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The 360 Lab

Josh Wolstenholme and Christopher Skinner
University of Hull, Energy and Environment Institute, United Kingdom of Great Britain – England, Scotland, Wales
(j.wolstenholme-2018@hull.ac.uk)

Flooding is a major risk to lives and properties globally and this risk is increasing because of several factors, not least the increase of sea level and changes to patterns of precipitation due to climate change. Whilst flood management interventions can reduce the risk and the impact of flooding, it is not possible, and never will be possible, to stop flooding completely and this necessitates a public that is informed and equipped to take actions to increase their personal resilience.

Successful learning in Geosciences requires 3D thinking yet many of the tools used by educators are 2D visualisations, relying on the student's individual ability and imagination. There has been an increasing use of interactive 3D visualisations, particularly of geological outcrops, yet the methods used to produce these either rely on expensive equipment or processing using high-specification machines. The 360 Lab uses new functionality offered by state-of-the-art tablets to rapidly capture high-resolution 3D scenes of flood management interventions, for example, woody dams.

The 3D scenes were used to create interactive models of the flood management features, allowing people to get, virtually, 'hands-on' and explore them. The 3D models are fully compatible with virtual reality headsets. Guided tours of schemes have been developed to be used by schools, showing how features are installed and providing a focus to discuss how they work and how effective they might be. This overcomes challenges to accessing such locations, including location, budget, accessibility, and Covid-19 related restrictions. Future developments include using the rapid scans to create 3D printed models of features for face-to-face learning and scaled experiments.