

Bardon builds green road

Bardon Aggregate's response to the recent Government road and transport White Papers has been to build "Britain's Greenest Road".

News this summer of Government's plans for roads and the transport networks was awaited by industry with trepidation, given constraints on spending and the Green lobby.

But the White Papers contained a good deal to commend them to a sector concerned about high quality construction and maintenance of the nation's highways, according to Bardon Aggregates.

The need for limited new build was acknowledged and there was sensible emphasis on motorway and trunk road maintenance. But what particularly pleased Bardon was the commitment to non-proscriptive specification – an invitation to innovation that the company is very willing to accept.

"We're a company that likes to

innovate and as such we're very pleased with the White Papers," says Surfacing Business Development Manager Brian Downes. "What Government is saying is that, if a material's engineering properties are right, if fitness of purpose is there, then that material can be used. It is no longer going to support dogmatic prescription."

This provided companies such as his own with "more of a licence to go and talk to clients, to say there are other ways, better ways, of achieving what you want," he says. The White Papers were also effectively opening the door to whole life costing, where the basis of contract award changes from lowest initial price to the most cost effective solution over time.

"They certainly give a boost to the initiatives we're taking, especially those intended to promote Green values," Downes says.

A highly imaginative combination of Bardon's "Green initiatives" – exemplifying the message of the White Papers –

was put to very good use in Dudley during October. Britain's Greenest Road, as Technical & Development Director Paul Phillips describes it, has been built employing three innovative Bardon processes, these being Landrec, ASHphalt and Smatex to give them their proprietary names.

The project involved the reconstruction of 700m of Netherend Lane in Dudley, West Midlands. Core samples taken before work began showed that the original road base included tar, these days deemed to be a contaminant. Tar based products have normally to be disposed of to a licensed dump.

Bardon convinced client Dudley Metropolitan Borough Council that instead of dumping the material at some cost, the arisings from planing the road should be subjected to the Landrec process and recycled, to form part of the new road base or perhaps as footways or hardstanding at other sites around the city.

Landrec is a development of Aggregate Industries (Bardon's parent company) and environment specialist AEA Technology (see Modern Asphalts, issue number 2). The process involves

ASHphalt being laid in Dudley





left and far left: Bardon's Hitec being laid in London's Oxford Street

coating granulated brownfield or blackfield waste with hightech bitumen emulsion from bitumen specialist Nynas to produce a stable cold lay asphalt. Put simply, the contaminated material ends up being coated and safely neutralised.

Bardon has in recent years developed substantial expertise in cold mix asphalt, along with Nynas. This expertise is the key to the Landrec process; and the reason why Landrec is a particularly suitable treatment for tar.

"Tar bound arisings cannot be recycled through a conventional hot mix plant because of the possibility of volatile emissions," Phillips says. "Landrec being cold mix meant that it presented Dudley MBC with an economic, environment friendly option."

The road base formed at Netherend Lane was 110mm thick. On top of it, a new 70mm base course was laid using ASHphalt, an asphalt that uses incinerator ash to replace upwards of 50% of the virgin aggregate. The ash came from Dudley MBC's own waste incinerator, the tonnage supplied representing several days of production at the plant.

"It would normally have been sent to landfill," Phillips says. "We had it processed through a specially designed demetaling plant in Castle Bromwich before incorporating it into coated roadstone

at our own coating plant at Bardon Hill."

Use of ASHphalt represents a "double whammy" in environmental terms, he says. "Firstly, it saves the cost of landfill disposal, plus space at the landfill site; and secondly, by taking the place of stone, the presence of the ash means far less virgin aggregate has to be dug up and used."

The percentage of ash allowable for a particular mix depended on local circumstances and the traffic category of the road, but Bardon had been successfully using ASHphalt containing up to 70% of ash, the company claims.

Smatex has been used for Netherend Lane's wearing course, at 30mm thick about two thirds of the thickness of the original road surface. The product, developed by Bardon from German stone mastic asphalt technology, provides an extremely durable and wear resistant surfacing. Its use is particularly appropriate where heavily trafficked urban roads are prone to wheel tracking and rutting.

Smatex was chosen for Netherend Lane because of its strength and the fact that it is an economic alternative to conventional HRA and chippings. Being a thin surfacing means that the product takes fewer resources to make, bestowing the kind of envi-

ronmental benefits claimed above for ASHphalt.

Most importantly, though, Smatex was chosen for the quiet running characteristics displayed at its surface. Netherend Lane is well trafficked and passes a local school. Quietness was very much a factor in the choice of Smatex, as were inherent spray reduction and skid resistance qualities, although these two perhaps to a lesser degree.

The project took six days and its Green credentials provoked a great deal of media interest, both locally and nationally. Articles plus radio and TV features attested to the level of public interest in road maintenance being carried out in the most environmentally friendly manner.

"We have had a great deal of cooperation from Dudley MBC. I believe it is a great credit to them that this Green road venture – the first of its kind – should be taking place on one of their roads," Phillips says.

Bardon has other innovative products and processes under development or trial, according to Brian Downes. "This Government is actually doing well by the highways sector, giving us the freedom to take technology forward for the benefit of everyone and everything, including the environment."