



Alcoa's innovative new by-product is used in the construction of the new Perth to Bunbury Highway road network.

# Bauxite by-product is put to good use

HAYDNTUIA

ALCOA has developed a system in which by-products from the mining of aluminium are processed into sand.

The company's global Technology Delivery Group has invented a carbonation and wash system to process bauxite residue, producing a by-product known as red sand.

The innovation comes at a time when construction companies are looking for alternatives to natural sand as supplies of the commodity decline in the South West.

Alcoa's residue technical manager Dr David Cooling said the red-coloured sand originated from bauxite residue and was essentially just crushed rock.

"Just as Alcoa's actual product, aluminium, is endlessly recyclable, we've found ways that our

by-products can be useful to the community," he said.

Dr Cooling said research spanning 20 years had identified a number of possible sustainable uses for bauxite residue but the sand was one of the most practical.

"Not only does red sand have the potential to be a cost effective alternative to general purpose sand, it has also shown to be a high quality construction sand thanks to its excellent drainage and strength characteristics," he said.

The recovery and commercialisation of red sand could have a range of potential benefits and be a viable substitute for increasingly scarce supplies of quarry sand, decreasing the clearing of natural bushland for sand quarries and reducing the requirement for residue storage facilities.

Trials facilitated by the Coop-

erative Research Centre for Sustainable Resource Processing have consistently shown bauxite residue has the potential to become a useful material.

The new Perth to Bunbury Highway road network incorporated more than 2500 cubic metres of the sand as part of the road base to widen the Greenlands Road access to the new highway near Pinjarra.

Dr Cooling said the successful future commercialisation of red sand would fill a gap in the marketplace and fulfil Alcoa's goal to reduce the size of its residue areas.

"While 20 years ago our research was driven by a desire to reduce the size of our residue areas - a goal shared by our local communities — the opportunities coming from residue reuse have become much broader," he said.