



Each bike is modular, which allows for full personalisation depending on individual ability and preferences. | Photo source [Orange Bikes](#)

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## ADAPTIVE, ELECTRIC MOUNTAIN BIKE BRINGS THRILL OF TRAILS TO RIDERS WITH SPECIAL NEEDS

  MOBILITY & TRANSPORT

### The design was based on a pro mountain biker's requirements after she was injured

**Spotted:** Former pro mountain biker Lorraine Truong was injured in 2015 and spent years searching for a bike that could get her back on the trails. Engineer Alex Desmond, having been inspired by a friend's effort to start riding again after an illness, built a prototype of what is now the Orange Phase AD3 eMTB. The initial design was exactly what Truong was looking for, and the adaptive, three-wheeled mountain bike with bucket seat is now available from the UK's Orange Bikes.

Each bike is modular, which allows for full personalisation depending on individual ability and preferences. Importantly, the bike's width is narrower than most other adaptive cycles, making it possible to ride regular mountain bike trails. The bucket seat makes it easier for riders to get on and off the bike and provides essential stability for riders who don't use their legs. Riders can choose between the full-throttle electric or pedal-assist modes.

Truong's bike features an aluminum frame, hydraulic disc brakes and rear shocks, along with other features, all of which add up to a substantial 30 kilograms of weight. The bike can be built to be much lighter, which is part of the importance of the modularity of the design. The two front wheels make it easier for riders to stay upright when turning and maneuvering around obstacles.

Making outdoor play more accessible is an important design challenge and is being met in a number of innovative ways. In India, free [playgrounds](#) are made from scrap tyres repurposed into brightly coloured installations. In the United States, an [augmented reality tool](#) lets basketball players map out a court in disused space.

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## **Takeaway:**

With 28 sports taking part in the Paralympic programme, the opportunities for inclusive inspiration are growing. Technological innovation like the Orange Phase AD3 eMTB makes it possible for groups of mixed abilities to participate together, meaning that competitive adventure-seekers with an injury or disability are no longer automatically sidelined. Increased visibility of these developments creates a virtuous cycle that alerts people to the diversity of physical abilities and possibilities for taking part.