



Filling from the bottom prevents the beverage from foaming up, reducing mess and increasing filling speed | Photo source [jamesdysonaward.org](http://jamesdysonaward.org)

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## A ZERO-WASTE REFILLABLE CARBONATED BEVERAGE DISPENSER

 FOOD & DRINK

### A product design student has designed a refillable carbonated beverage dispenser that eliminates the need for single-use cups

**Spotted:** By now, it is common knowledge that single-use plastic is extremely unsustainable. Yet, while many people are happy to walk around with reusable drinks bottles, there are currently no alternatives to single-use plastic packaging in carbonated drinks dispensers. De Montfort University product design student Ross Kelly is hoping to change this with ZERO.

ZERO is Ross's design for a refillable, in-store carbonated drinks dispenser. The vending machine uses bottles that fill from the bottom. Users load the bottle into the dispenser and use a touch-less panel or app to choose their option and press fill. The bottle is secured in place and a one-way valve on the top of the bottle is opened to allow air displacement. At the same time, the bottom valve opens to allow the bottle to fill. Once filled, the one-way valves will close, sealing in the carbonation and contents.

Filling from the bottom prevents the beverage from foaming up, reducing mess and increasing filling speed. Unlike other dispensers, all of ZERO's soda-making components are contained within the machine. This could make it easier for retailers, who would not need to provide any additional installation space or plumbing.

Kelly has not yet designed a prototype product but has entered his design into this year's Dyson Awards. His goals for the product are to see it, "used in the future to break our throwaway culture while responding to user needs and wants. Even having this product digitally shown in the public realm will hopefully interest and maybe challenge how big corporations currently operate; showing there are profitable solutions to world problems."

For many environmental campaigners, eliminating single-use plastics is a major priority. Plastic straws have already been banned in a number of countries, but this is just the beginning. Innovators around the globe are working on this problem, with ideas such as a way to turn plastic packaging waste into [vegan leather](#) and washable, [reusable bin liners](#) that replace single-use plastic bags.

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## **Takeaway:**

Globally, McDonald's alone serves around 70 million customers. If just two-thirds of them take a fizzy drink, that's 46 million plastic cups that are used once and thrown away – each day. Although this may not seem like a huge issue in sustainability, it is all part of the effort to make every aspect of life more sustainable and close the loop on all types of single-use plastics. A refillable carbonated beverage dispenser like ZERO might also save consumers money and encourage people to buy smaller amounts of fizzy drinks – improving health outcomes as well. Ross also hopes to design a dispensing tower, which would save even more space for use in educational organisations.