

Case Record



BEP Sellafield

Location	Sellafield, Cumbria, UK
Client	BNFL
Main Contractor	Carillion Infrastructure Management

Environmental Initiatives

Waste reduction	Close supervision and re-use of materials
Pollution prevention	Control of diesel and oils
Water conservation	Recycling and re-use on site

Waste Reduction:

There have been two ways of tackling waste reduction on site. Firstly by keeping close supervision of the operations and secondly by re-use of materials as far as practical.

Waste that eventually has to be removed from site is segregated into timber, metal, paper and general waste. Waste control stations have been set up throughout the site at strategic locations. The skips are clearly marked with the contents, with supervisor's allocated to maintain them in good order.

Timber waste is only deposited within recycling skips on instruction from the Construction Manager when he is satisfied that no further use can be made of the material. Special holding areas have been made for storing materials waiting for re-use on site.

Pollution Prevention:

Another important environmental consideration on this project is the control of oil and diesel used for the maintenance and fuelling of machines and equipment.

Bulk storage of diesel and oils is provided above a containment bund. This is constructed of reinforced concrete with capacity for 120% of the oil products that can be stored above on a steel mesh floor.

The whole bund is roofed over and enclosed on three sides to prevent rainwater ingress. Any water or oil drips that do make their way into the bund, are monitored for quantity (depth). When the 110% remaining capacity level is reached, the bund is pumped out by a special waste tanker for transfer to the waste disposal site.

Water Conservation:

At the outset of the project it was decided that minimising the use of raw materials should be given a high priority in the construction activities. Water is one material, which is used in large quantities. Any saving in this was considered a significant benefit, with 110 litres in every cubic metre of concrete and 62,000 m³ in the job.

With this in mind the batching plant and concrete pumping arrangements were laid out to maximise the collection and recycling of water. Firstly, a 100mm thick concrete slab was constructed over the batching plant yard. This was laid to fall to a single collection pit on one corner of the compound. The concrete slab allowed any wash-down water from the plant to be collected, together with any rainwater.

The water used for the washing out of the static concrete pumps located in the same area is pumped via the sediment settling ponds back in the same collection pit in the batching plant yard. Water from this pit is firstly drained into a further catch-pit to remove any sediment, from there it is pumped up into the supply storage tanks of the batching plant.

Water, from these tanks, is used in both the production of the concrete and the cleaning/maintenance of the equipment. Generally, sufficient water is recycled or collected to supply the batchers' requirements with top-up supplies only being required on some of the larger pours or in times of continued dry weather.