Habitats Regulations Assessment (HRA)

Application reference:	20/01810/FUL
Application address:	Chapel Riverside Former Town Depot Site, Albert Road North
Application description:	Implementation of planning permission 16/02016/OUT (for the redevelopment of the site) not in accordance with condition 4 (odour). Variation of condition 4 sought to enable residential accommodation in phase 3 of the development to be occupied in advance of the new wastewater tanks being finalised and the existing tanks being decommissioned
HRA completion date:	23.02.2021

HRA completed by:

Lindsay McCulloch
Planning Ecologist
Southampton City Council
Lindsay.mcculloch@southampton.gov.uk

Summary

The project being assessed is a mixed development that will lead to the provision of 457 residential units with commercial and retail floorspace plus a riverside walkway and car parking. The site is located immediately adjacent to the Solent and Dorset Coast potential Special Protection Area (pSPA), approximately 245m from the Solent and Southampton Water SPA /Ramsar site and approximately 5.1km from the New Forest Special Area of Conservation (SAC)/ SPA/Ramsar site.

The site is currently vacant having previously been used as a council depot. It is located a close to European sites and as such there is potential for construction stage impacts. Concern has also been raised that the proposed development, in-combination with other residential developments across south Hampshire, could result in recreational disturbance to the features of interest of the New Forest SAC/SPA/Ramsar site.

The proposed development is a change in the timing of when new properties in phase 3 of the Chapel Riverside development can be occupied. The effects of activities arising from the construction and occupation of these properties, on the designated features of adjacent and nearby European sites, has previously been assessed, see attached Habitats Regulations Assessment, and their impacts mitigated. The change in the timing of occupation will not generate any new activities and consequently no new impacts are likely. No likely significant effects will occur.

Habitats Regulations Assessment (HRA)

Application reference:	16/02016/OUT
Application address:	Chapel Riverside Former Town Depot Site, Albert Road North
Application description:	Demolition of all existing buildings and structures and site clearance. Outline planning permission sought for 457 residential units, 4,963 sqm. (GIA) commercial floorspace (Use Classes B1/B2/B8) and 946 sqm. (GIA) of flexible retail floorspace (Use Classes A1/A2/A3/A4) in buildings ranging from 1 to 13 storeys and the creation of a riverside walkway/cycleway. Full planning permission sought for the development of Phase 1 comprising 72 residential units (comprising a mix of 24 x 1 bed and 48 x 2 bed units) and 322 sqm of flexible retail floorspace (Use Classes A1/A2/A3/A4) within 4-storey buildings with associated access, parking and landscaping.
HRA completion date:	27/02/2017

HRA completed by:

Lindsay McCulloch
Planning Ecologist
Southampton City Council
Lindsay.mcculloch@southampton.gov.uk

Summary

The project being assessed is a mixed development that will lead to the provision of 457 residential units with commercial and retail floorspace plus a riverside walkway and car parking. The site is located immediately adjacent to the Solent and Dorset Coast potential Special Protection Area (pSPA), approximately 245m from the Solent and Southampton Water SPA /Ramsar site and approximately 5.1km from the New Forest Special Area of Conservation (SAC)/ SPA/Ramsar site.

The site is currently vacant having previously been used as a council depot. It is located a close to European sites and as such there is potential for construction stage impacts. Concern has also been raised that the proposed development, in-combination with other residential developments across south Hampshire, could result in recreational disturbance to the features of interest of the New Forest SAC/SPA/Ramsar site.

The findings of the initial assessment concluded that significant effects were 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 **the significant effects which are likely in association with the proposed development can be overcome.**

Section 1 - details of the plan or project	
European sites potentially impacted by plan or project: 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	▪ Solent and Southampton Water Special Protection Area (SPA) ▪ Solent and Southampton Water Ramsar Site ▪ River Itchen Special Area of Conservation (SAC). ▪ Solent Maritime SAC ▪ New Forest SAC ▪ New Forest SPA ▪ New Forest Ramsar site
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No – the development consists of an increase in residential dwellings and commercial and retail floorspace which are neither connected to, nor necessary for, the management of any European site.
Are there any other projects or plans that together with the project or plan being assessed could affect the site (provide details)?	▪ Southampton Core Strategy (amended 2015) (http://www.southampton.gov.uk/policies/Amended-Core-Strategy-inc-CSPR-%20Final-13-03-2015.pdf ▪ City Centre Action Plan (http://www.southampton.gov.uk/planning/planning-policy/adopted-plans/city-centre-action-plan.aspx ▪ South Hampshire Strategy (http://www.push.gov.uk/work/housing-and-planning/south_hampshire_strategy.htm) 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. Southampton aims to provide a total of 16,300 net additional dwellings across the city between 2006 and 2026 as set out in the Amended Core Strategy. Whilst the dates of the two plans do not align, it is clear that the proposed development of the former Town Depot site 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.

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 245m to the south-west of a section of the Solent and Southampton Water SPA and Solent and Southampton Water Ramsar Site whilst the New Forest SAC, SPA and New Forest Ramsar site are approximately 5.1km 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 both temporary, arising from construction activity, or permanent arising from the on-going impact of the development when built.

In their response to the consultation on this planning application, dated 11th August, 2015 Natural England raised concerns about insufficient information being provided about potential impacts on the New Forest sites. The response also highlighted the potential for recreational impacts upon the New Forest SPA as a consequence of the operation of the proposed development.

Section 3.2.1 of the Report to Inform a Habitat Regulations Assessment (November 2016) identified the following effects within the immediate vicinity of the proposed development:

- Habitat loss or degradation (of the designated site itself or associated habitats such as foraging or roosting areas used by interest species)
- Flood risk/coastal squeeze;
- Effects on connectivity/collision risk;
- Pollutants (mobilisation of contaminants, siltation) ;
- Disturbance (light, noise, vibration, visual disturbance).

Plus the following wider scale impacts:

- Atmospheric pollution (traffic);
- Recreational disturbance;
- Water demand;
- Effluent discharge.
-

A number of avoidance and mitigation measures are set out in section 9 of the Report to Inform a Habitat Regulations Assessment (November 2016), Aspect Ecology which are summarised as follows:

Construction phase

- Construction methodology to ensure no pollution of the River Itchen from mobilisation of contaminants, spillage of fuel, oil or other chemicals or release of silt laden water;
- Use of quiet construction methods e.g. replacement piling rather than displacement piling, where feasible;
- Where practical 'Noisy' machinery will be sited away from the shoreline;
- Provision of acoustic screens or enclosures;
- Seasonal restrictions on works;
- Suspension of piling when temperatures are at or below freezing;
- Lighting along the riverside to be directed away from the shoreline through the use of reflectors, hoods or screening;
- Provision of a Construction Environmental Management Plan (CEMP) containing detailed methodologies for the avoidance measures.

Operational

- Avoidance of large areas of glass and use of design measures including non-reflective fretting of glass, interior artwork, non-reflective one way glass, balconies, vegetated facades and angled windows (40 degrees);
- Provision of a lighting scheme including systems to turn off or dim exterior lighting, careful selection and positioning of luminaries and use of louvres, shields or hoods to control light spill;
- Creation of a riverside walk/cycleway;
- Contribution of £ 83,248 (£176 x 457) to the Solent Recreation Mitigation Project;
- Improvements to local roads to provide enhanced opportunities for pedestrians and cyclists;
- Provision of a welcome pack to new residents including walking and cycling maps illustrating local routes and public transport information; and
- Appointment of a Travel Plan Coordinator who will investigate other transport initiatives, including discounts on cycling equipment and setting up of walking and cycling user groups.

In addition, 5% of the Community Infrastructure Levy (CIL) for the development will be ring fenced for recreational improvements in the Shoreburs and Weston Greenways and Peartree Green.

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 up to 457 additional dwellings and new retail and office floorspace in close proximity to a section of the Solent and Southampton SPA/Ramsar site and within reasonable travel distance of the New Forest SAC/SPA/Ramsar site.

The site is currently vacant and although the former use as a council depot would have generated some noise and light disturbance impacts, these are likely to have been at a lower level than those anticipated to arise from the proposed development. The proposed development is also likely to lead to new permanent impacts as a result of an increase in

recreational pressure plus temporary impacts arising from the construction activities and as such the precautionary principle applies.

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 presence of both temporary and 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

The identified potential effects are examined below to determine the implications for the identified European sites in line with their conservation objectives and whether the proposed avoidance and mitigation measures are sufficient to remove any potential impact.

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 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.

TEMPORARY, CONSTRUCTION BASED EFFECTS

Habitat loss or degradation

Solent and Southampton Water SPA/Ramsar site
The application site is separated from the Solent and Southampton Water SPA/Ramsar by the main channel of the River Itchen. This physical separation combined with the avoidance of encroachment into the river channel mean that the proposals will not result in the direct loss of habitat from within the SPA/Ramsar site. In addition, a wintering bird survey, undertaken from November 2014 to March 2015, did not record any foraging or roosting activity by interest species on or adjacent to the site itself, with the nearest high tide roosts on a slipway and floating pontoons approximately 250m and 280m respectively from the site boundary. As a result, it can be concluded that direct loss of supporting habitat is also unlikely.

River Itchen SAC
As with the Solent and Southampton Water SPA the River Itchen SAC is physically separated from the application site so no direct loss or degradation of SAC habitats is likely. However, the tidal reaches of the Itchen are known to be used by otter, *Lutra lutra*, and migrating Atlantic salmon, *Salmo salar*, which are species for which the SAC is designated. There is therefore some potential for disturbance or degradation of supporting habitats which is considered in following sections.

Solent and Dorset pSPA
The proposals will not result in any loss of riverine habitat and hence there will be no reduction in potential foraging areas.

Other sites
The Solent Maritime SAC and the New Forest SAC, SPA and Ramsar site are all well separated from the development site so no direct loss of habitat would occur.

As there will be no direct habitat loss, there will be no implications for the identified European sites from this impact pathway. Indirect habitat loss is addressed through various sections below.

Disturbance
This includes physical disturbance, visual disturbance, noise and vibration arising from construction activities. This has the potential to lead to a significant effect upon the Solent and Southampton Water SPA and Ramsar site and species for which the River Itchen SAC is designated. The other European sites are too distant to be impacted by construction activity.

Solent and Southampton Water SPA/Ramsar site
Light
In terms of lighting and visual disturbance during the construction phase, the effects are unlikely to extend to the inter-tidal areas on the eastern bank which are the areas with the highest levels of roosting and foraging activity. Areas adjacent to the site could be affected however, these have been shown to be of limited foraging and roosting value. As such it can be concluded that birds for which the SPA/Ramsar is designated would not be subject to any significant effects associated with lighting or visual disturbance.

Where lighting is required during the construction phase (e.g. for security), this will be directed away from the shoreline, with use of reflectors, hoods or screening where necessary to avoid light spill along the river.

The application site is located within an existing industrial area with high levels of activity along the water front. The wintering bird surveys undertaken in support of the planning application indicated that there was minimal activity by bird species for which the SPA is designated on or immediately adjacent to the application site. The nearest areas of importance for these species are the mudflats on the eastern side of the river which are over 200m away. As such, it is unlikely that any negative effects will occur as a consequence of lighting or visual disturbance from the proposed works.

Noise
Construction activities including building demolition, breaking up of hardstanding and piling are likely to generate noise levels in excess of the existing background noise. There is therefore the potential for noise and vibration to impact areas beyond the site.

The Itchen Riverside Master Plan Ecological Baseline Study produced on behalf of Southampton City Council recommended keeping noise levels below 75dB and also indicated that levels above 70dB can impact birds up to 300m away.

An assessment of the potential effects of operations such as impact and vibratory piling was undertaken in support of the planning application for the river wall construction. This assessment concluded that noise levels in excess of 70dB would only extend to approximately 100m from the site. This is less than the distance to the mudflats on the eastern side of the river. Substantially higher noise levels were predicted for the hydraulic

impact hammer with the 70dB contour extending to 223.9m and the 75dB contour to 125.9m from the edge of the site. However, this is still less than the distance to intertidal habitats on the far side of the river and the high tide roosts, located 250m and 280m from the site respectively. Even based on the maximum sound pressure level, noise exposure levels were not predicted to exceed 80dB, such that significant noise disturbance should not be experienced by these areas. As a consequence birds using these areas are unlikely to be affected by noise disturbance.

Bearing in mind that the works associated with the main development would not involve activities likely to generate noise or vibration levels in excess of those predicted for the river wall construction, it is considered that a similar conclusion can be reached.

Despite the low risk of impacts from noise and vibration the CEMP accompanying the planning application proposes a number of measures which are likely to reduce noise impacts to a negligible level. These include utilising quiet construction techniques, for example vibro or continuous flight auger piling where possible, acoustic screening, timing of work to avoid ecologically sensitive periods, suspension of piling where temperatures are at or below freezing, use of equipment to reduce noise and vibration (e.g. use of timber wedges) and, where practical, the positioning of 'noisy' machinery away from the shoreline.

River Itchen SAC
Atlantic salmon, one of the species for which the SAC is designated, pass through the tidal reaches of the Itchen on their way to and from their breeding grounds upstream. Vibration generated by activities such as piling can result in adverse impacts ranging in severity from delaying the migration of fish to physical injury to fish.

The majority of the measures proposed to minimise the noise impacts on over-wintering birds will also benefit Atlantic salmon however, care is required in respect of the use of timing with the optimum period for salmon occurring during a sensitive period for over-wintering birds.

Should percussive piling be required, timings favouring salmon should be adopted due to the more serious nature of the impacts however, where this coincides with temperatures at or below freezing piling should be suspended.

Other designated sites
The Solent Maritime SAC and the New Forest SAC, SPA and Ramsar site are all sufficiently distant from the site to be unaffected by construction phase disturbance.

It is considered that the avoidance and mitigation measures are appropriate and will be effective. Subject to a CEMP being agreed, this will ensure that there will be no implications for the identified European sites from this impact pathway.

In order to be effective, the agreement of the CEMP will need to be required as a pre-commencement condition, attached to any granting of outline consent.

Solent and Dorset Coast pSPA
The pSPA is designated for its importance as foraging habitat for terns, rather than for breeding or roosting. Notably, it is understood that the principal breeding areas in the Solent for terns are in the vicinity of Lymington (Keyhaven to Pylewell) (in Solent and Southampton Water SPA) and around Chichester and Langstone Harbours, including islands in the harbours (e.g. Stakes Island and Pilsey Island). Given the distance between the site and these locations, it is considered unlikely that disturbance would occur to breeding or roosting sites.

When feeding, terns are likely to be less susceptible to disturbance, whilst the small area affected by increased noise and vibration levels is unlikely to be of significance given the overall large area of the pSPA. As such, it is considered that disturbance is unlikely to result in adverse effects on associated tern populations. Nevertheless, controls proposed to avoid disturbance to Atlantic Salmon will coincide with the tern breeding season, such that potential effects would be minimised in any event.

Pollutants (mobilisation of contaminants, siltation)

Solent and Southampton Water SPA/Ramsar site, Solent and Dorset Coast pSPA and River Itchen SAC
The proposed development could potentially lead to pollution of the river channel as a result of contaminated surface water runoff, either from mobilisation of historic contaminants, or pollution events during the construction phase. Construction activities could also result in an increase in silt levels which could affect water quality.

The CEMP contains a number of measures including dust suppression, designated areas for refuelling, no discharges into surface water drainage or the river, the use of spill kits and an incident response plan which will reduce the potential for release of pollutants to a negligible level.

River Itchen SAC
The SAC lies upstream of the site, and therefore is unlikely to be directly affected by mobilisation of contaminants or siltation. Indirect effects, through impacts upon salmon passing close to the site, are possible however measures identified to safeguard features of the Solent and Southampton Water SPA/Ramsar should be sufficient to mitigate any adverse effects.

Other designated sites
The Solent Maritime SAC and the New Forest SAC, SPA and Ramsar site are all sufficiently distant from the site to be unaffected by construction phase disturbance.

It is considered that the avoidance and mitigation measures are appropriate and will be effective. Subject to a CEMP being agreed and the necessary pollution control measures being secured through condition, there will be no implications for the identified European sites from this impact pathway.

PERMANENT, OPERATIONAL EFFECTS.

Habitat Creation and habitat degradation
The proposed development will not result in any direct habitat loss and as such there will be no implications for any of the identified European sites from this impact pathway. Indirect habitat loss is addressed through various sections below.

Flood risk and coastal squeeze

Solent and Southampton SPA and Solent and Dorset Coast pSPA
The site itself comprises hardstanding and the footprints of former buildings, with a sheet piling river wall along the eastern boundary physically separating the site from the river. Reconstruction of the river wall will be undertaken under a separate planning consent, with no encroachment beyond this under the current proposals. As such, the proposed development will not result in any further encroachment into coastal or associated habitat.

River Itchen SAC
Given its separation from the SAC, the proposed development would not contribute to flood risk or coastal squeeze associated with the SAC.

Solent Maritime SAC
Given its separation from the SAC, the proposed development would not contribute to flood risk or coastal squeeze associated with the SAC.

Pollution

Solent and Southampton Water SPA/Ramsar site
The bird species for which the SPA is designated are not directly sensitive to air pollution, although increased atmospheric pollution could adversely affect supporting habitats, including those noted on the Ramsar citation. In this context, atmospheric pollution, particularly nitrogen deposition, is highlighted as a potential issue under the HRAs for SCC's Core Strategy and City Centre Action Plan (CCAP), and these plans set out a number of strategic measures to reduce traffic levels and associated atmospheric pollution.

An initial traffic assessment has been undertaken of the proposed development, which predicts increases in traffic along the road immediately adjacent to the site, Elm Terrace, of approximately 2000 AADT (annual average daily traffic). The next nearest roads, Albert Road North and Chapel Road, are expected to experience increases in traffic levels above 1000 AADT, All of these roads are located within 500m of the site.

According to Highways Agency guidance relating to the assessment of traffic and atmospheric pollution, beyond 200m of a road the effects of emissions are reduced to background levels. The only section of road within 200m of the SPA and Ramsar site within the near vicinity of the development site is the Northam Bridge (the Itchen Bridge lies between sections of the SPA/Ramsar at further than 200m distance). Traffic levels for the bridge itself have not been calculated however, manually recorded data of traffic flows along Marine Parade, which leads to the bridge, suggest an increase of 396 AADT is likely. This is below the 1000 AADT threshold for potential significant effects indicated by Highways Agency guidance and consequently no significant increase in pollutant levels is expected.

As such, it is considered unlikely that traffic generated by the proposed development would result in any significant effect on the SPA/Ramsar.

Solent and Dorset Coast pSPA
The tern species for which the pSPA is proposed are not directly sensitive to air pollution. In any event, as set out in regard to other designations, the proposed development is unlikely to result in significant increases in atmospheric pollution that could affect habitats supporting these species.

River Itchen SAC
Increases in traffic beyond the immediate surrounds of the site will be below the 1000 AADT threshold for potentially significant effects set out by Highways Agency guidance. As such it is considered that effects on the SAC as a result of atmospheric pollution are highly unlikely.

Other sites
The increase in traffic will be local to the development site and measures contained within the CCAP and Core Strategy will be sufficient to deal with atmospheric pollution arising from traffic using the wider road network.

As the assessment indicates that atmospheric pollution will remain within acceptable limits there will be no implications for the identified European sites from this impact pathway.

Effects on connectivity/collision risk

Solent and Southampton Water SPA/Ramsar site
Research has indicated that tall buildings pose a collision risk to birds. In addition to height, lighting, which can draw birds towards buildings especially in bad weather, and reflective surfaces pose particular risks.

The Southampton Wetland Bird Flight Path Study 2009, which was undertaken to support the development of the Core Strategy, established the majority of flight activity occurred over the river corridors with little movement into the city centre area. A moderate level of activity was recorded along the southern section of the River Itchen, close to the site, although there was no movement away from the river channel.

Of the interest species for which the SPA is specifically designated, rather than as part of an assemblage, Dark-bellied Brent Goose and small numbers of Mediterranean Gull were noted as flying within the vicinity of the site.

The majority of Brent Goose activity was confined to the river corridor, although a small number of birds were recorded within close proximity to buildings within the city centre. There is therefore minor potential for Dark-bellied Brent (and to a lesser extent Mediterranean Gull) to be adversely affected by development proposals at the site as a result of disruption to flight lines and collision risk. In regards to other species, Black-tailed Godwit, Ringed Plover and Teal were all noted to be flying on paths well away from the city centre.

The built form of the proposed development has been designed to minimise disruption to flightpaths and reduce collision risk. This has been achieved by breaking up the built form into a number of buildings with landscaping being used to provide open spaces enabling birds to fly between buildings. Further detailed design measures, including, the avoidance of large areas of glass, glazed areas to have high levels of 'visual noise', use of angled windows and use of bird screens, will be incorporated into individual buildings.

Solent and Dorset pSPA
As set out at section 4 in relation to Solent and Southampton Water SPA/Ramsar, built development has the potential to increase incidences of bird strike. Accordingly, the built form of the proposed development has been designed to minimise disruption to flightpaths and reduce collision risk. In addition, the measures detailed for the Solent and Southampton Water SPA will help to reduce the collision risk further.

Other sites
The other European sites are too distant from the application site to experience adverse impacts on connectivity for habitats or species.

The proposed mitigation measures are considered to be effective. As a result, it is concluded that there is no likelihood of any implications to the European sites from this impact pathway.

Disturbance (visual disturbance, noise and lighting)

Solent and Southampton Water SPA/Ramsar site

The development includes a waterside path and open space, streets and new homes which will lead to higher levels of human activity, noise and lighting. However, the designated habitats are located 245m to the north east of the application site adjacent to an existing industrial area. It is therefore reasonable to assume that birds using the inter-tidal area are habituated to relatively high levels of noise, lighting and human activity.

To ensure that disturbance remains within acceptable levels the area immediately adjacent to the river has been designed as a landscaped walkway with retail and office areas located away from the shoreline.

A lighting scheme will be prepared at the detailed design stage which will include measures to reduce the attraction for birds. Measures to be incorporated include;

- lighting in accordance with anti-sky lighting protocols;
- systems to turn off or dim exterior lighting;
- careful selection and positioning of luminaries, particularly in relation to avoiding light spill along the shoreline; and
- use of louvres, shields or hoods to control light spill;

River Itchen SAC
The application site lies downstream of River Itchen SAC and as such activities such as lighting could act as a barrier for Atlantic salmon and otter which move along the river channel. A number of mitigation measures aimed at removing adverse impacts from lighting, noise and vibration have been incorporated into the design of the development and as a consequence there is a negligible risk of disturbance.

Other sites
The other European sites are too distant from the application site to experience adverse impacts on habitats or species from visual, noise and light disturbance.

The proposed mitigation measures are considered to be effective. As a result, it is concluded that there is no likelihood of any implications to the European sites from this impact pathway.

Recreational disturbance

The proposed development will result in an increase in human population which is likely to lead to a rise in recreational activity at SPA locations, both in the immediate vicinity of the development but also further afield. Increases in recreational activity at SPA locations have the potential to result in mortality in the SPA bird populations due to increased disturbance. For a review of the in-depth analysis which has taken place on this issue at the Solent, please see the Solent Disturbance and Mitigation Project (SDMP) (http://www.solentforum.org/forum/sub_groups/Natural_Environment_Group/Disturbance_and_Mitigation_Project/). A key conclusion of the research was that residential development within 5.6km of a Solent SPA could lead to a likely significant effect as a consequence of disturbance from recreation.

Solent and Southampton Water SPA/Ramsar site
The development is not located close to any sections of the SPA however, as each residential unit will benefit from a car parking space it will be possible for new residents to access the coast. It has been calculated that the development could generate approximately 60,781 additional visits to the coast which equates to 0.76%% of the total annual visits modelled on the basis of the projected increase in housing. On its own this number of additional visits is unlikely to lead to significant effects however, when

considered in combination with recreational activity arising from other residential developments across south Hampshire, there is potential for adverse impacts.

The SDMP identified a number of costed mitigation measures to reduce recreational disturbance arising from increased levels of recreational activity. A figure of £176 per residential unit was agreed by planning authorities across south Hampshire, and adopted by Southampton City Council, to enable delivery of the mitigation measures. The applicants intend to make a payment of £80,432 (457x176) to the Solent Recreation Mitigation Project (successor to the SDMP), secured through an appropriate legal agreement, which will ensure that potential adverse effects arising from recreational development can be avoided.

Providing the proposed mitigation can be secured there are no implications from increased recreation on the SPA designations, even accounting for other plans and projects.

Solent and Dorset Coast pSPA
As set out above in relation to disturbance, the pSPA is designated for its importance as foraging habitat for terns, rather than for breeding or roosting, with the principal breeding areas in the Solent located some distance from the site. Although breeding coastal birds can be particularly vulnerable to human disturbance, and in particular dog walkers, the principal breeding locations are all located beyond 5.6km from the site and are therefore unlikely to be subject to recreational disturbance associated with residents of the development. In regard to foraging, terns are aerial rather than sedentary feeders, and as such are unlikely to be sensitive to recreational disturbance. Accordingly, it is considered unlikely recreational disturbance would result in adverse effects on tern populations associated with the pSPA.

River Itchen SAC
The habitats and species listed under the SAC citation are not considered to be sensitive to recreational disturbance, and as such, the proposed development is unlikely to result in any significant effect on the SAC as a result of recreational disturbance, either alone or in combination.

Solent Maritime SAC
The habitats and species listed under the SAC citation are generally associated with coastal or intertidal areas that are unlikely to be directly accessed by visitors to these areas. As such, potential for adverse effects as a result of recreational activity arising from the proposed development is considered to be negligible. In addition, it is proposed that a contribution is made towards strategic avoidance/mitigation measures in respect of the Solent and Southampton Water SPA/Ramsar site, which would also offset the potential for effects on the Solent Maritime SAC.

New Forest SAC/SPA/Ramsar site
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, J., Lowen, J. and Liley, D. (2008) Changing patterns of visitor numbers within the New Forest National Park, with particular reference to the New Forest SPA. Footprint Ecology.), indicates that 40% of visitors to the area are staying tourists, whilst 25% of visitors come from more than 5 miles (8km) away. 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 5.1km from the nearest part of the New Forest SAC, SPA and Ramsar site in terms of linear distance and as such, residents of the proposed development are likely to be non-local day visitors. The Footprint Ecology research indicates that visitors within this group make an average of 45 visits per year to the New Forest. It is likely therefore that the recreational pressure arising from the development on its own is unlikely to be significant. However, bearing in mind the high level of new housing planned across South Hampshire there is potential for it to be significant in-combination with other residential developments.

Whilst, it is not possible or desirable to eliminate day visits to the New Forest there is scope to encourage new residents to make use of the existing public open space within Southampton which is both varied and within relatively close proximity to the development. The City Council has given an undertaking to ring fence 5% of the Community Infrastructure Levy (CIL) generated by the development for the improvement of infrastructure within the city's greenways. Peartree Green, and two of the greenways, Shoreburs and Weston are located relatively close to the site, a 2km, 2.8km and 4.7km by road respectively, and it is reasonable to expect the new residents to make use of these sites. In addition, the development includes measures to improve walking and cycling provision in the vicinity of the site and new residents will be provide with a welcome pack containing maps illustrating the locations of local open space, walking/ cycling routes and public transport information.

Following implementation of the measures set out above, it is concluded that any potential effects on European designations as a result of the proposed development will be avoided.

Water demand and effluent discharge

All European sites
Water demand and effluent discharge are largely addressed at a strategic level, and based on the policies set out in SCC's Core Strategy, the accompanying HRA indicates that no likely significant effect as a result of these issues has been identified.

Policy CS20 (Tackling and Adapting to Climate Change) in particular sets out standards in regard to water efficiency. As such, the proposed development will ensure that water efficiency is maximised through installation of high performance internal fittings, as well as rainwater harvesting and greywater recycling systems where viable. Further detail is provided in the Sustainability Statement which accompanies the planning application.

Following implementation of these measures, the proposed development is unlikely to result in any significant effect on the European sites as a result of these issues.

[1] See paragraph 3.15 of the Solent Disturbance and Mitigation Project Phase II bird disturbance fieldwork

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

Conclusions

The findings of the initial assessment concluded that there a significant effect was likely through a number of impact pathways. As such, a detailed appropriate assessment has been conducted on the proposed development, incorporating a number of avoidance and mitigation measures which have been designed to remove any likelihood of a significant effect on the identified European sites.

This report has assessed the available evidence regarding the potential impact pathways on the identified European sites. It has also considered the effectiveness of the proposed avoidance and mitigation measures. It has been shown that, provided that the proposed mitigation measures are implemented, the significant effects which are likely in association with the proposed development can be overcome. A detailed mitigation package is set out in section 9 of Meridian Gardens: Report to Inform a Habitats Regulations Assessment, October 2014, Aspect Ecology. These measures, which are summarised below, should be secured through a legal agreement or planning conditions:

- A Construction Environment Management Plan covering:
- Piling methodologies
- Timing of works
- Noise levels
- Control use of fuel, oil and other chemicals
- Control of surface water runoff
- Dust suppression
- A financial contribution to the SRMP
- Improvements to walking and cycling infrastructure in the vicinity of the development.
- Provision of information on local parks and routes to them
- A detailed lighting plan
- Building design aimed at reducing collision risk

In addition, 5% of the Community Infrastructure Levy (CIL) for the development will be ring fenced for recreational improvements in the Shoreburs and Weston Greenways and Peartree Green.

As a result, there should not be any implications as a result of this development in relation to either the conservation objective of the SPAs to "avoid the deterioration habitats of the qualifying features, and the significant disturbance of the qualifying features, ensuring that the site is maintained and the site makes a full contribution to achieving the aims of the Birds Directive" or to the conservation objective of the SACs 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.”

European Site Qualifying Features

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 alpine
- 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.

River Itchen SAC

The River Itchen SAC qualifies under Article 3 of the Habitats Directive by supporting the following Annex I habitat:

- Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation

River Itchen SAC also qualifies under Article 3 of the Habitats Directive by supporting the following Annex II species:

- Southern Damselfly Coenagrion mercurial (primary reason for selection)
- European Bullhead Cottus gobio (primary reason for selection)
- White-clawed Crayfish Austropotamobius pallipes
- European Brook Lamprey Lampetra planeri
- European River Lamprey Lampetra fluviatilis
- Atlantic Salmon Salmo salar
- European Otter Lutra lutra

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

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 shrublayer (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 scare wetland species. The whole site complex, with its examples of semi-natural habitats is essential to the genetic and ecological diversity of southern England.