

PLASTIC WASTE USED

IN OUR ROADS

Purpose

In this project the intent is to use the plastic waste used everyday in the university and help build our roads in a more suitable fashion. Since the university grows and expands every year it requires more roads and pathways for student drivers to get around. Directing this waste to other areas would help the university be more sustainable and manage their waste.

WHY?

The passage of time and the seemingly ever-increasing numbers of commercial vehicles that use our road networks cause accumulated damage to road materials, damage which cannot be reversed.

STEPS TO ACCOMPLISH IT

The roads wouldn't be made entirely of recycled plastic, but instead mixed with asphalt for an ideal consistency to keep the road safe for motorists and help it last longer, cost less and avoid cracking. The plastic materials needed for building the Plastic Roads consist mainly of common post-consumer products such as packing of products. The most common plastic used in packing of products is Polyethylene terephthalate (PET or PETE), Polypropylene (PP), and high low density polyethene (HDPE and LDPE). The next step is sorting the collected waste plastic materials. After sorting the collected waste plastic products, the materials are cleaned, dried and shredded. Then the shredded plastic is melted at around 170 degree Celsius. In the melted plastic hot bitumen is added and mixed thoroughly. After the mixture of bitumen and plastic is laid on the road as one would with regular asphalt concrete.

BUDGET

Budget is varied depending on where you construct and how much the labor and everything else costs.



PLASTIC ROADS IN NUMBERS



300 L
WATER STORAGE
(PER M2)



25 kg
RECYCLED PLASTIC
(PER M2)



72 %
MAXIMAL CO2
REDUCTION



80 %
TRANSPORT
REDUCTION