

One person's waste glass becomes another person's treasure

September 10 2019, by Danish Kazmi



Credit: University of Queensland

In a bid to preserve the world's second most used natural resource—sand—University of Queensland Ph.D. candidate Danish Kazmi has developed a sustainable solution that could reduce its use in the construction industry.

Geotechnical engineering student Mr Kazmi is investigating using

crushed [waste glass](#) as an alternative to sand for ground improvement during construction, potentially providing a sustainable and cost-effective solution.

It is estimated that nearly one million tonnes of waste glass is stockpiled annually in Australia, and its disposal has become an environmental challenge due to its limited end-uses and non-biodegradable nature.

"Both sand and waste glass have a similar chemical composition, so we expect them to behave similarly when optimally used in geotechnical construction," he said.

"My research looks at the performance of waste glass within ground columns as an environmentally friendly alternative to sand columns that are commonly used at the moment.

"These waste glass columns are designed to strengthen the earth below a building and improve its load-bearing characteristics."

Mr Kazmi found using waste glass in this way not only preserved precious sand resources and promoted closed-loop recycling, but it could also reduce the carbon footprint of the [construction industry](#) by cutting down on the amount of [sand](#) that needed to be quarried.

"I have always been passionate about helping to create circular economies," he said.

Provided by University of Queensland

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