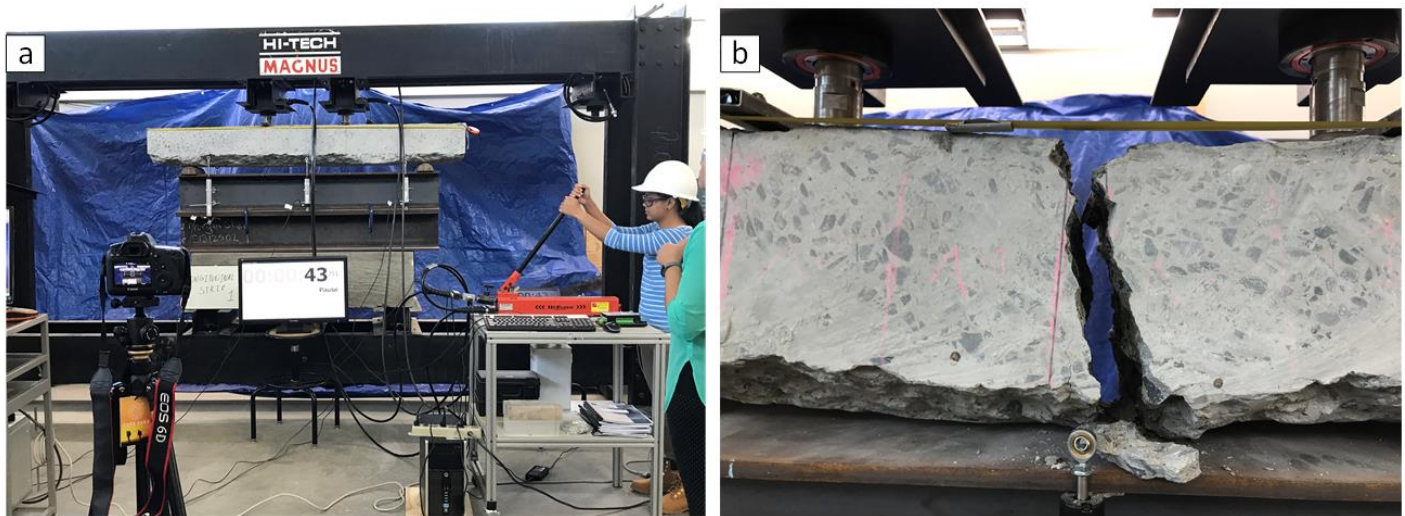


Research project: Sustainable Design of Concrete Bus Pads to Improve Mobility in Baltimore City

What's the issue? A highly durable surface is required for bus pads, the part of the road in front of a bus stop. Concrete is preferable to asphalt, which ripples under the weight of a bus, but if the concrete pads aren't properly designed and constructed, they will crack, requiring expensive, inconvenient repairs.

What did the research discover? Researchers carried out a field study in Baltimore, Maryland, that included extracting two concrete strips in a transverse and longitudinal axis from a bus pad and testing them in the Structures Laboratory of Morgan State University. They developed a numerical model, studied soil-structure interaction, and examined the load-bearing capacity of the current bus pad design. They determined that both the design and construction of bus pads in Baltimore need to be modified.



A four-point bending test is performed to evaluate the flexural strength of the concrete section (left), and the transverse strip fails.

How can I implement this? In their report, the researchers offered design and construction recommendations to lengthen the lifespan of the bus pads and reduce maintenance costs.

Learn more:

The full report is available at

https://www.morgan.edu/school_of_engineering/research_centers/urban_mobility_and_equity_center/research/completed_research/concrete_bus_pads.html

The Urban Mobility & Equity Center is a federally funded research consortium led by Morgan State University and includes the University of Maryland and Virginia Tech. www.morgan.edu/umec