

A contactless bus designed for the pandemic age

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Credit: Pixabay/CC0 Public Domain

A new public transportation design concept aims to give passengers the confidence to take a bus ride by minimizing contact, using anti-microbial fabric and installing self-sanitizing handles.

The "Futurebus," designed by an international team that includes Northwestern University student Ryan Teo, alters the way passengers hop on and off the bus by combining all ingresses and egresses into a single large sliding door. This allows riders to flow in and out freely without contact.

The design won the top prize in the FourC Challenge, an international design competition sponsored by the Shanghai Jiao Tong University School of Design. The competition was held entirely online, allowing the continuity of global experiences for students in an age where COVID-19 has placed heavy restrictions on travel and interaction.

"We got our inspiration from the dandelion flower," said Ryan Teo, who studies [product design](#), engineering and anthropology as part of the McCormick Integrated Engineering Studies program. "The dandelion opens its petals widely, allowing its seeds to be dispersed freely. We wanted to give passengers that same freedom of movement to minimize contact."

The team also alternated seating direction to provide more privacy and made use of affordable, copper-infused fabric known to reduce pathogens.

Handles presented another design opportunity for the team. The new

handles have a stainless-steel tube covered by a disposable plastic wrap. Each time the bus stops, the handle will make a slow 360-degree rotation, allowing the entire surface of the tube to be sterilized by a 254 nanometer UV light strip on the back of the handle.

The prize-winning team also included students from Shanghai Jiao Tong University School of Design, Hong Kong Polytechnic University and Harvard University Graduate School of Design.

Forty teams of contestants from 52 colleges and universities around the world completed six innovative challenges in 24 hours, including in areas of team building, problem solving and prototype production.

Global engagement in a time of crisis

"A lot of us recognize Chicago as a global center of architectural innovation but we may have never reached that without the collaboration that took place in response to the Great Chicago Fire," said John Hartman, clinical assistant professor in the Segal Design Institute and also a judge in the competition.

He gave a keynote speech emphasizing that challenging events, such as the pandemic, could help create previously unimagined innovations.

"Collaboration during these times can speed up the decision-making process and force us to use methods and approaches directly affecting the problem, often flattening the approval chain of command," he added.

Hartman also emphasized the need for global engagement.

"We need to keep promoting the value of global engagement for our students and encourage them to seek out diverse perspectives as they help solve the challenging problems facing our planet," he said.

Provided by Northwestern University

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