

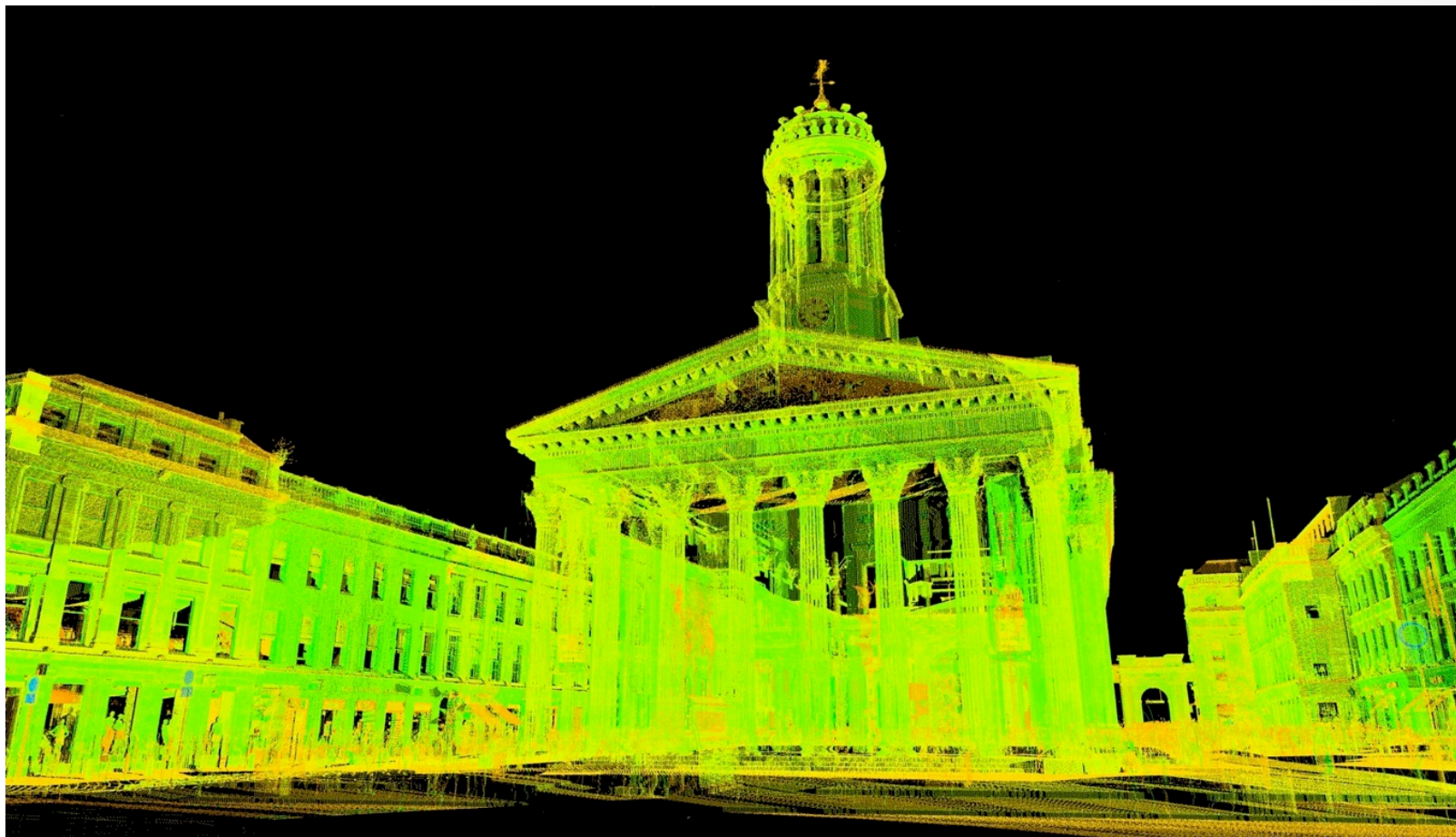
Revolutionising Heritage and Medical Visualisation:

Ultra High Definition Showcase



What is 3D Laser Scanning?

- ▶ Non-contact, rapid, accurate and objective method of documentation/recording of as-built architectural heritage and ancient monuments in their environmental setting.
- ▶ Laser beam scans surfaces.
- ▶ The returning, reflected laser light is used to compute distance to surface.
- ▶ This happens up to 1,000,000 times every second.
- ▶ The millions of points computed are used to produce a 3D 'point cloud' which defines the surface geometry.
- ▶ 3D 'Cloud of Points' - XYZ coordinates in 3D space, together with RGB data and intensity value.
- ▶ Point clouds are acquired from several points of view and joined together to produce a 3D image with accurate dimensions.





HISTORIC SCOTLAND
ALBA AOSMHOR

DIGITAL
DESIGN STUDIO
THE GLASGOW
SCHOOL OF ART



Centre for Digital
Documentation and
Visualisation

Access, replication, management and analysis



**New
Lanark**



**Neolithic
Orkney**



St Kilda



Edinburgh



**Antonine
Wall**



**Mount
Rushmore**
United States



Rani Ki Vav
India



**Eastern Qing
Dynasty
Tombs**China

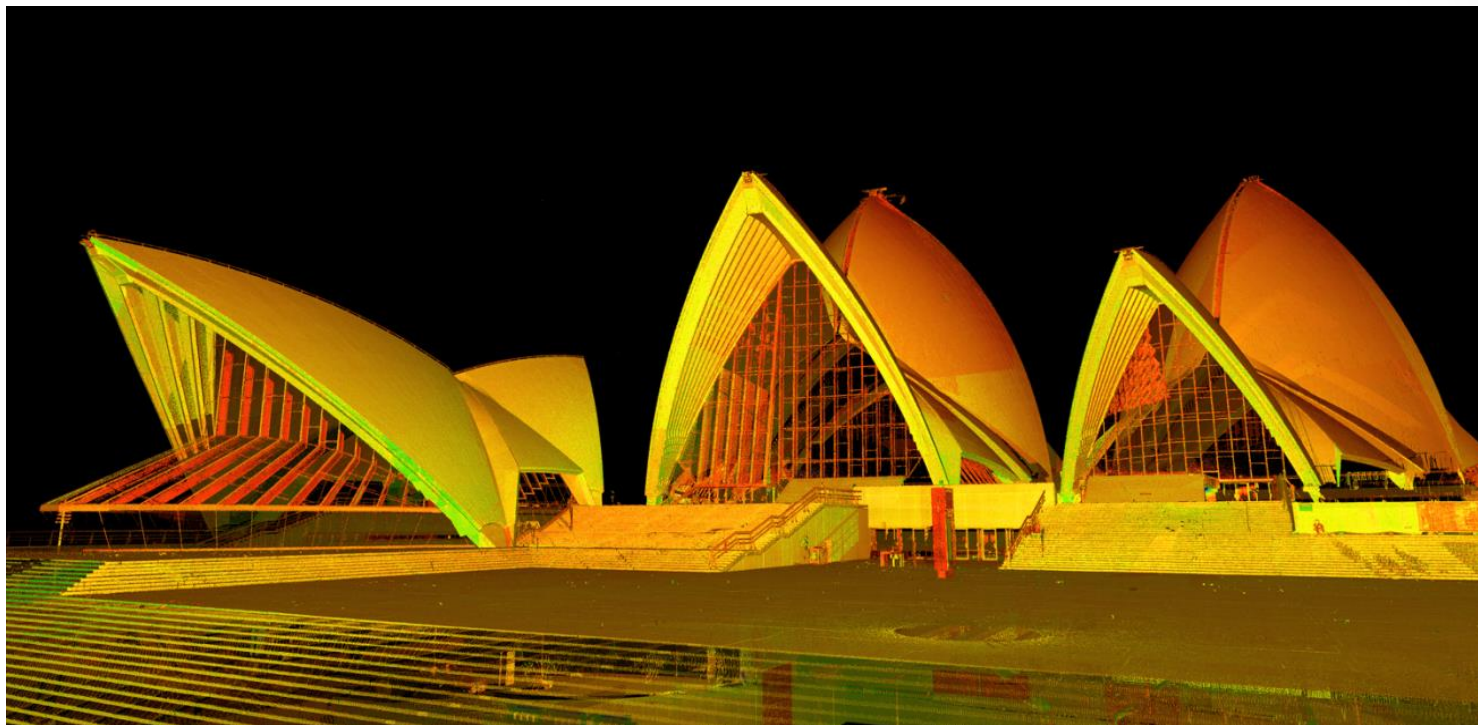


**Sydney Opera
House**
Australia



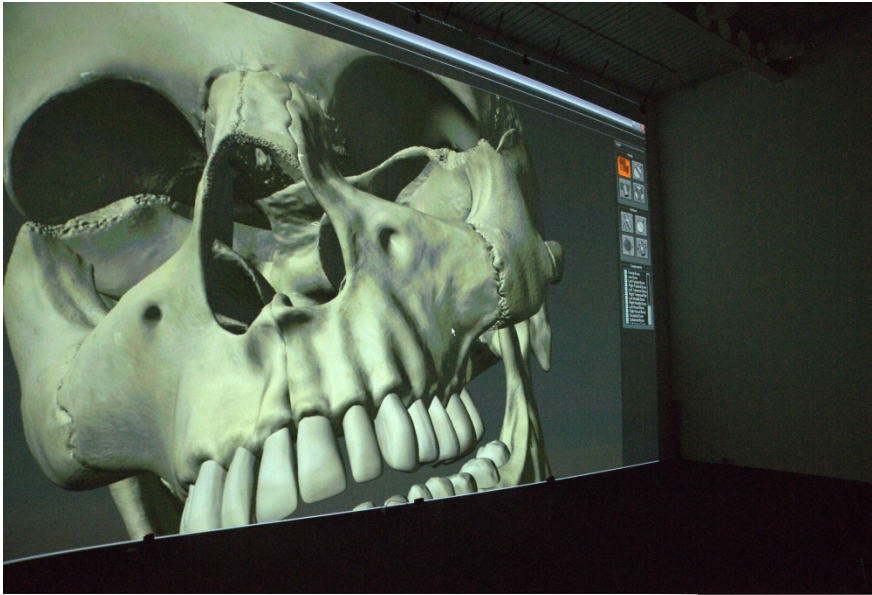
Undecided

Sydney Opera House



CCDV Scottish 10 Project - work in progress from the registration/processing (260Gb raw data)

3D Head & Neck



Remote operation &
live streaming of 4K
content



Video Content Specifications

- Resolution: 4K (3840 x 2160)
- Color space: YCbCr (422)
- Bit Depth: 8bit
- Frame Rate: 24 FPS (original frames c. 30mb)
- Codec: Jpeg 2000 (J2K)

Hardware Diagram (January Showcase)

