![Urban-Air Port logo] ![Coventry University logo]

Urban-Air Port's collaboration with Coventry University: Experimenting with virtual reality to capture the Air One passenger experience

Urban-Air Port's Founder Ricky Sandhu (Right) with Coventry University's Stewart Birrell (Left) and Andy Street (Centre) Mayor of the West Midlands at the Air One event in Coventry.

- New research paper by Coventry University's National Transport Design Centre (NTDC) examines the first use of Virtual Reality (VR) to evaluate the passenger experience and navigation of Urban Air Port's (UAP) Air One.
- UAP designed and built Air One as a demonstrator in Coventry City Centre with funding from the United Kingdom Research and Innovation (UKRI).
- The NTDC collaborated with UAP during the early design stages to improve the customer experience before Air One was physically constructed
- The NTDC used a VR simulation of Air One to conduct user trials in 2021 during the Covid-19 pandemic.
- Conclusions demonstrate the benefits of engaging users during the early design stage to inform accessibility, navigation, and passenger flow throughout the vertiport. These conclusions have been reviewed by UAP for inclusion in future customer experience design strategies.

Urban-Air Port's innovative vertiport technology, Air One, features extensively in a new paper written by Coventry University. This first of a kind study uses human factors research[i] and VR technology to inform the successful design of infrastructure to support future mobility. The Air One vertiport, built in
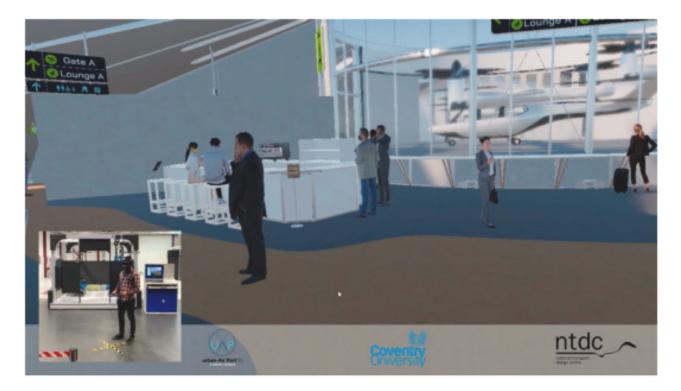
Coventry City Centre in April of this year, served as a demonstrator of sustainable infrastructure for passenger air taxis and autonomous drones for advanced air mobility.

Designed to be ultra-compact, Air One captures the traditional airport environment and scales it down to fit within a condensed footprint, retaining key operational and passenger processing elements such as check-in and security, as well as retail and food and beverage areas to create an enjoyable traveller experience. A focal area of Coventry University's experiment involved evaluating this passenger journey through analysis of interaction with the VR simulation.

UAP developed the Air One design early in 2021 for the UKRI's Future Flight Challenge Phase 2 as part of a successful bid, working with a consortium whose members included Coventry City Council and Coventry University. During this period the UAP design team collaborated with transportation designers at the NTDC to build an immersive VR environment of Air One. UAP provided CAD (Computer Aided Design) models of the infrastructure, which NTDC used to create a 3D environment – much like a computer game – which volunteers for the study could then navigate using a VR headset.

Conducted during the Covid-19 pandemic and under safely controlled conditions, participants in the experiment were given 'customer journey scenarios' to complete, for example, visit the Urban-Air Port Café, buy a coffee and then go to your gate to board an eVTOL (Electric vertical take-off & landing) vehicle. Users were then asked to navigate the virtual Air One using signage and wayfinding created by the NTDC. An analysis of the volunteers' reactions and responses to the virtual environment was assessed to ascertain the level of accessibility and ease of navigation, providing an insight into the effectiveness of the vertiport layout and wayfinding system throughout the infrastructure, a key element in vertiport customer experience.

First person VR view of the Air One infrastructure, insert shows the experimental setup

Ricky Sandhu, Founder & Executive Chairman at Urban-Air Port said: "We're delighted that Air One has played an important role in Coventry University's research into future mobility infrastructure and human interaction. At Urban-Air Port we believe customer experience is key. Our mission is to bring seamless zero-emission journeys to our towns and cities – cleaner, greener and quicker intermodal travel – utilising a more compact vertiport footprint to provide all the benefits of a traditional airport. Our collaboration with Coventry University's NTDC during FFC2 has resulted in another world-first with the publication of their research. We're confident these findings will prove invaluable in helping to shape the customer experience design for future Urban-Air Ports."

Stewart Birrell, Professor of Human Factors for Future Transport, Coventry University said: "Working with Urban-Air Port at the early design stages of the Air One vertiport ensured that we could maximise the usability and customer experience of this future transport infrastructure. Through our innovative use of VR to realistically represent how a user might interact with the vertiport, we could gain an understanding of 'people exciters' and 'pain points' for future air travel. With this knowledge, we could re-design the user experience for Air One to be accessible, easy to navigate and a pleasure to use."

As Urban-Air Port works with closely with regulators and agencies on certification of vertiport design, human factors research plays an important role in enhancing the passenger experience and accessibility through wayfinding and navigation within future mobility infrastructure solutions. Urban-Air Port looks forward to continue working with Coventry University and the NTDC to explore innovative research methods to engage with future passengers and enhance the design of the customer journey.

To read the fully published research paper by Coventry University please visit the following link:
https://www.sciencedirect.com/science/article/pii/S0003687022001661

Discover more about the Air One event on the Urban-Air Port website: www.urbanairport.com/airone

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About Urban-Air Port®

Urban-Air Port Limited designs, develops, manufactures, sells and operates ground, air and digital infrastructure for new forms of sustainable urban air transport such as air taxis and autonomous delivery drones. Its mission is to remove the largest single constraint to sustainable air mobility – ground infrastructure – in order to create a zero-emission-mobility ecosystem that will significantly cut congestion and air pollution from passenger and cargo transport. Urban-Air Port is recognised as a world leader in the Advanced Air Mobility sector. It recently completed the launch of Air One, a world-first demonstration of its vertiport technology in Coventry City Centre, UK and plans to deliver over 200 vertiports across the world in the next five years – ultra-compact, rapidly deployable, operations hubs for manned and unmanned vehicles providing aircraft command and control; charging/refuelling; and cargo and passenger loading. The company is backed by UK Government and major international partners, including Supernal. Urban-Air Port's team of innovators, aeronautical engineers and aerospace experts have worked at companies including Airbus, Foster + Partners, Arup, JP Morgan, Knight Frank, British Aviation Group, Qinetiq and Uber, and in the UK Defence Sector. Visit www.urbanairport.com for more information or social media through Twitter and LinkedIn.

About Coventry University

Coventry University is a global, modern university with a mission of Creating Better Futures. We were founded by entrepreneurs and industrialists in 1843 as the Coventry School of Design and we continue to have strong links with the public and private sector, providing job-ready graduates with the skills and creative thinking to improve their communities.

With a proud tradition of innovative teaching and learning, Coventry University has world-class campus facilities, the UK's first standalone 5G network and a digital community of learning. Our students are part of a global network that has 50,000 learners studying Coventry University degrees in more than 40 different countries and partnerships with 150 higher education providers worldwide.

We have greatly increased our research capacity and ability with a focus on impactful research, delivered for and with partners, to address real-world challenges and support business and communities to develop and grow.

Over two centuries, we have flourished in Coventry and Coventry University Group now also delivers access to our range of high-quality services and partnerships through bases in London, Scarborough, Belgium, Poland, Egypt, Dubai, Singapore and Africa.

In recent years, we have won many awards and vastly improved our rankings in the league tables that matter to students – but what matters to us is delivering transformational change for our students, partners and communities around the world.

References

https://en.wikipedia.org/wiki/Human_factors_and_ergonomics