The Qatari Government is spending billions of dollars on major transport infrastructure projects which is a priority for the next decade. A focus of the Qatar National Vision 2030 is sustainability and moving away from the carbon-based economy which is currently prevalent.

Innovative materials must come into play for the road materials in order to sustain these road networks and effective traffic control. Pavement construction in Qatar has traditionally relied on primary materials, materials such as **aggregates**, and **bitumen** are required to be imported.

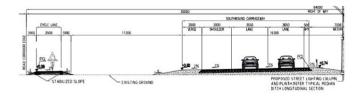
Significantly, more than 15 million tons of aggregates are imported each year to Qatar from neighbouring countries. Large volumes, approximately 20 million tons/year, of waste materials are generated from excavation waste, demolition debris and used asphalt. At the same time there is a shortage of primary materials in Qatar with the current crisis in the Gulf area with an economic and diplomatic embargo against Qatar from its neighbouring countries. This waste material has now been considered a reusable material that can be treated

and reused as an alternative material for paving.

Recycling of waste materials is a very well-established technology in most developed countries. Asphalt is 100% recyclable and is the USA's most recycled material, and Japan's recycle rate is 99%. The continuous increase in discarded vehicle tyres poses an immense problem contributing to environmental pollution in Qatar. The magnitude of this issue can be drastically reduced by incorporating **Crumb Rubber**, obtained from grinding up whole scrap tyres from cars, trucks, or buses into asphalt concrete mixes for use in road construction projects, parking lots, and other areas.



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Bibliography

Cervero R (1998) The Transit Metropolis: A Global Inquiry, Washington: Island Press.

Elhadi HMA (2009) GIS, A tool for pavement management, Stockholm: Royal Institute of Technology.

Omole DO and Ndambuki JM (2014) Sustainable Living in Africa: Case of Water, Sanitation, Air Pollution and Energy. Sustainability, 6(8), pp. 5187-5202.

Tam VY and Tam CM (2006) Evaluations of existing waste recycling methods: A Hong Kong study. Building and Environment, 41(12), pp. 1649-1660.

