and Southampton Water SPA. The likelihood of recreational impacts occurring is clearly linked to visitors' ability to access the coast. Results from the Solent Disturbance & Mitigation Project visitor survey, Fearnley, H., Clarke, R. T. & Liley, D. (2011), indicated that 52% of visitors arrived by car. Consequently, residents occupying rooms without car parking will have a low likelihood of visiting the coast.

Although the site does not benefit from car parking spaces, public car parks are located nearby, and it is likely that guests would travel to events in private cars. It is therefore proposed to apply the one bedroom flat rate. Calculations of the SRMP contribution for the development are shown below.



Size of Unit	Scale of Mitigation per Unit	Number of units	Total
1 Bedroom	£356	7	£24,92
	<b>Total</b>		£24,92

73 (car parking space x 1bed (£356) = £2,492

It is considered that, subject to a level of mitigation, which has been calculated as a total of £2,492 being secured through a legal agreement, appropriate and effective mitigation measures will have been secured to ensure that effects associated with disturbance can be satisfactorily removed. The applicant has agreed to enter into a legal agreement to this effect.

#### *Water quality*

In their letter date 6th September 2018, Natural England highlighted concerns regarding, “high levels of nitrogen and phosphorus input to the water environment in the Solent with evidence that these nutrients are causing eutrophication at internationally designated sites.”

Eutrophication is the process by which excess nutrients are added to a water body leading to rapid plant growth. In the case of the Solent Maritime SAC and the Solent and Southampton Water SPA/Ramsar site the problem is predominately excess nitrogen arising from farming activity, wastewater treatment works discharges and urban run-off.

Features of the Solent and Southampton Water SPA/Ramsar site that are vulnerable to increases in nitrogen levels are coastal grazing marsh, inter-tidal mud and seagrass.

Evidence of eutrophication impacting the Solent and Southampton Water SPA/Ramsar site has come from the Environment Agency data covering estimates of river flow, river quality and also data on WwTW effluent flow and quality.

An Integrated Water Management Study for South Hampshire, commissioned by the Partnership for Urban South Hampshire (PUSH) Authorities, examined the delivery of development growth in relation to legislative and government policy requirements for designated sites and wider biodiversity. This work has identified that there is uncertainty in some locations as to whether there will be enough capacity to accommodate new housing growth. There is uncertainty about the efficacy of catchment measures to deliver the required reductions in nitrogen levels, and/or whether the upgrades to waste-water treatment works will be enough to accommodate the quantity of new housing proposed. Considering this, Natural England have advised that a nitrogen budget is calculated for larger developments.

A methodology provided by Natural England has been used to calculate a nutrient budget and the full workings are provided in Appendix 1. The calculations conclude that there is a predicted Total Nitrogen surplus arising from the development of 3.4kg/TN/yr. This was arrived at through use of the British Water Code of Practice 4 Flow and Loads to calculate volume of wastewater and based upon the following assumptions:

- The hotel is running at 50% occupancy with each of the 7 rooms containing 2 people.
- The weddings serve food to an additional

The results of the British Water Code of Practice 4 Flow and Loads calculation are shown in Appendix 2:

Due to the nature of the site, and the surrounding urban environment, there are no mitigation options available on site. In addition, at present there is no strategic mitigation scheme into which payments can be made. It is therefore proposed that a record of the outstanding amount of 3.4kg/TN/yr nitrogen is made so that it can be added to the levels of nitrogen to be addressed by a strategic mitigation scheme once one has been developed.

Conclusions regarding the implications of the development for the identified European sites in view of those sites' conservation objectives

## Conclusions

The following mitigation measures have been proposed as part of the development:

- 4% of the CIL contribution, which will be a minimum of £X,XXX will be ring fenced for footpath improvements in the Greenways;
- 1% of the CIL contribution, which will be a minimum of £XXX will be allocated to the New Forest National Park Authority Habitat Mitigation Scheme;
- A contribution of £2,492 for the Solent Recreation Mitigation Project.

As such, visitor pressure on European and other protected sites in the New Forest arising from the proposed development is likely to be extremely low and it can therefore be concluded that, subject to the implementation of the identified mitigation measures, **significant effects arising from recreational disturbance will not occur.**

There currently isn't a strategic mitigation scheme for water quality impacts and it is therefore proposed that a record of the outstanding amount of 48.52kg/TN/yr nitrogen is made so that it can be addressed once one has been developed.

## References

Fearnley, H., Clarke, R. T. & Liley, D. (2011). The Solent Disturbance & Mitigation Project. Phase II – results of the Solent household survey. ©Solent Forum / Footprint Ecology.

Liley, D., Stillman, R. & Fearnley, H. (2010). The Solent Disturbance and Mitigation Project Phase 2: Results of Bird Disturbance Fieldwork 2009/10. Footprint Ecology / Solent Forum.

Sharp, J., Lowen, J. and Liley, D. (2008) Changing patterns of visitor numbers within the New Forest National Park



## European Site Qualifying Features

### The New Forest SAC

The New Forest SAC qualifies under Article 3 of the Habitats Directive by supporting the following Annex I habitats:

- Oligotrophic waters containing very few minerals of sandy plains (*Littorelletalia uniflorae*) (primary reason for selection)
- Oligotrophic to mesotrophic standing waters with vegetation of the *Littorelletea uniflorae* and/or of the *Isoëto-Nanojuncetea* (primary reason for selection)
- Northern Atlantic wet heaths with *Erica tetralix* (primary reason for selection)
- European dry heaths (primary reason for selection)
- *Molinia* meadows on calcareous, peaty or clayey-silt laden soils (*Molinion caeruleae*) (primary reason for selection)
- Depressions on peat substrates of the *Rhynchosporion* (primary reason for selection)
- Atlantic acidophilous beech forests with *Ilex* and sometimes also *Taxus* in the shrub layer (*Quercion robori-petraeae* or *Ilici-Fagenion*) (primary reason for selection)
- *Asperulo-Fagetum* beech forests (primary reason for selection)
- Old acidophilous oak woods with *Quercus robur* on sandy plains (primary reason for selection)
- Bog woodland (primary reason for selection)
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) (primary reason for selection)
- Transition mires and quaking bogs
- Alkaline fens

The New Forest SAC qualifies under Article 3 of the Habitats Directive by supporting the following Annex II species:

- Southern Damselfly *Coenagrion mercurial* (primary reason for selection)
- Stag Beetle *Lucanus cervus* (primary reason for selection)
- Great Crested Newt *Triturus cristatus*

### The New Forest SPA

The New Forest SPA qualifies under Article 4.1 of the Birds Directive by supporting breeding populations of European importance of the following Annex I species:

- Dartford Warbler *Sylvia undata*
- Honey Buzzard *Pernis apivorus*
- Nightjar *Caprimulgus europaeus*
- Woodlark *Lullula arborea*

The SPA qualifies under Article 4.2 of the Birds Directive by supporting overwintering populations of European importance of the following migratory species:

- Hen Harrier *Circus cyaneus*

### New Forest Ramsar Site

The New Forest Ramsar site qualifies under the following Ramsar criteria:

- Ramsar criterion 1: Valley mires and wet heaths are found throughout the site and are of outstanding scientific interest. The mires and heaths are within catchments whose uncultivated and undeveloped state buffer the mires against adverse ecological change. This is the largest concentration of intact valley mires of their type in Britain.

- Ramsar criterion 2: The site supports a diverse assemblage of wetland plants and animals including several nationally rare species. Seven species of nationally rare plant are found on the site, as are at least 65 British Red Data Book species of invertebrate.
- Ramsar criterion 3: The mire habitats are of high ecological quality and diversity and have undisturbed transition zones. The invertebrate fauna of the site is important due to the concentration of rare and scarce wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.

### **Solent Maritime SAC**

The Solent Maritime SAC qualifies under Article 3 of the Habitats Directive by supporting the following Annex I habitats:

- Estuaries (primary reason for selection)
- *Spartina* swards (*Spartinion maritimae*) (primary reason for selection)
- Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*) (primary reason for selection)
- Sandbanks which are slightly covered by sea water all the time
- Mudflats and sandflats not covered by seawater at low tide
- Coastal lagoons
- Annual vegetation of drift lines
- Perennial vegetation of stony banks
- *Salicornia* and other annuals colonising mud and sand
- Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”)

Solent Maritime SAC qualifies under Article 3 of the Habitats Directive by supporting the following Annex II species:

- Desmoulin's whorl snail *Vertigo moulinsiana*

### **Solent and Southampton Water SPA**

Solent and Southampton Water SPA qualifies under Article 4.1 of the Birds Directive by supporting breeding populations of European importance of the following Annex I species:

- Common Tern *Sterna hirundo*
- Little Tern *Sterna albifrons*
- Mediterranean Gull *Larus melanocephalus*
- Roseate Tern *Sterna dougallii*
- Sandwich Tern *Sterna sandvicensis*

The SPA qualifies under Article 4.2 of the Birds Directive by supporting overwintering populations of European importance of the following migratory species:

- Black-tailed Godwit *Limosa limosa islandica*
- Dark-bellied Brent Goose *Branta bernicla bernicla*
- Ringed Plover *Charadrius hiaticula*
- Teal *Anas crecca*

The SPA also qualifies under Article 4.2 of the Birds Directive by regularly supporting at least 20,000 waterfowl, including the following species:

- Gadwall *Anas strepera*
- Teal *Anas crecca*
- Ringed Plover *Charadrius hiaticula*
- Black-tailed Godwit *Limosa limosa islandica*
- Little Grebe *Tachybaptus ruficollis*
- Great Crested Grebe *Podiceps cristatus*
- Cormorant *Phalacrocorax carbo*

- Dark-bellied Brent Goose *Branta bernicla bernicla*
- Wigeon *Anas Penelope*
- Redshank *Tringa tetanus*
- Pintail *Anas acuta*
- Shoveler *Anas clypeata*
- Red-breasted Merganser *Mergus serrator*
- Grey Plover *Pluvialis squatarola*
- Lapwing *Vanellus vanellus*
- Dunlin *Calidris alpina alpina*
- Curlew *Numenius arquata*
- Shelduck *Tadorna tadorna*

### **Solent and Southampton Water Ramsar Site**

The Solent and Southampton Water Ramsar site qualifies under the following Ramsar criteria:

- Ramsar criterion 1: The site is one of the few major sheltered channels between a substantial island and mainland in European waters, exhibiting an unusual strong double tidal flow and has long periods of slack water at high and low tide. It includes many wetland habitats characteristic of the biogeographic region: saline lagoons, saltmarshes, estuaries, intertidal flats, shallow coastal waters, grazing marshes, reedbeds, coastal woodland and rocky boulder reefs.
- Ramsar criterion 2: The site supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.
- Ramsar criterion 5: A mean peak count of waterfowl for the 5 year period of 1998/99 – 2002/2003 of 51,343
- Ramsar criterion 6: The site regularly supports more than 1% of the individuals in a population for the following species: Ringed Plover *Charadrius hiaticula*, Dark-bellied Brent Goose *Branta bernicla bernicla*, Eurasian Teal *Anas crecca* and Black-tailed Godwit *Limosa limosa islandica*.

## Appendix 1 Nutrient Budget

Calculation using water rate of 110 litres waste water per person per day

Step	Measurement	Value	Unit	Explanation
Development Proposal	Development types that would increase the population served by a wastewater system	1	Hotel	
Step 1	Additional population	94		
Step 2	Wastewater volume generated by development	2080	Litres/ day	
Step 3	Receiving WWTW environmental permit limit for TN	10	Mg/l TN	
Step 4	TN discharged after WWTW	18720	Mg/TN/day	90% of the consent limit = 9mg/l TN. 14770 x 0.9
	Convert mg/TN to kg/TN per day	0.01872	Kg/TN/day	Divide by 1,000,000
	Convert kg/TN per day to kg/TN per year	3.42576		x 365 days
Wastewater total nitrogen load	3.4kg/TN/yr			