

# Conducting business with care

**ARC's environment friendly actions range from giving up quarrying rights within sensitive National Parks to developing high efficiency materials which make the best use of resources**

ARC is one of Britain's biggest producers of natural and recycled aggregates as well as construction materials and as such quarries an awful lot of stone. It has the potential to impact hugely on the environment through its operations and this is well recognised within the company.

At ARC, there is a marked determination to minimise the adverse effects of quarrying and using aggregates, and to maximise the benefits to the community. Acute awareness of environmental issues has become part of corporate culture with a raft of measures in place to ensure the company always conducts its business with care.

"Our responsibility for environ-

mental care is right at the top of ARC's corporate agenda," says Technical & External Affairs Director John Mortimer.

A formal environmental policy has been drafted which covers all aspects of the company's operations, both as a producer of virgin and recycled raw materials, and a supplier of value added products such as asphalt.

"ARC's intention is to achieve a balance between meeting Britain's need for construction materials and our wish to protect the natural environment," says Mortimer. "We produce materials for the built environment which provide benefit for society as a whole – you could describe this as positive environmental impact. What we endeavour to do is to reduce or eliminate the negative impact."

Getting rid of the negative takes many forms. ARC has firm and effective policies on the restoration of pits and quarries, giving back many of the former to agricultural use after sand and



*ARC's Technical & External Affairs Director, John Mortimer*

gravel has been extracted, and actively encouraging a return to nature – and thereby social amenity – of its more substantial workings. Most recently, the company has said it will not reopen three currently dormant quarries in Snowdonia and the Yorkshire Dales, despite there being many million of tonnes of reserves still exploitable.

"We appreciate that these National Park areas are particularly environmentally sensitive.

*Yorkshire Dales National Park Chairman Robert Hesletine celebrates ARC giving up Ribblesdale's quarrying rights*



The decision was taken never to quarry there again in the public interest," Mortimer says.

Beyond being correct and discreet in its winning of aggregates, ARC is increasingly conscious of the need to employ the materials it quarries in the most economic manner, using the basic minimum to satisfy the intended purpose, and not making use of top quality stone when a less superior one will do. Recycling of reclaimed construction materials also figures very highly in the company's general scheme to reduce negative environmental impact.

A distinct entity, ARC Recycled Materials works with ARC's pits and quarries and others within the group including the waste management division Greenways to maximise the opportunities to reuse waste materials. The view is held strongly within the parent company that recycled materials will constitute an ever increasingly important source of roadstone.

The necessary technology to fully exploit recycling is not yet totally in place, the company believes, and efforts are being made corporately to address this. "As the expertise is developed, and confidence in such matters as the design values and performance of recycled materials grows, then total recycling of pavement during roads maintenance, for example, will become the norm," Mortimer says.

"When this happens, we will be among the leaders offering recycling services, helping to reduce the demand on virgin resources."

Endeavouring to attain sustainability as an industry is the responsibility of all those operating within the sector, Mortimer believes. As he puts it, "a sustainable industry is a responsible industry".

Making better use of materials for the benefit of the community at large is another major plank of ARC's environmental policy and

**ARC is playing a full part in developing new, modern asphalts that impact on the environment in a positive way. The latest material the company has been involved in developing is Super Porous asphalt – a thin surfacing with low spray characteristics designed to satisfy Kentish apple growers!**

The Super Porous is being used on the A289 Wainscott Northern Bypass, a new road stretching 6.5km around the north western quadrant of the Medway Towns linking the A2 with the recently completed Medway tunnel.

Client Kent County Council was heavily involved in materials choice. A section of the road runs by valuable orchards and there were worries expressed locally that spray from the carriageways might adversely affect the fruit.

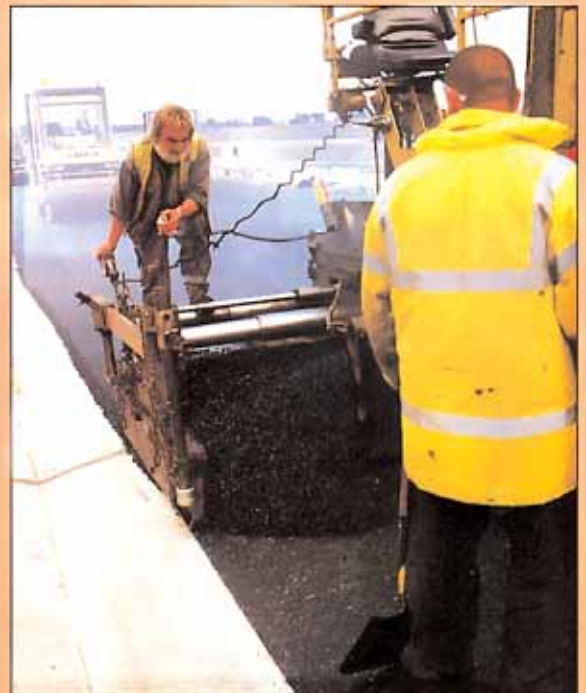
Kent came up with a performance specification for what amounted to a low spray thin surfacing to be laid adjacent to the fruit trees. Mean air voids, hydraulic conductivity and 30mm layer thickness were all carefully defined.

ARC had already bid for the full £6M surfacing contract, its tender based on HRA wearing course and Tuffgrip thin surfacing.

"For the orchard section, we submitted a proposal for a 10mm gap graded porous material which used stone from Cashel in Northern Ireland, BP's super modified bitumen and a polymer modified emulsion tack coat by Esso," says ARC Surfacing Contracts Manager Patrick Hughes-Gage.

The material passed a site trial; and ARC got on with supplying and laying it, as part of its total contract. Of the 140,000t of material the company supplied for the road, 7000t was made up of the Super Porous.

"The Super Porous is really good," says Hughes-Gage. "Apart from low spray, it provides a truly superior running surface in terms of surface regulation. The material is very quiet to run over."



*This Kent road benefits from the material's low spray and low running noise qualities*

the company believes the time is ripe for an imaginative approach to the development of material systems.

"We have a growing opportunity – thanks to legislation, PFI, performance specifications and so on – to be innovative, to produce road building materials that provide better value, that are more durable, last longer, that have better surface characteristics with increased user safety combined with lower noise and spray levels," Mortimer says. "Our Highways Agency-approved thin surfacing material Tuffgrip is a good case in point, as is the Super Porous asphalt we have produced using a special BP binder (see box alongside)."

Major advances have already been made by the industry in road materials. Mortimer points to recent research sponsored by the Quarry Products Association and Refined Bitumen Association at TRL. This shows how pavement layer thicknesses can be reduced by almost 40%. "That really represents a significant reduction in the amount of aggregates that are needed," says Mortimer.

Asphalt pavements can now be designed for a life in excess of 40 years, with no structural maintenance or replacement of road base until well into the future. "Here again, the saving in aggregate is a major environmental benefit," he says.