



Infrastructure Team

TPS Consult - Stansted Airport Reduction of Resources

TPS Consult, Carillion's architectural business group, as part of a framework team within BAA has constructed several car parks within Stansted Airport. In a continuing focus on improving the environmental performance of the construction process, the team suggested that recycled ASHphalt, incinerator ash, could be used instead of virgin aggregates.

Location Stansted

Client BAA

- 5400 tonnes of virgin aggregates saved.
- Pioneering use of ASHphalt incinerator ash materials.
- Backhaul system used to reduce lorry movements.
- Saving of £20,000 (6% of the contract value) compared to traditional car park construction process.

It was agreed to trial this new process in the construction of a 6,000 space Long Stay Car Park, which was to be constructed in 2 phases. The majority of phase 1 was surfaced using traditional paving, but several spaces were constructed as trials, using various mixes of ASHphalt.

Following a series of tests, on stiffness and integrity, it was agreed that phase 2 of the long stay would be constructed utilising ASHphalt. The ASHphalt consisted of a mix of 30% ash and 15% RAP ASHphalt. The incinerator ash was delivered using a back haul system, where ash is delivered on the return leg of a trip to collect material for the incinerator.

During the second phase 18,000 tonnes of ASHphalt were laid to construct 4,000 spaces, which resulted in these direct benefits:

5,400 tonnes of virgin aggregates were saved which reduced the use of natural resources. Reduced fuel usage, noise and air pollution levels associated with the transportation.

Rail movements from Leicester to Bishops Stortford were reduced by 4 full trains (21 wagons per train). This led to lower rail costs and reduced fuel usage. Reduction in noise and air pollution levels and no loading, or unloading costs.

Supergage (m² per tonne) savings were noted, which resulted in a 3% reduction in the weight of mixed material produced. These savings also involved reduced burner fuel usage and reduced bitumen usage. Air emissions were reduced and lower use of resources, plant and manpower.

Reduction in road transport usage associated with moving material on or off site benefited all areas of operation. 270 fewer road movements from Bishops Stortford to Hoddesdon. 20 fewer road movements from Hoddesdon to Stansted. This, in turn resulted in lower fuel usage, reduced emissions and air pollution, reduced noise pollution, reduced traffic congestion and reduced wear and tear to roads.

These benefits resulted in a saving of £20,000 (6% of the contract value) compared to the traditional car park construction process.

The application of this innovative new technology with its reduced environmental impacts and contract costs has enabled Carillion to strengthen a key client relationship. TPS Consult and their supply chain partners, Aggregate Industries and Associated Asphalt, have won a new contract to construct a 3,020 space car park at Stansted, which will require the utilisation of 13,000 tonnes of ASHphalt.