This case study focuses on the Upgrade of Thames Water's Deephams Sewage Works in North London.

Key issues for the project were the challenge of building new primary and secondary treatment streams on the site, whilst continuing to operate the sewage works to its existing discharge permit standard. The other key environmental issue for the EIA, for local residents and for other consultees, was reducing odour released from the sewage works.

This case study considers the development of the Environmental Impact Assessment. Early contractor involvement was used to develop the design and the case study explains how environmental parameters were set as part of the design and build contract to assist in addressing potentially significant environmental effects at an early stage of the project.

Purpose of the project
Thames Water Utilities Ltd own and operate the site. The development is required to allow the sewage works to meet a new discharge permit standard set by the Environment Agency for treated effluent discharged by the sewage works. The new permit will come into force in March 2017, which the sewage works in its current operational format will not be able to meet.

Description of the project
Deephams Sewage Works is Thames Water’s 4th largest sewage works and lies within the London Borough of Enfield in North London. The Upgrade will be built entirely within the footprint of the existing sewage works. Construction of the development is planned in phases to allow the current works to remain operational and is planned to start in 2015 and complete in 2018. The works will operate to the new environmental permit by March 2017. The sewage works is closely surrounded by residential and industrial development but also bordered to the east by the Lee Navigation, Lee Valley Regional Park and Chingford Reservoirs Site of Special Scientific Interest.
Lessons learnt

Following a detailed site selection and options appraisal, the existing sewage works was confirmed as the preferred location for the Upgrade.

Thames Water shortlisted two design and build contractors to develop alternative designs for the Upgrade through a competitively tendered process from which one preferred contractor was selected.

The aim was then to address planning and environmental impacts through design from the tender stage onwards and the tender documents therefore provided both contractors with a list of environmental issues that needed to be considered in the development of their bids. For example, as this was a rebuild of the sewage works effluent streams, this included the requirement to design the Upgrade to significantly reduce odour work. It was also important to avoid work in an adjacent Site of Metropolitan Importance for wildlife.

Environmental and sustainability criteria were then used in the selection of the preferred contractor through a process which allowed the client team to challenge the two contractors’ designs and make further improvements to the final submitted tender proposals.

The preparation of the EIA then started once the successful contractor had been appointed and a broad design agreed upon.

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By setting environmental parameters that the tender designs had to meet and through using environmental and sustainability criteria in the selection of the contractor, the successful contractor’s design had the following benefits:

1. Less ground disturbance and demolition by re-using the bases of existing tanks, avoiding greater groundwater and archaeological impacts and requiring fewer Heavy Goods Vehicle movements;
2. Odour control installed on the most odourous elements of the sewage works significantly reducing effects to nearby sensitive receptors;
3. No off site storage compound; and
4. Retention of screening (trees and scrub) along the northern boundary of the site.

Through this process, adverse environmental effects of the Upgrade were avoided through design. Detailed public and stakeholder consultation was also a key factor in addressing concerns about the development. In particular, site tours during consultation were well received allowed local people and stakeholders to better understand the site and provide input to the scheme. They will continue throughout the construction of the development.

The development received planning permission in February 2015.