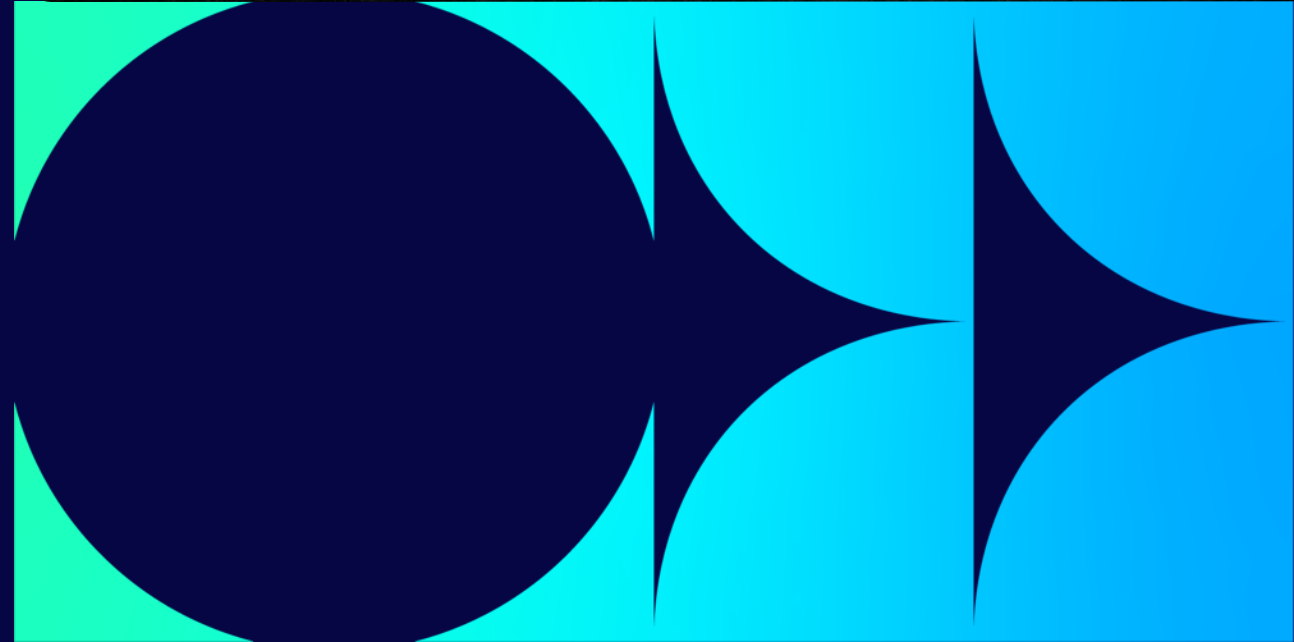
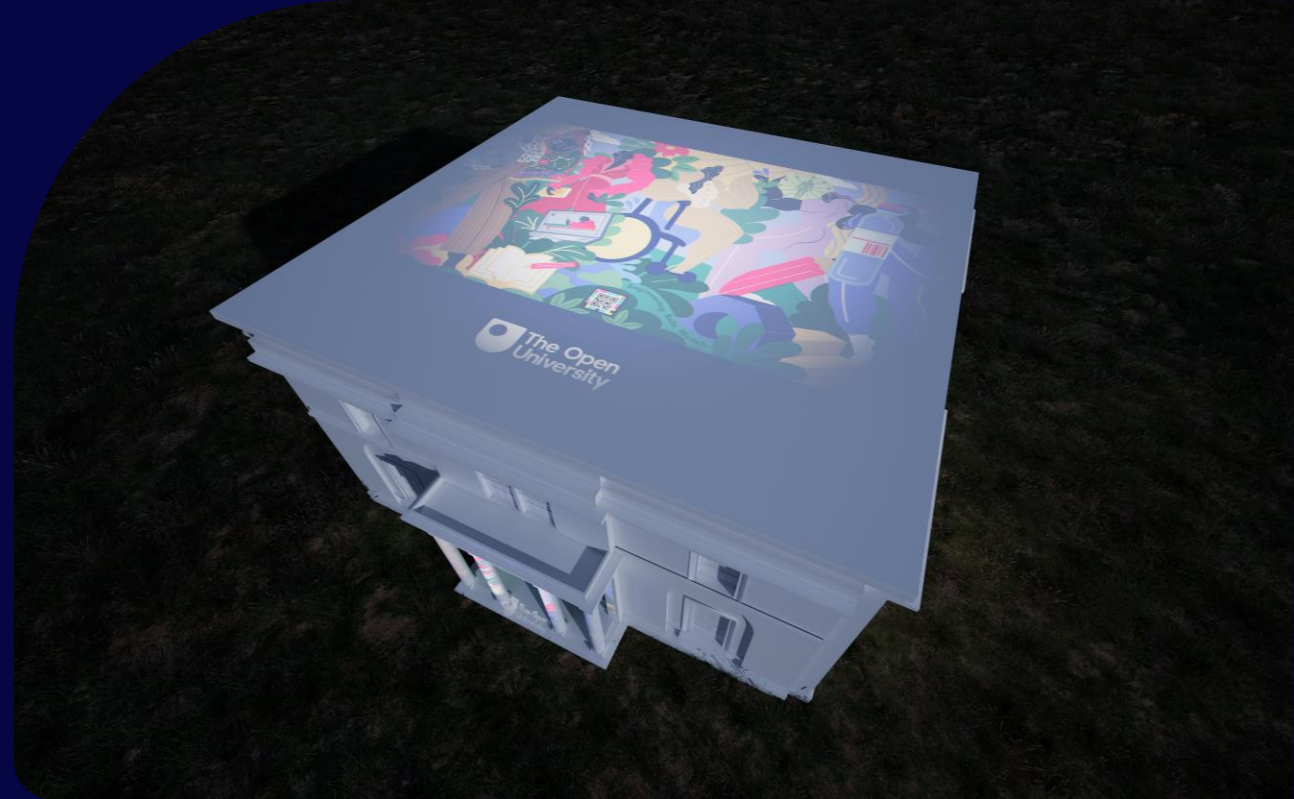


OpenXR Studios

Journey to Extended Reality at the Open University

James Smith
Programme Lead (XR STEM)

19th November 2024



- Since the OU's launch in 1969, more than 2.3 million people worldwide have achieved their learning goals by studying with us.
- We are one of the largest universities in Europe with almost 200,000 students.
- Over 8,000 international students directly studying with the OU
- Our open admissions policy helps thousands of people to achieve their ambitions that they may not have had the opportunity to do elsewhere
- Headquarters in Milton Keynes: Offices, Laboratories, Workshops, Studios

- Practical learning is an essential aspect of many STEM subjects
- Usually taught in the laboratory with staff and students co-located together
- At the Open University we have used innovative approaches to practical learning:
 - Home experiment kits
 - Residential schools
 - Remote and On-screen Laboratories



Home Experiment Kits

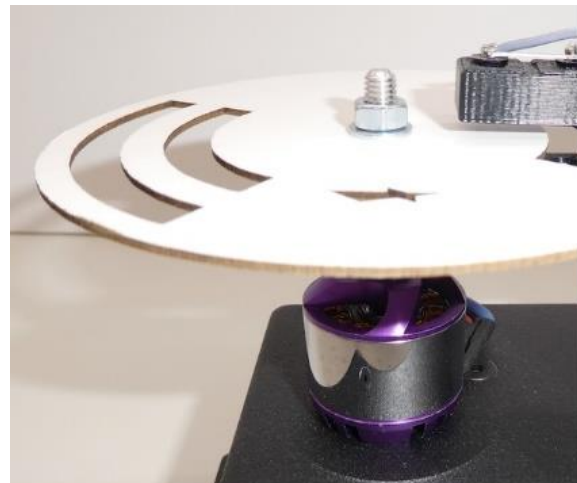
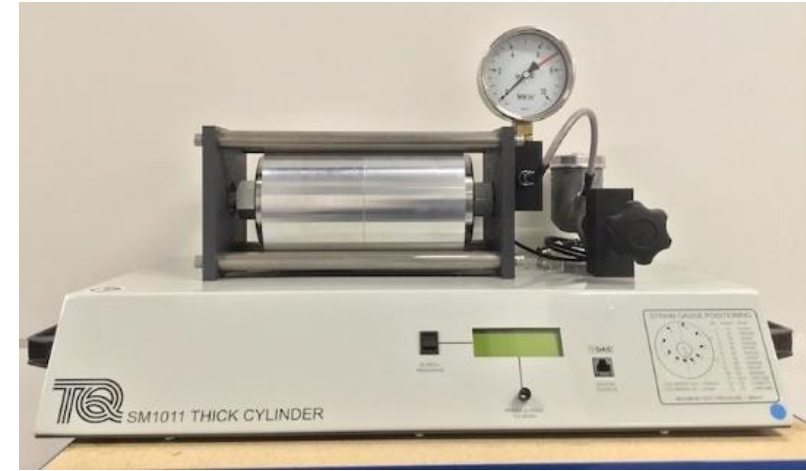
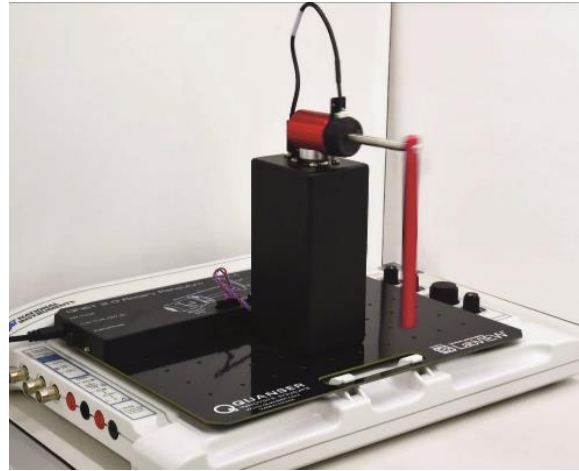


Home Chemistry Kit



Home Geology Kit

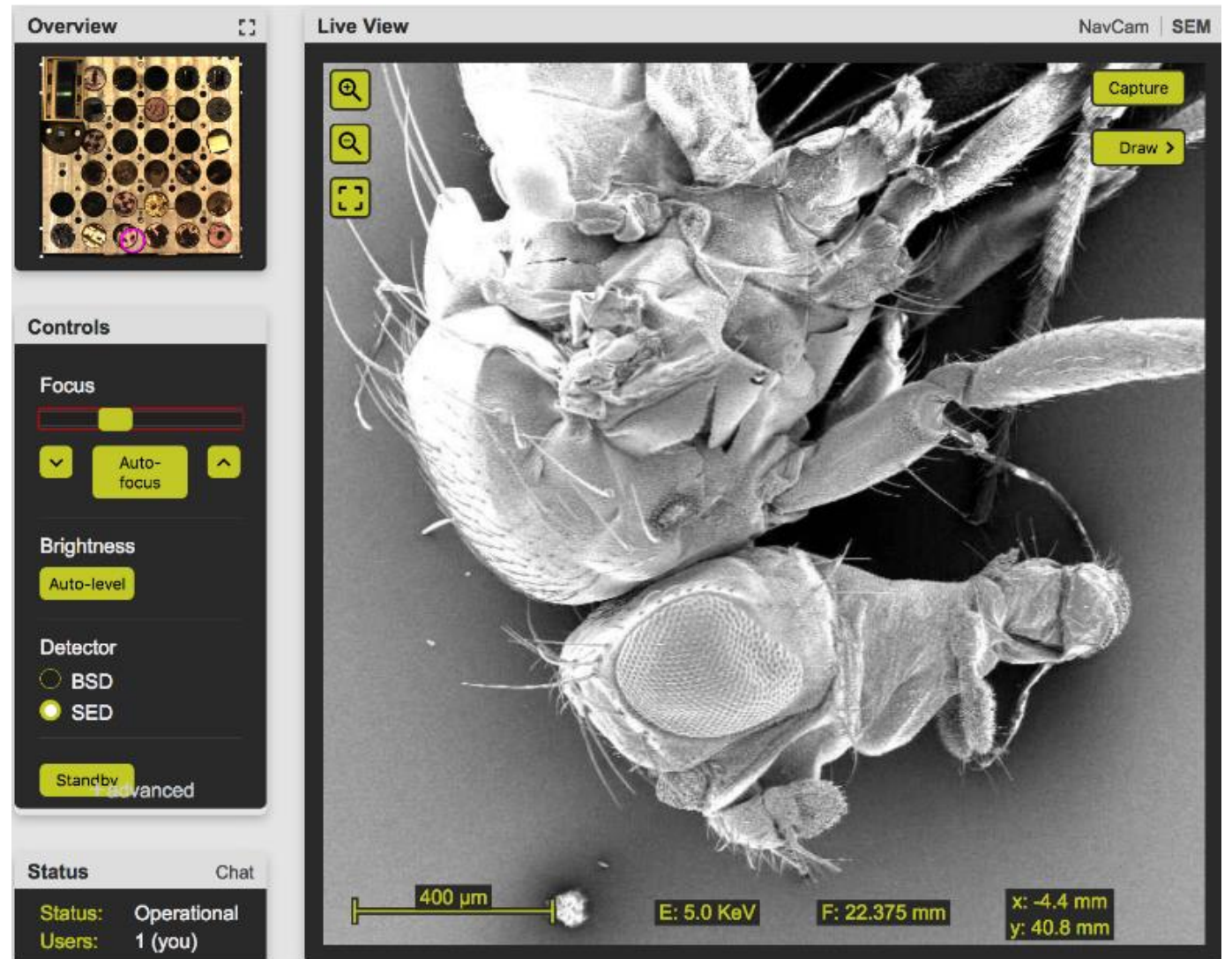
Remote experiments



Remote experiments

Remote control
Scanning Electron
Microscope

Multi-sample stage
allowing a large range of
samples to be analysed
from wherever there is
an internet connection



Behind the scenes in the OpenEngineering Lab

- Equipment is located on our campus in Milton Keynes
- Equipment arranged on multi-level racks
- Multiple sets of each experiment kit to allow all students to use the experiments individually
- Equipment is laid out on a rolling basis to meet the needs of each module



Wind Tunnel Facility

Four remote-control wind tunnels for remote experiments on Mechanical Engineering: Heat and Flow module



Mars Yard



Mars Yard



Rover Planner

Plans

Current Plan
Sol 6

Previous Plans
Sol 5 Sol 4 Sol 3

Snippets (shared between admins)
snippet 8d4d2e74

New

Timeline Sol 5

time.waitUntil
time.wait
APXS
LIBS
mast.powerOn

Energy: 3.444 ▲ /65,000 Wh Time: 23:59:07 /24:00:00 Disk: 4673 /92887 kB

Commands

time
wait
waitUntil

storage
deleteFiles

Submit Plan

Controls - libs.measure (7e7cfbe0)

Angle
45

Points per Row 3

Grid

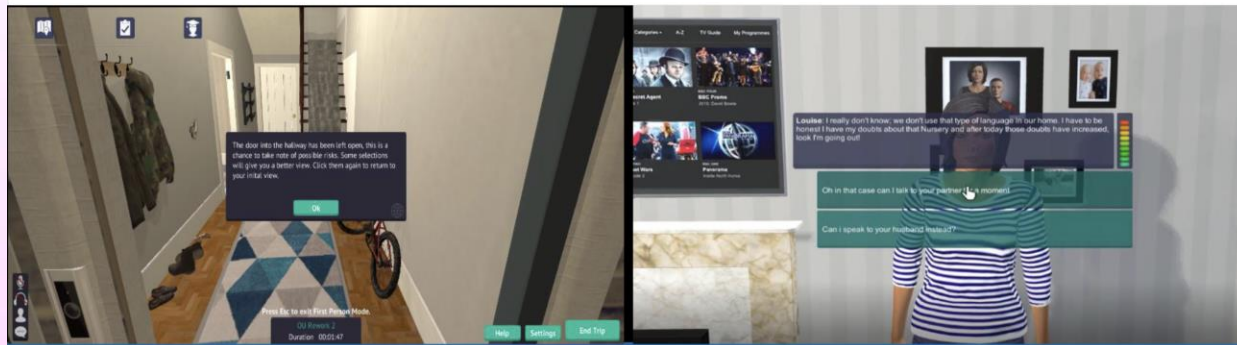
Select files

<input type="radio"/>	f72e7066.0.jpeg	Sol5 16:06:16	-80°	full
<input type="radio"/>	f72e7066.2.jpeg	Sol5 16:06:21	-50°	full
<input type="radio"/>	f72e7066.4.jpeg	Sol5 16:06:26	-20°	full
<input type="radio"/>	f72e7066.6.jpeg	Sol5 16:06:31	10°	full
<input type="radio"/>	f72e7066.8.jpeg	Sol5 16:06:36	40°	full
<input checked="" type="radio"/>	f72e7066.11.jpeg	Sol5 16:06:41	70°	thumb

The screenshot shows the Rover Planner interface. It includes a 'Plans' section with a 'Current Plan' for Sol 6 and 'Previous Plans' for Sol 5, Sol 4, and Sol 3. There is a 'Snippets' section with a shared snippet 'snippet 8d4d2e74'. The 'Timeline' section shows a schedule for Sol 5 with tasks like 'time.waitUntil', 'time.wait', 'APXS', 'LIBS', and 'mast.powerOn'. The 'Commands' section lists 'time' (wait, waitUntil) and 'storage' (deleteFiles). The 'Controls' section for 'libs.measure' includes an 'Angle' slider set to 45, 'Points per Row' set to 3, and a 'Grid' checkbox. A list of files is shown with their names, timestamps, angles, and types. A thumbnail image of the Mars Yard scene with a grid overlay is also visible.

Early immersive / XR initiatives

Virtual Home Visits for Social Workers 3D and VR Training at the Open University



Practicing vital social work skills in a safe and immersive environment

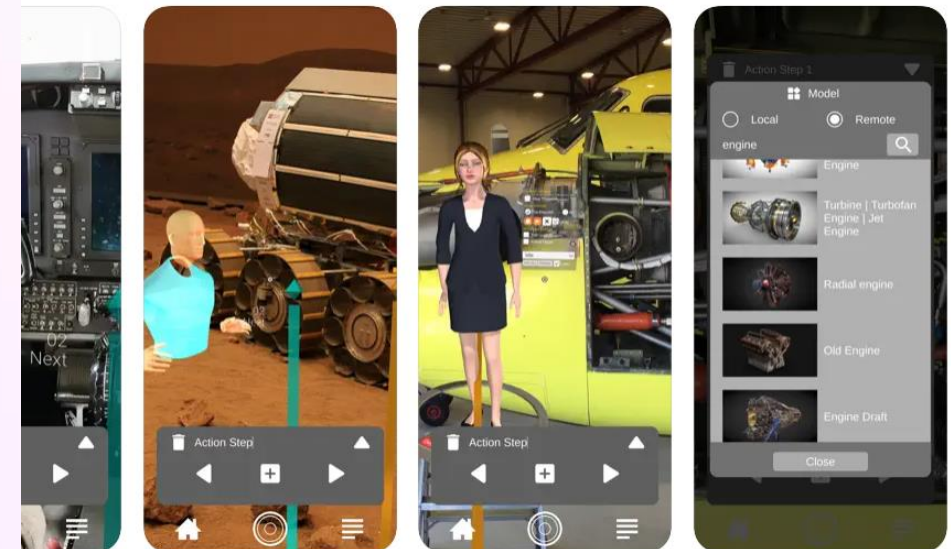
The Open University
BBC

SECRETS OF THE HUMAN BODY

Bring the human body and its astonishing complexity to life with the help of augmented reality

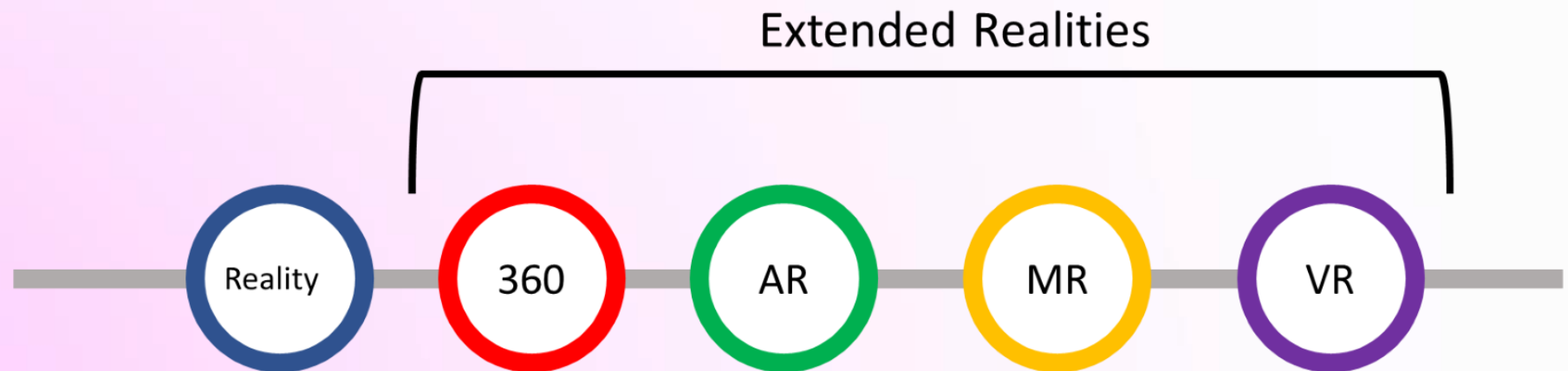
Bring your postcards to life...

- 1** **DOWNLOAD**
Download Zappar app onto your smartphone or tablet.
- 2** **SCAN**
Scan the zapcodes to see the organs appear in 3D.
- 3** **ZAP**
Watch the brain, heart and liver come to life.



OpenXR Studios: at a glance

- ▶ £5.8m capital investment from OfS + OU staff resource
- ▶ Builds on our current capability and practice: step change
- ▶ Coordinates OU efforts in Extended Reality
- ▶ Enables learning to be situated in authentic contexts from field sites to clinical settings
- ▶ Develops the XR educational technology agenda for OU-standards on accessibility, equity and inclusivity



OpenXR Studios: at a glance

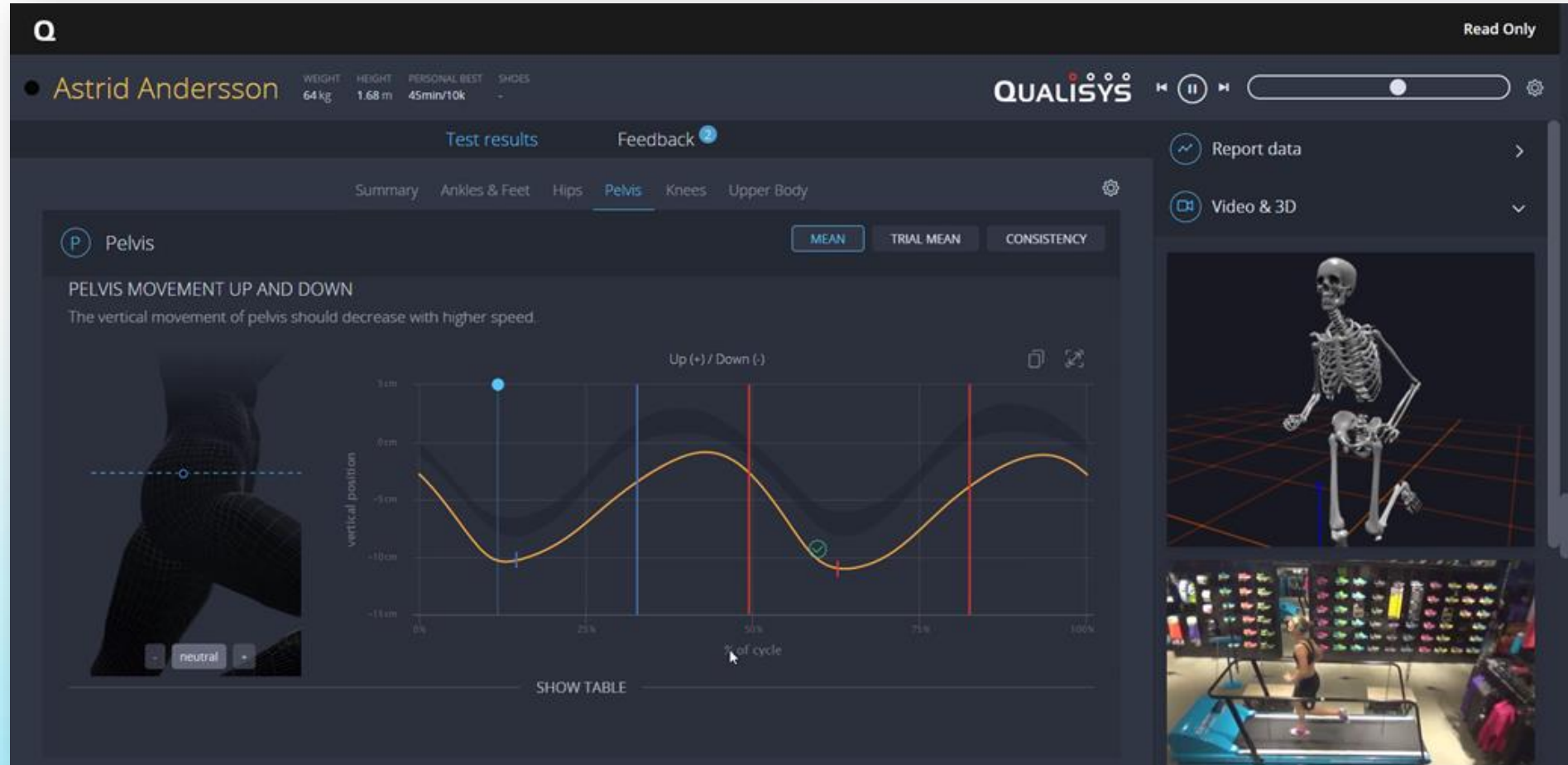
- ▶ Redevelopment of Jennie Lee Building at OU campus in Milton Keynes
- ▶ 3 New studio areas:
 1. Virtual Production
 2. Volumetric Production
 3. Motion Capture



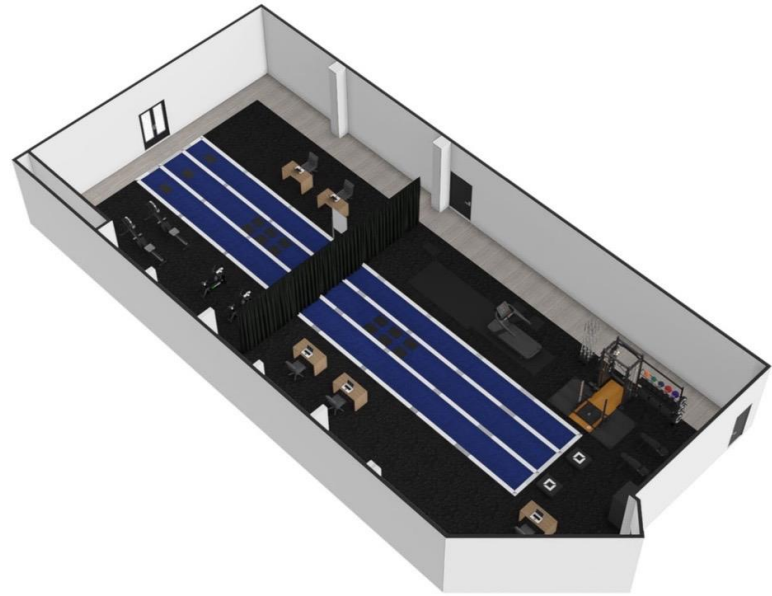
Motion capture



Motion capture



Motion Capture



Virtual production



Virtual production



Virtual production



Virtual Production



Volumetric capture



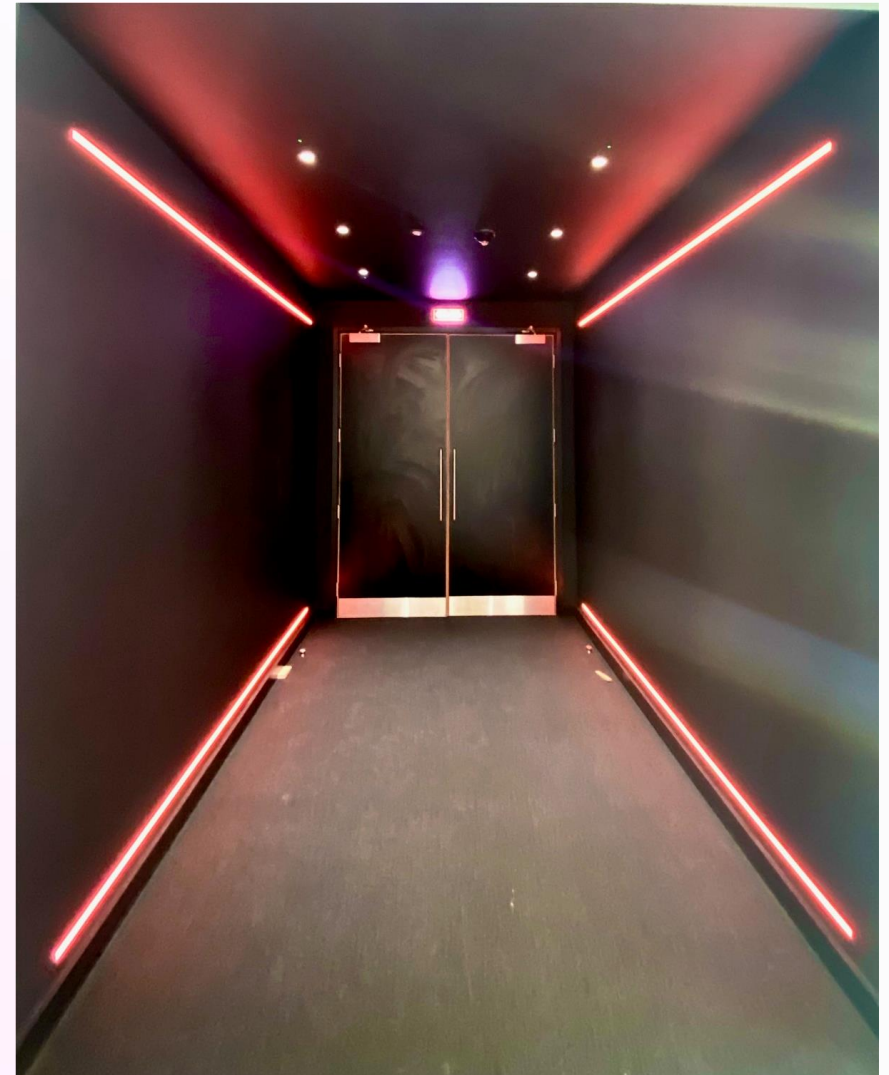
anything you can imagine in the real world can be duplicated

YOOM

OpenXR Studios: Open for business

- ▶ Handover of Studio Space late '24
- ▶ Technologies installed by Mar '25
- ▶ Launch April '25

- ▶ Partnerships
- ▶ Commercial hire
- ▶ Research
- ▶ Outreach



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The Open University

OpenXR Studios