

Technical Annex 12N Ornithological Mitigation Measures
Recommended for Inclusion in Construction Phase
Environment Management Plan (CEMP) for Hayle Harbour
Development

Ornithological Mitigation Measures recommended for inclusion in Construction Phase Environmental Management Plan (CEMP) for Hayle Harbour Development

During the construction phase standard good house keeping practice will be employed in order to control the release of waste material and liquids into the estuarine environment. Consideration should be given to the provision of materials suitable to contain any spill of toxic material into the aquatic system (booms and sorbants).

Contractors will be made aware of the ecological sensitivity of the estuary during site induction, including a series of *Do's and Don'ts* in terms of types of activity and areas of access.

Timings of works will be scheduled to avoid key periods of ornithological sensitivity, where necessary and practicable. In general, this applies to activities on or adjacent to Copperhouse and Carnsew Pools, wherein the most sensitive period is during the autumn and winter months (October to March inclusive).

Where it may be necessary to impound water in the Pools during construction (e.g. coffer dam around sluice works), then the works should be carried out during periods of lower ornithological sensitivity. The tide level should be maintained at around a 'upper mid water', so as to minimise the effect of prolonged exposure to air of intertidal invertebrates, whilst maintaining an area of upper shore intertidal for limited feeding and roosting activity.

Noise, and in particular, sudden noise, will be avoided where possible, particularly in the areas of key ornithological importance and periods of key sensitivity (see above). The responses of avifauna to noise suggests that at levels in excess of 84dB(A) there is a flight response in waterfowl, whilst below 55dB(A) there is no effect, although for levels between 43dB(A) and 87dB(A), the results are less clear, but with ultimately no effect on levels of diversity recorded (Smit & Visser, 1993). However, habituation can occur to regular noise and or visual stimuli, particularly in birds that have remained in an area for sometime i.e. over-wintering (Davidson & Rothwell (1993). As such, where possible, noise levels will be restricted to below 80db(A). Where generated noise levels at key points for sensitive receptors are anticipated to be above this (eg Copperhouse Pool and Carnsew Pool), and cannot be practicably reduced, then such activities will be undertaken outwith the key period of sensitivity.

Temporary site lighting will be screened and directed following standard best practice to avoid spill onto the aquatic areas of the system, unless required as part of the construction work for HSE reasons. Similarly vertical spill should be avoided as best practice.

Where works are carried out adjacent to a site of high ornithological importance, screening of the operation will be required during periods of key sensitivity. Screening should be designed to mask personnel activity, but not necessarily of plant, as the height of screening required to mask the latter activity will require substantial structures which in their right may generate disturbance impacts during construction. In any case, monitoring of avifaunal responses to visual stimuli at various estuarine sites (e.g. IECS, 1999), has identified a substantially greater disturbance impact to personnel activity than to plant operation.