

# Digital Design Studio

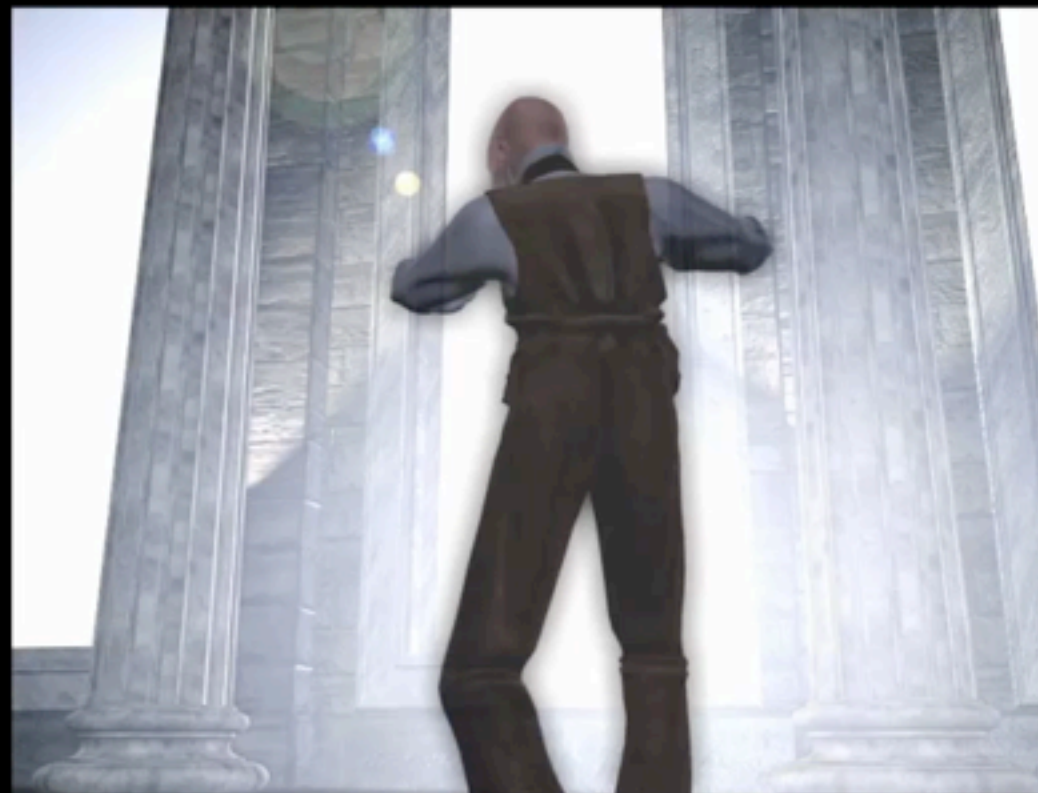
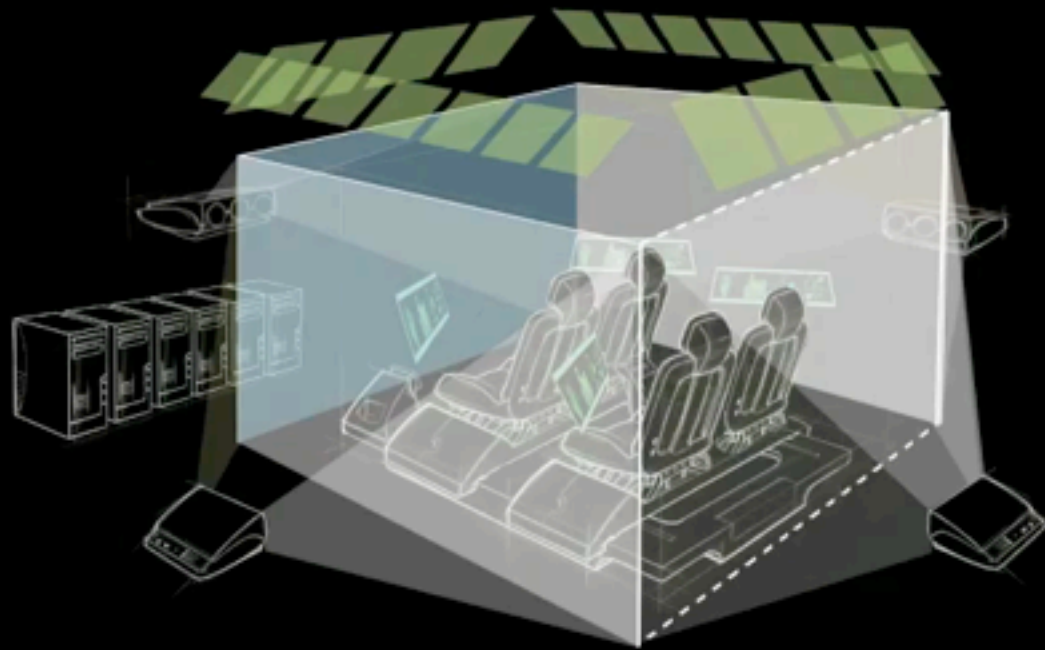
VISUALISATION 2011

# Digital Design Studio

# DIGITAL DESIGN STUDIO

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EXPERTISE



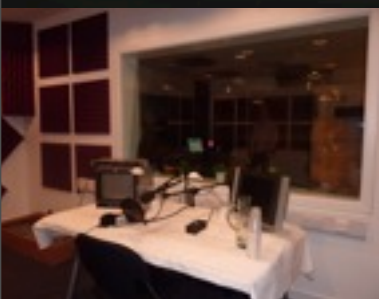
DIGITAL DOCUMENTATION – 3D VISUALISATION – DATA ACQUISITION – L





# DIGITAL DESIGN STUDIO

# DIGITAL DESIGN STUDIO FACILITIES



SOUND DUB



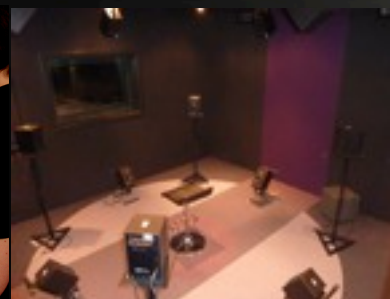
HD EDIT SUITE



LASER SCANNING



FAKESPACE



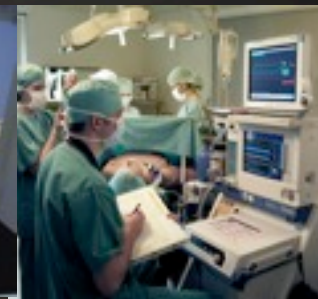
3D SOUND LAB



MOTION TRACKING



LAB 1



LAB 2



MEDIA TRAINING

# DIGITAL DESIGN STUDIO

A digital design studio workstation is shown in a dimly lit room. The central focus is a large, professional-grade mixing console with numerous sliders and buttons. To its right, a computer monitor displays a software interface with various panels and graphs. Further right, a tablet computer is propped up, showing a colorful abstract image. The desk is cluttered with a keyboard, a mouse, and some papers. In the background, two large studio monitors are visible, and the walls are covered with acoustic foam panels. The overall atmosphere is professional and creative.

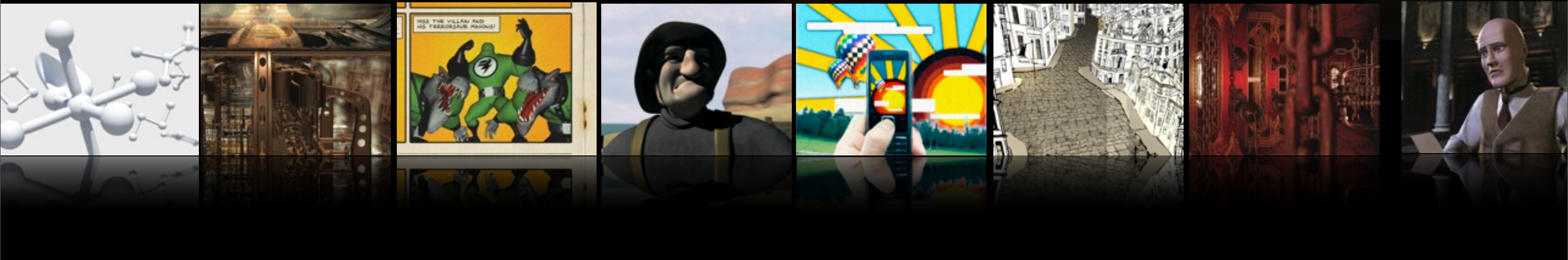
A digital design studio workstation. In the foreground, a large, professional-grade mixing console with numerous faders and knobs is visible. Behind it, a computer monitor displays a software interface with various panels and graphs. To the right of the monitor, a tablet is propped up, showing a colorful abstract image. The desk is cluttered with various items, including a keyboard, a mouse, and some papers. The background shows a wall with acoustic foam panels and a large studio speaker on a stand.

# DIGITAL DESIGN STUDIO

POSTGRADUATE COMMUNITY

# DIGITAL DESIGN STUDIO

POSTGRADUATE COMMUNITY



<b>C</b>	<b>D</b>	<b>Centre for Digital Documentation and Visualisation</b>
<b>D</b>	<b>V</b>	



**Technical Expertise | High Definition Laser Scanning**

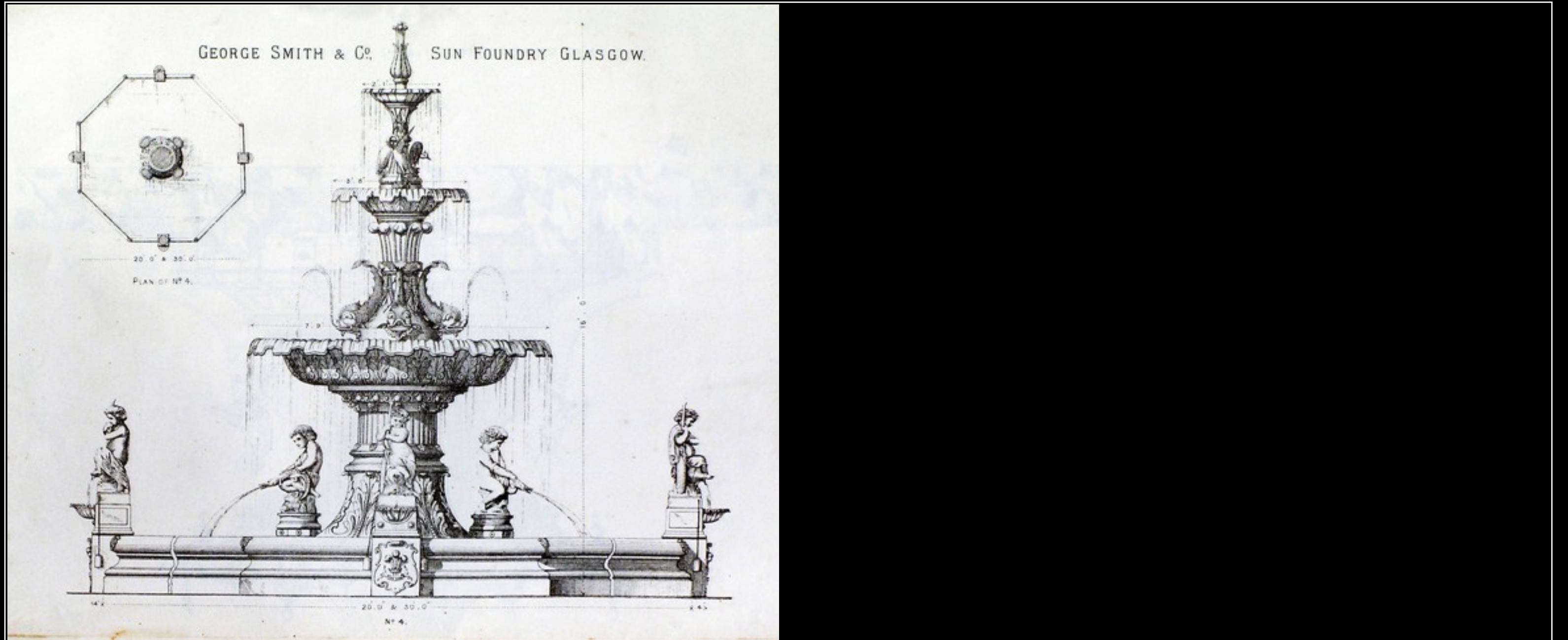












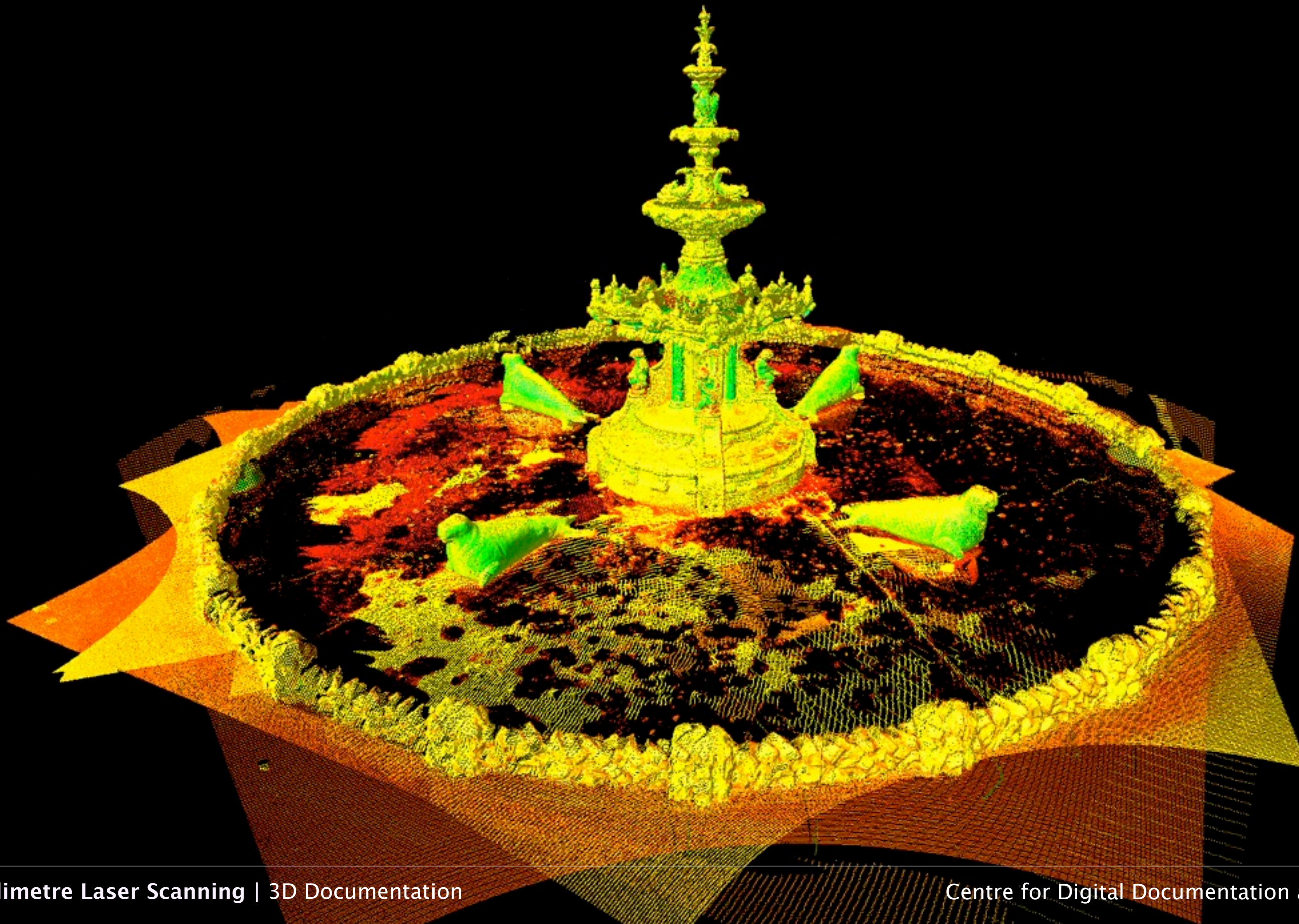
**Grand Fountain | Paisley Scotland**















Tuesday, 19 April 2011

**Rosslyn Chapel**  
Built 15th Century

**Reason for Survey**

- Extensive restoration scheme
- Replication of missing carved features
- Education and interpretation

**Metrics**

- Scanworlds: 142
  - 63 interior
  - 80 exterior
- Resolution: 1-3 mm
- Hardware: Scan Station 2
  - HDS 6100
  - Hexagon T-Scanner
- Registration: targets
- Total Points: 4,123,304,000

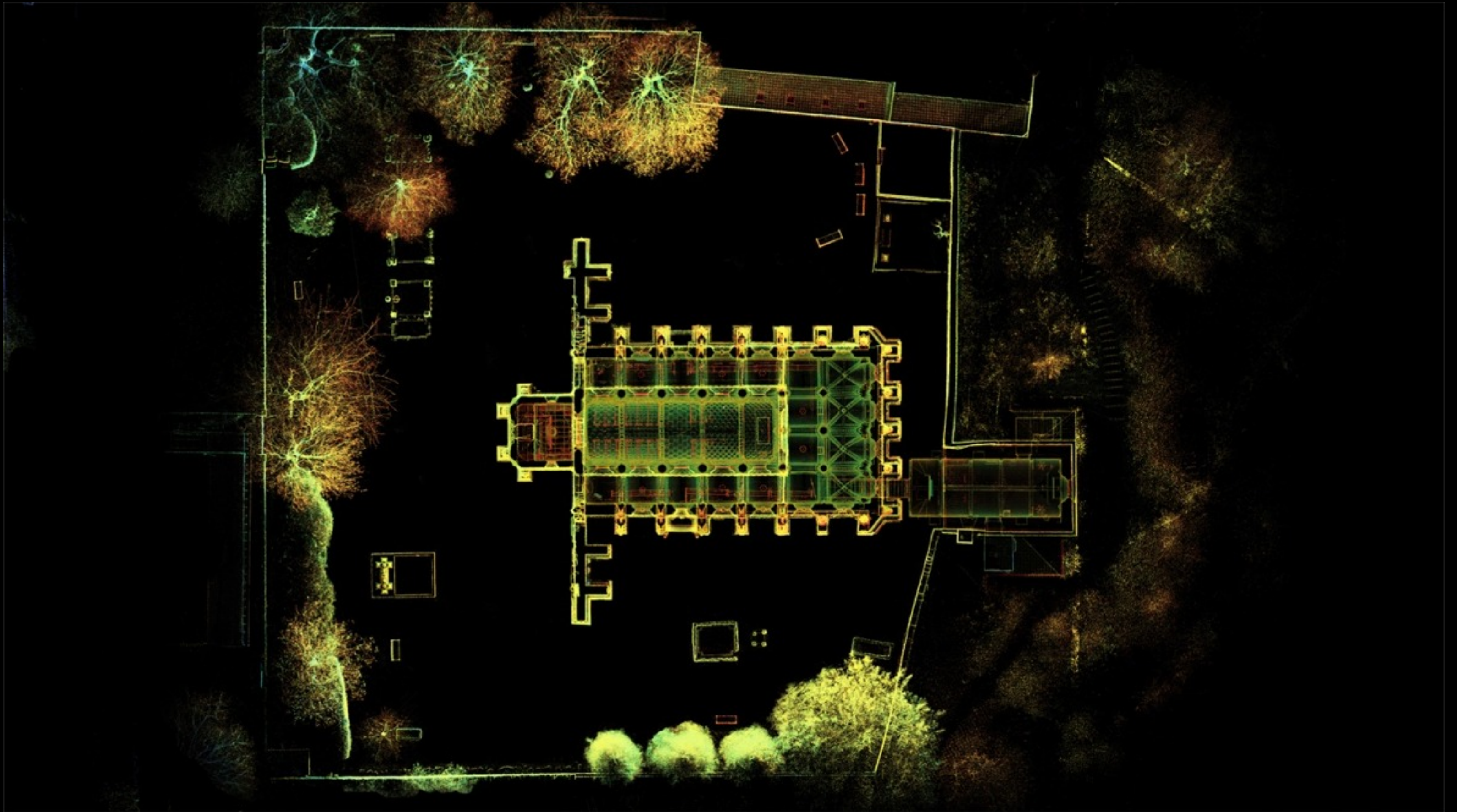
**Deliverables**

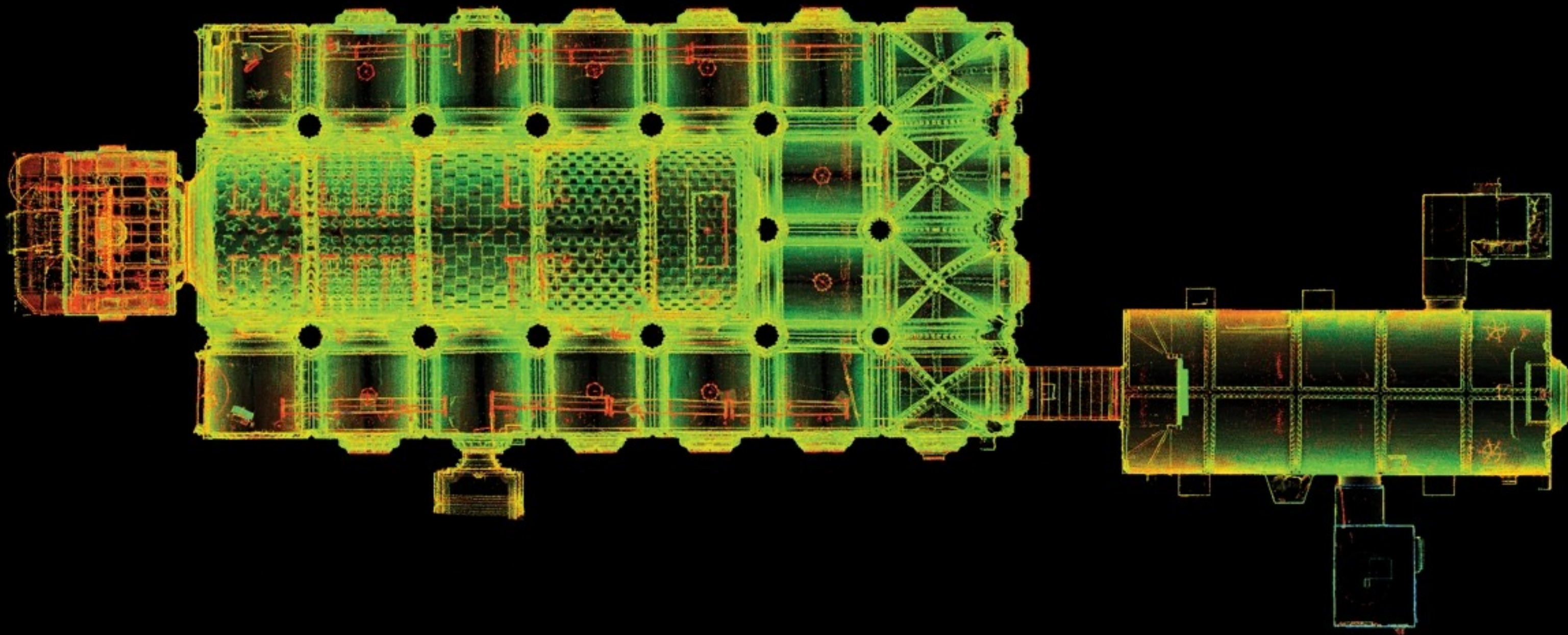
- Pointcloud
- 3D Model (interior & exterior)
- 3D animation (existing & revised)

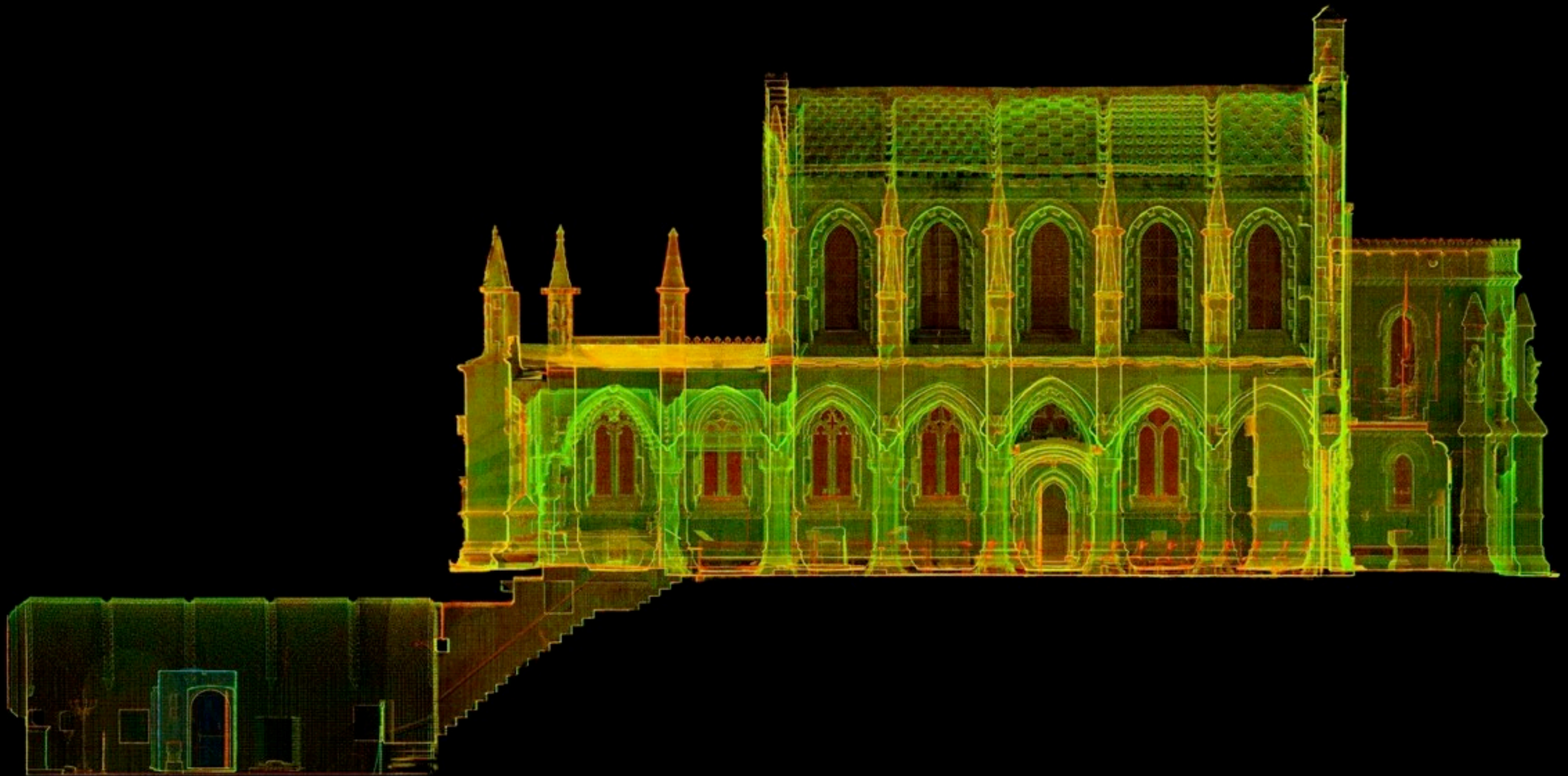


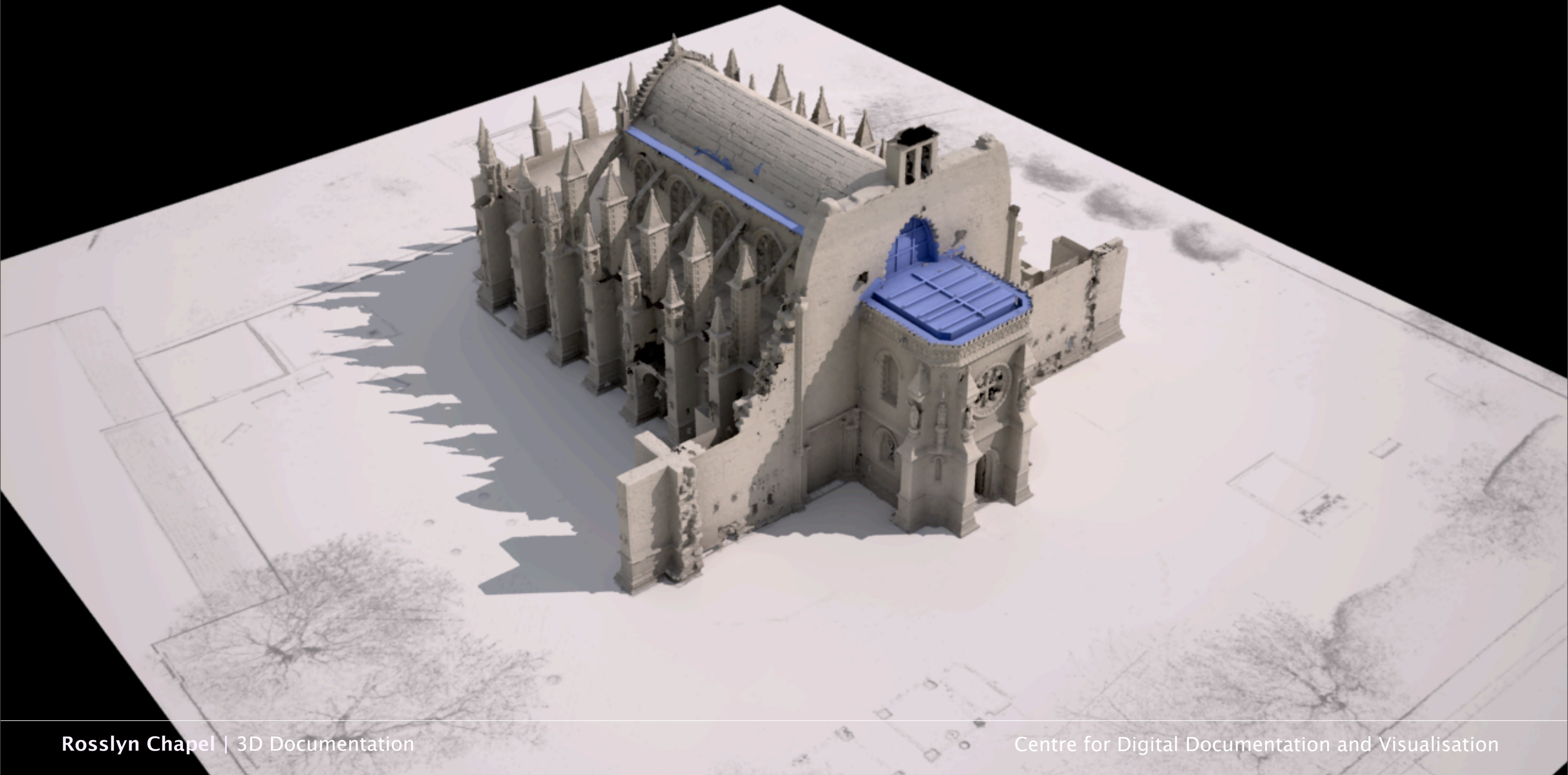


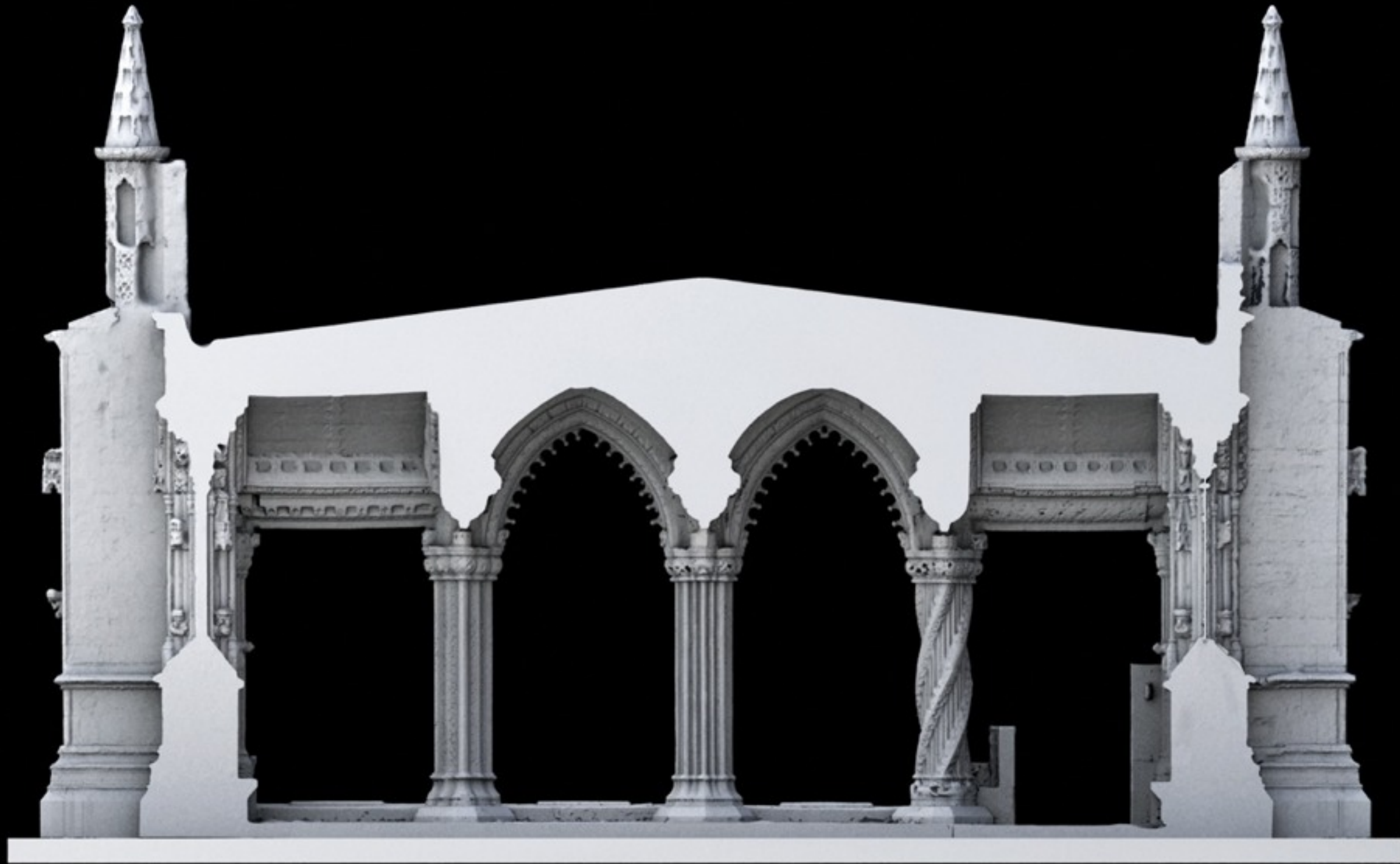










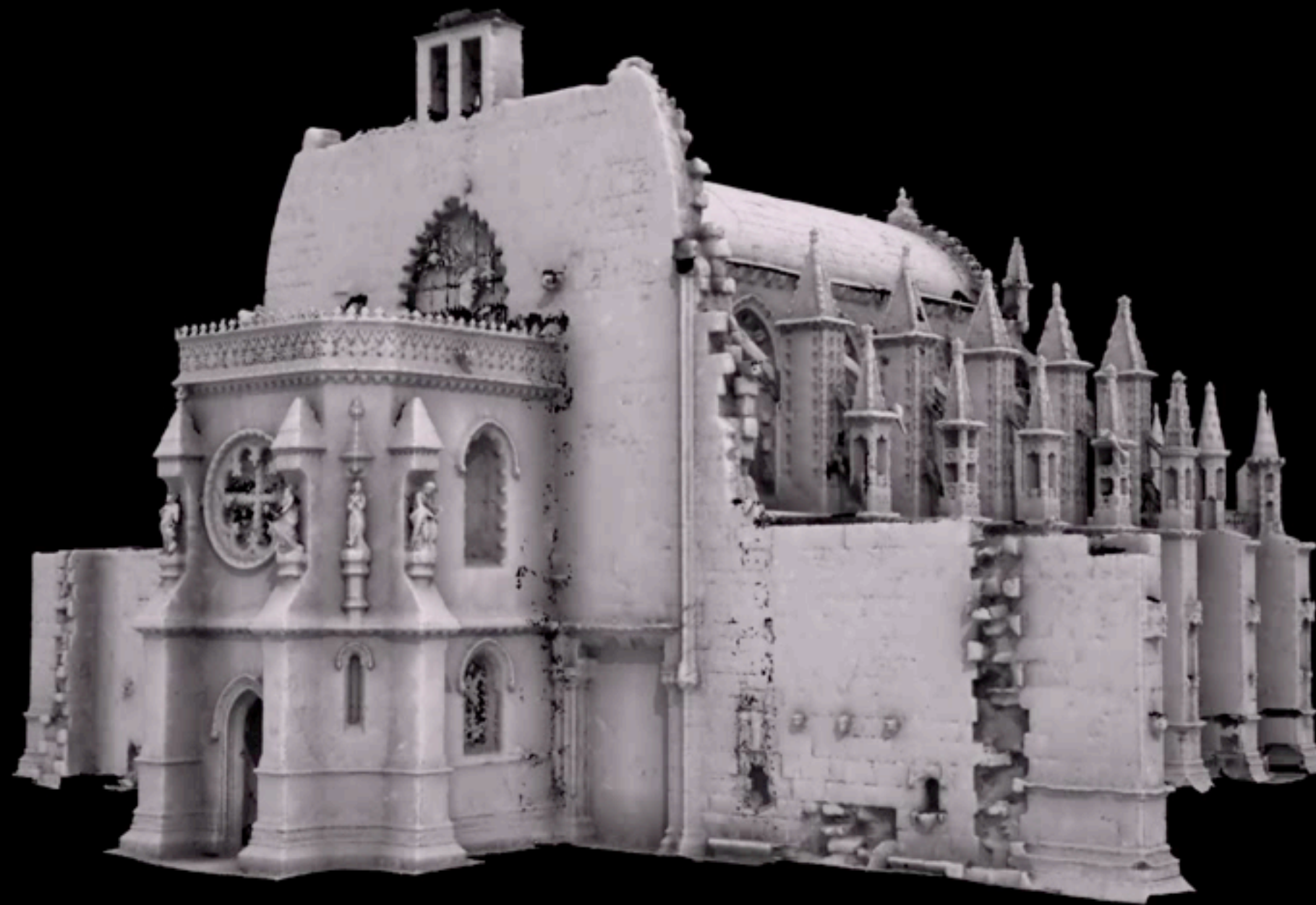






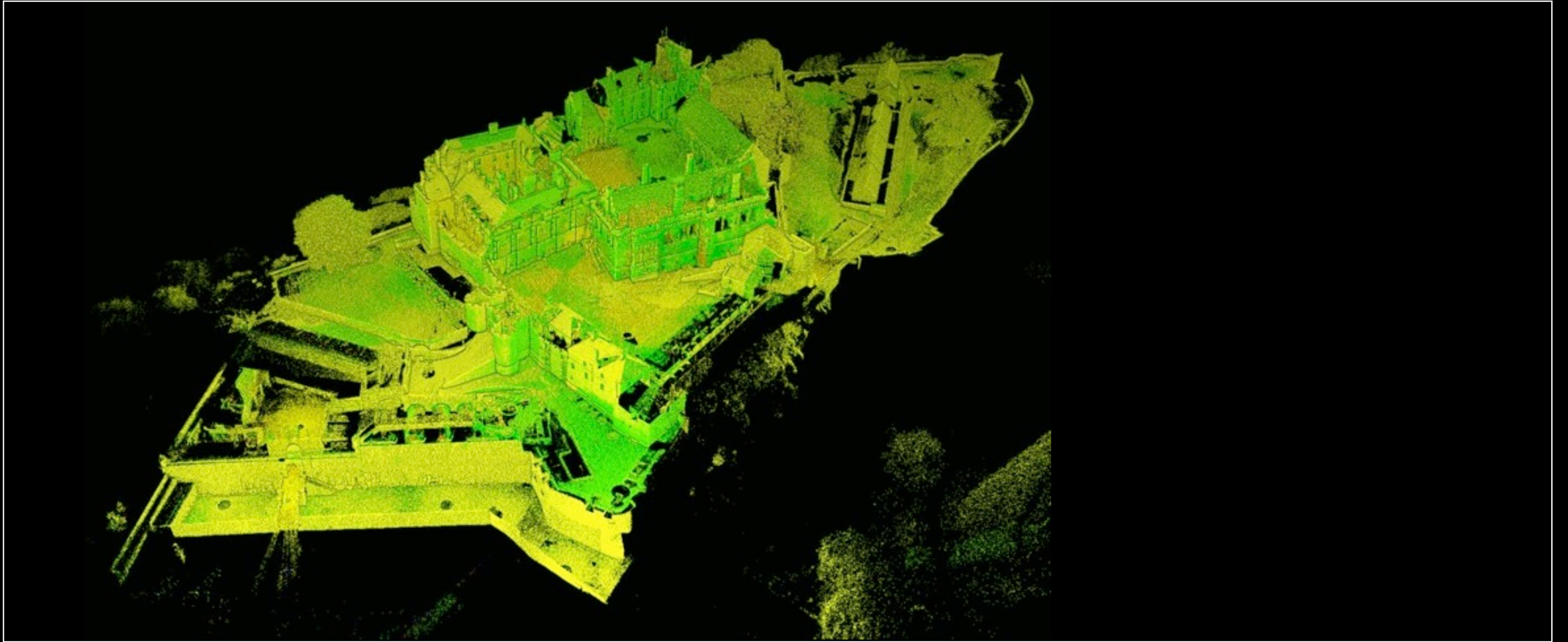


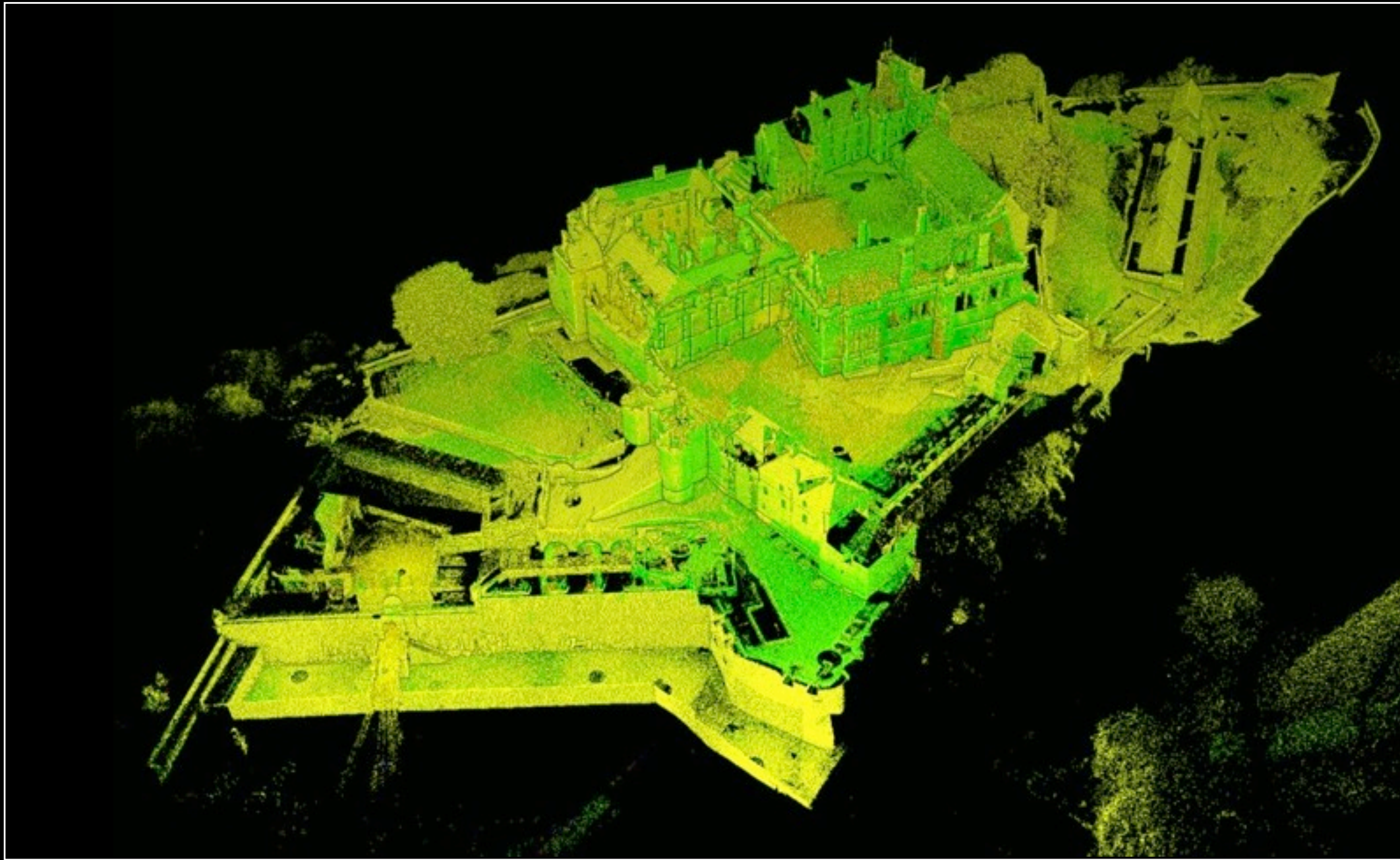






**Stirling Castle | Stirling Scotland**





## Stirling Castle

Built 1540

### Reason for Survey

£25 million restoration scheme  
Thorough documentation of existing  
Education and interpretation

### Metrics

218 Scan worlds:  
15 interior  
11 corridor  
192 exterior

Resolution: 1-3 mm

Hardware: Scan Station

Scan Station 2

HDS 4500

Leica T-Scanner

Total Points: 2,922,704,010

### Deliverables

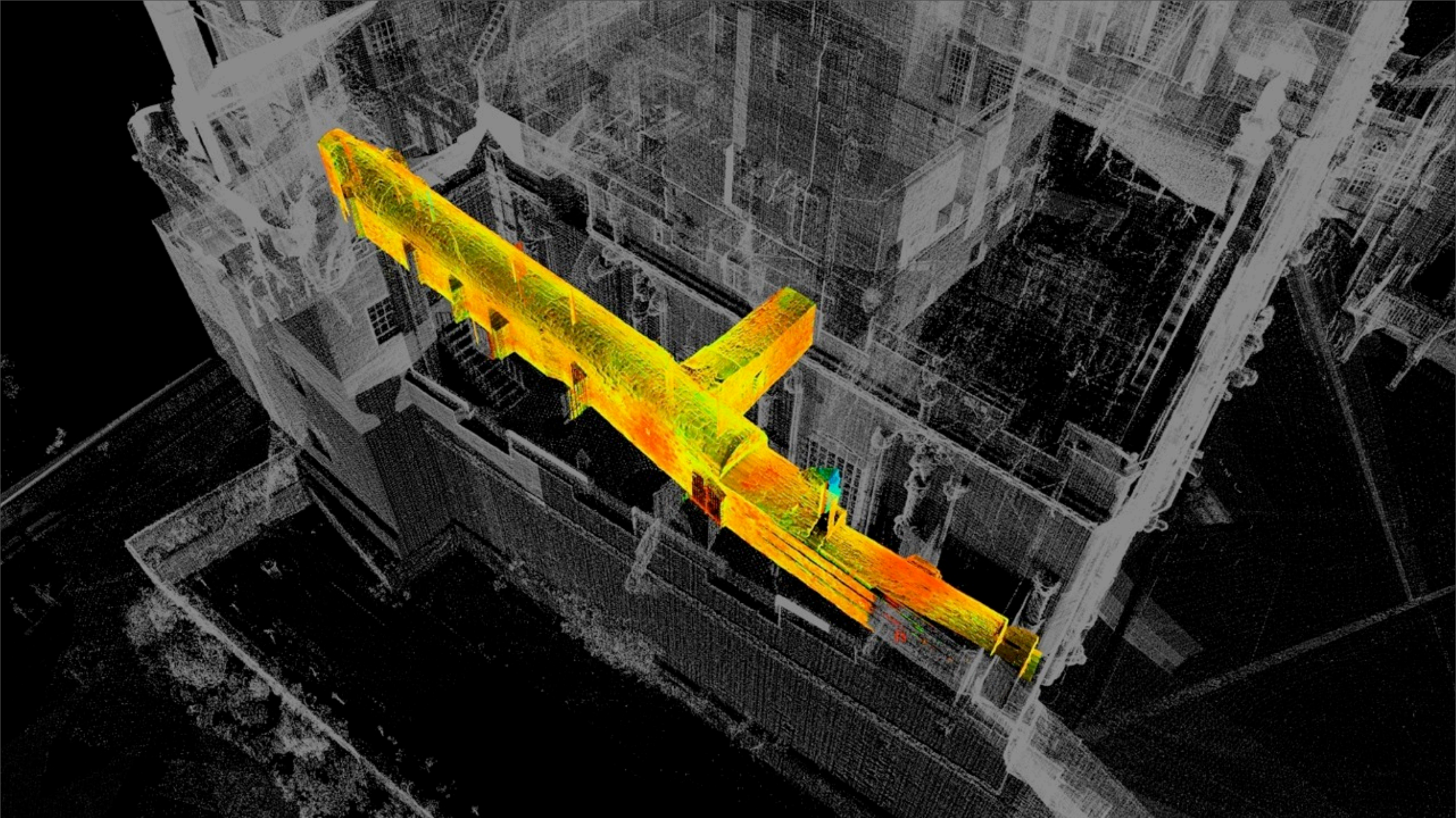
3D Point Cloud

3D Model (interior & exterior)

3D animation (existing & revised)



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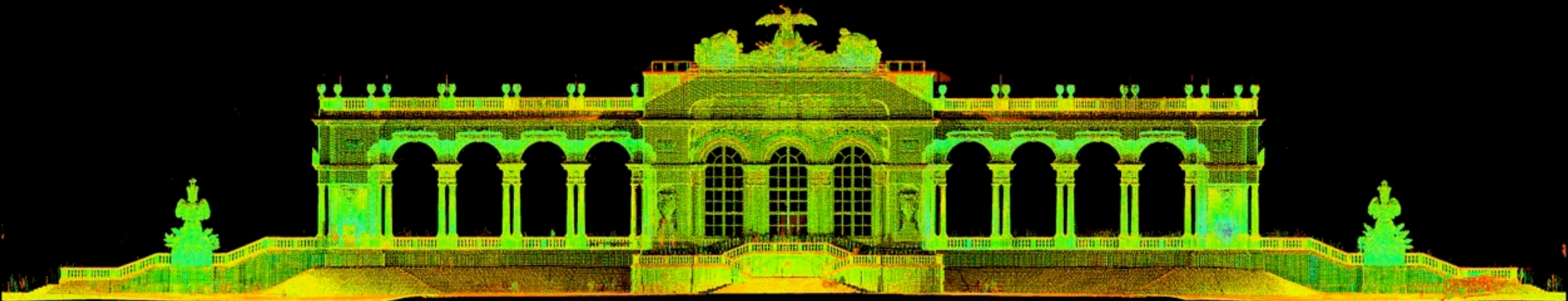




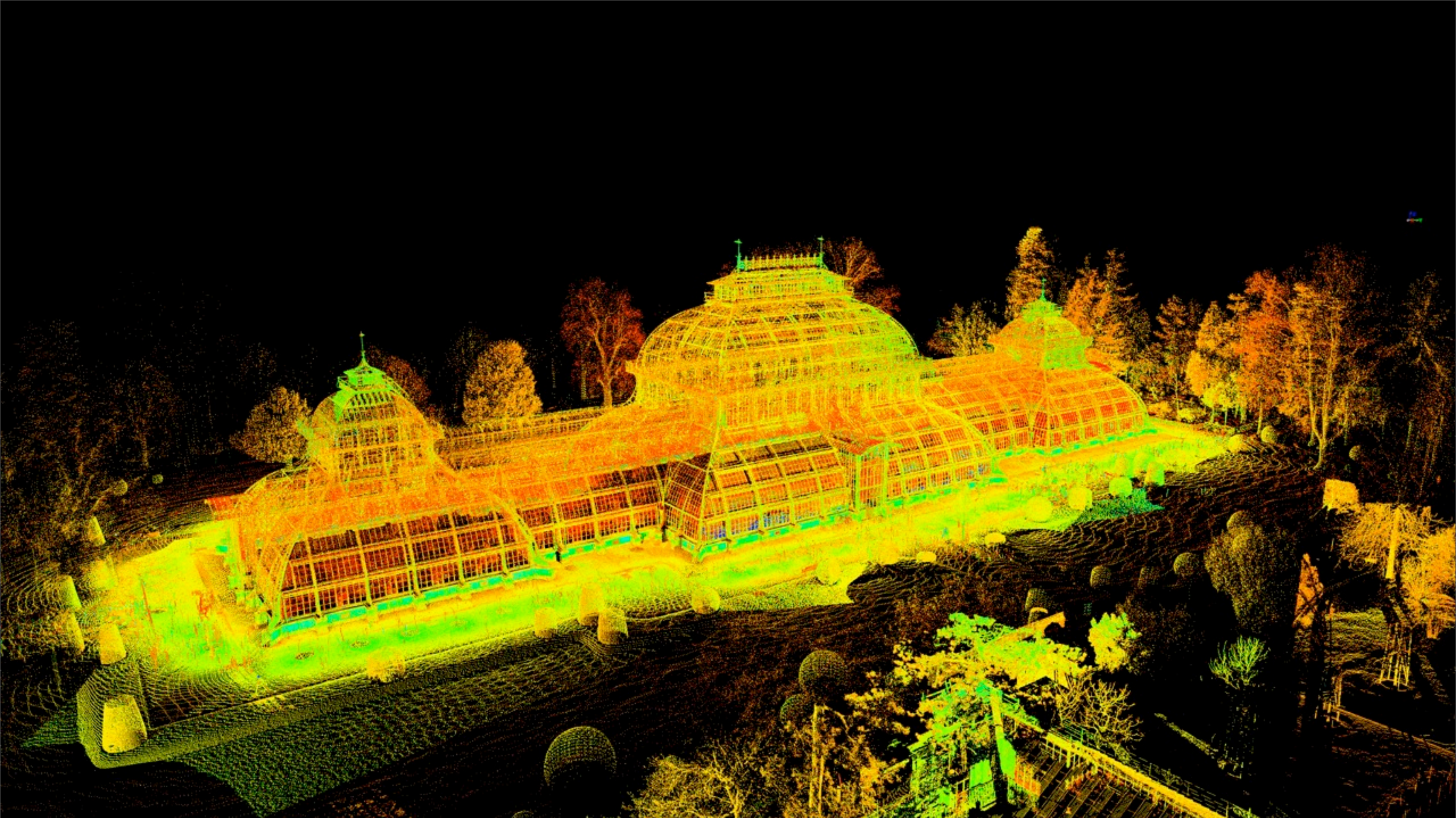
Schonbrunn Palace | Vienna Austria



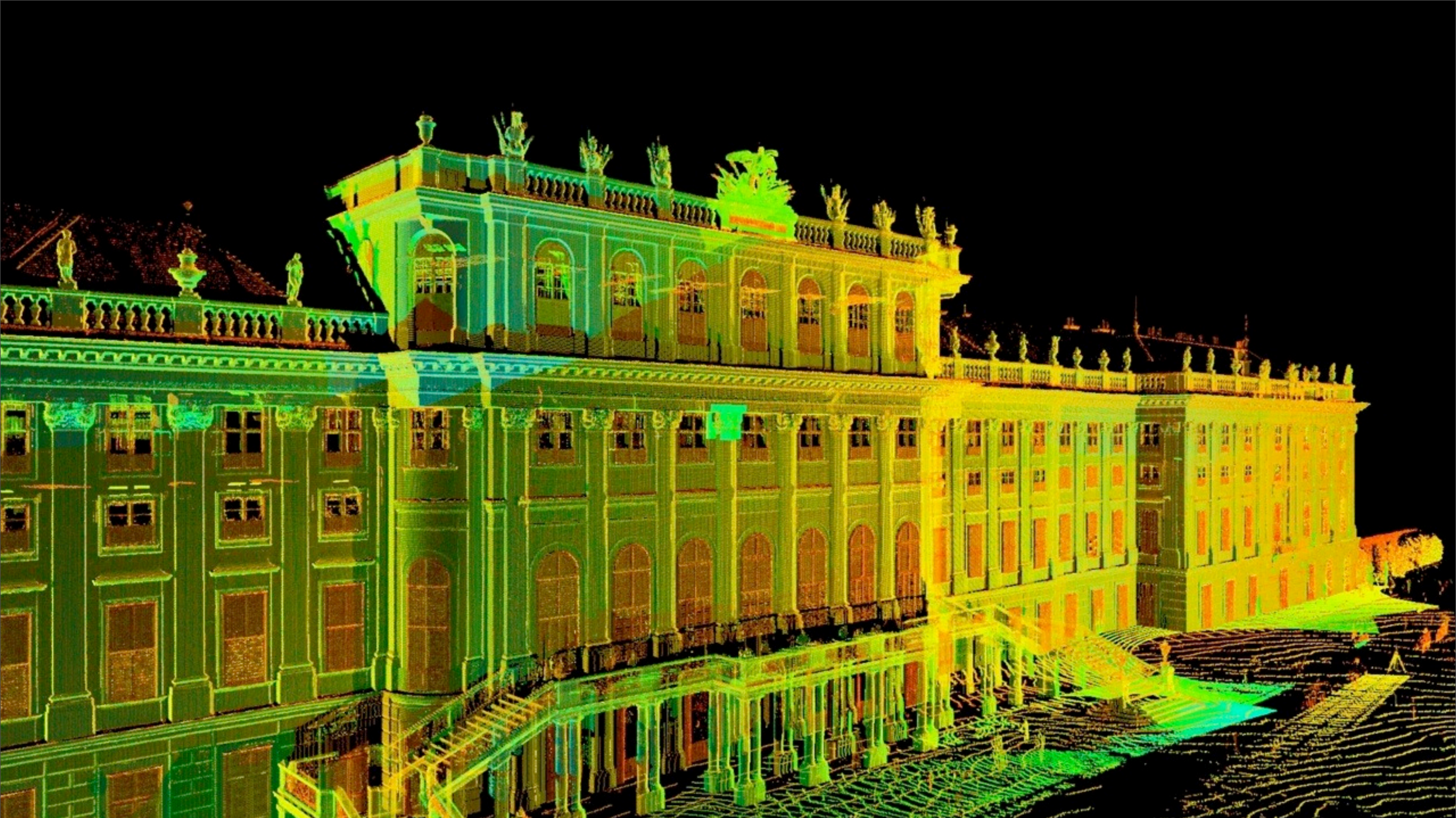








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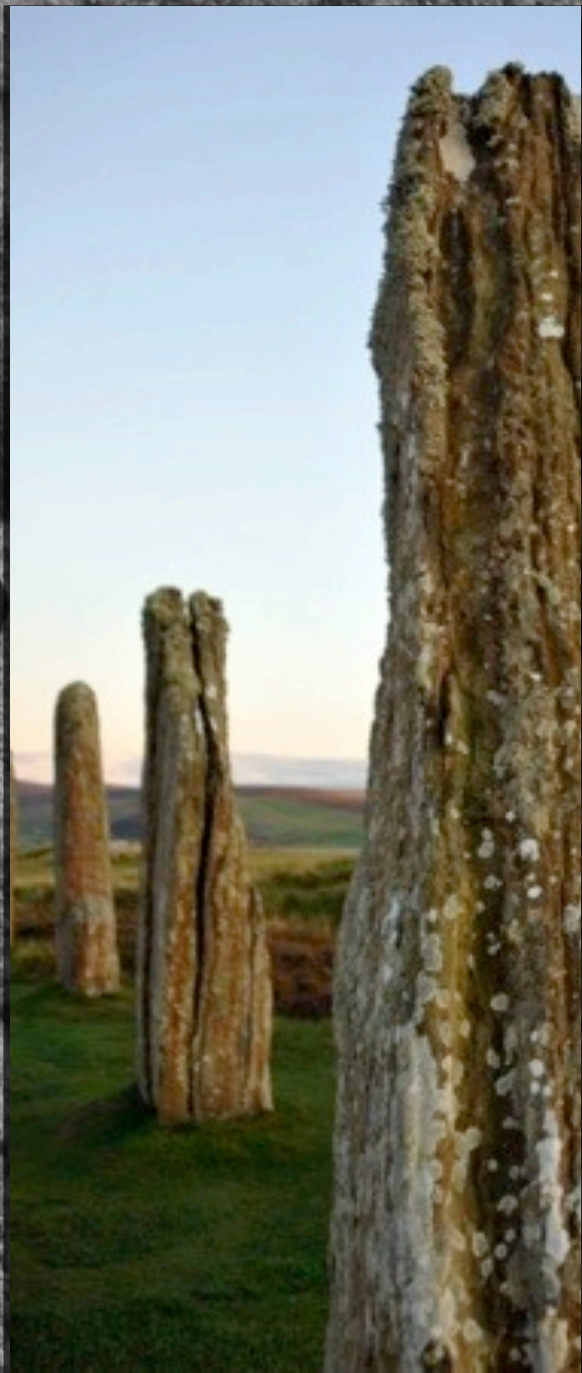


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New Lanark



Neolithic  
Orkney



St Kilda



Old Town  
Edinburgh



Antonine  
Wall

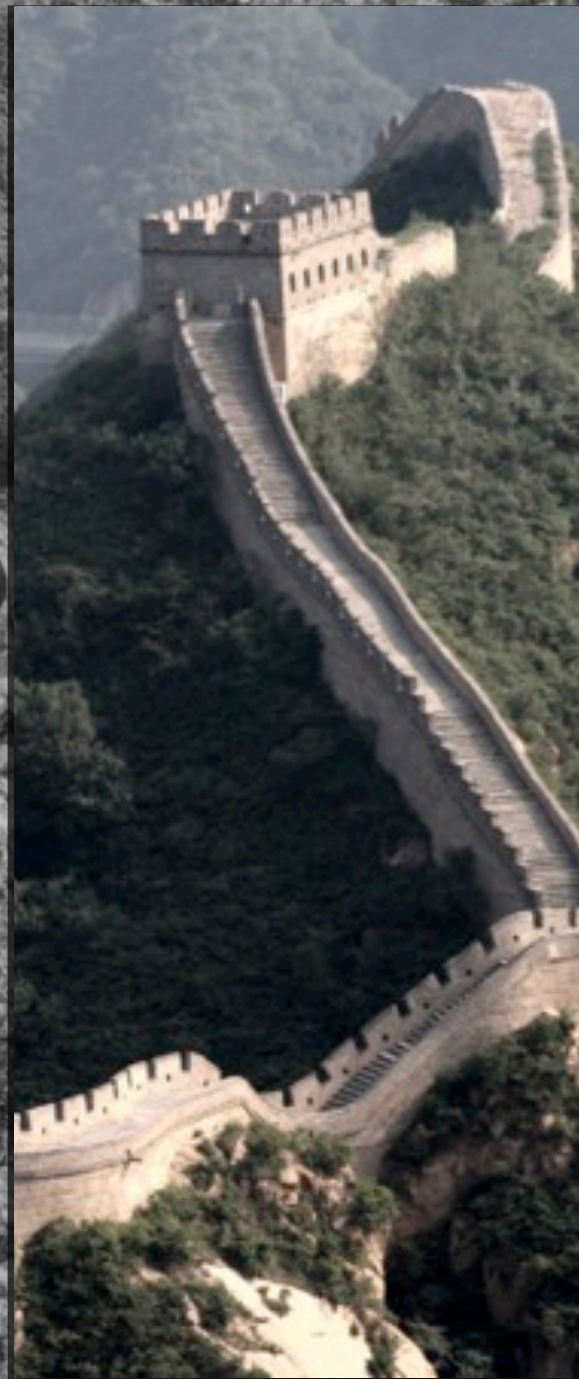




Mount  
Rushmore



Rani Ki Vav  
India



China



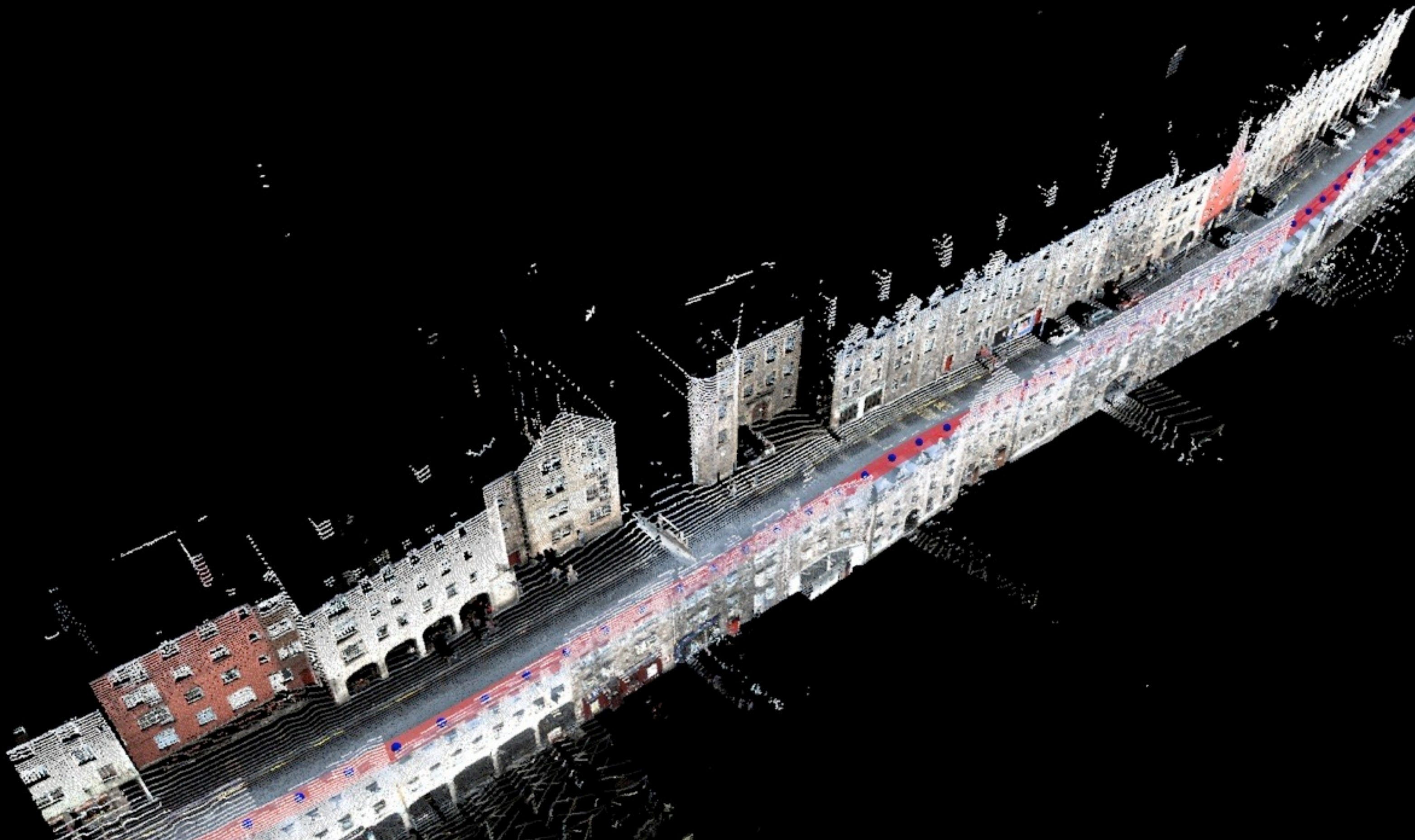
Japan



Undecided



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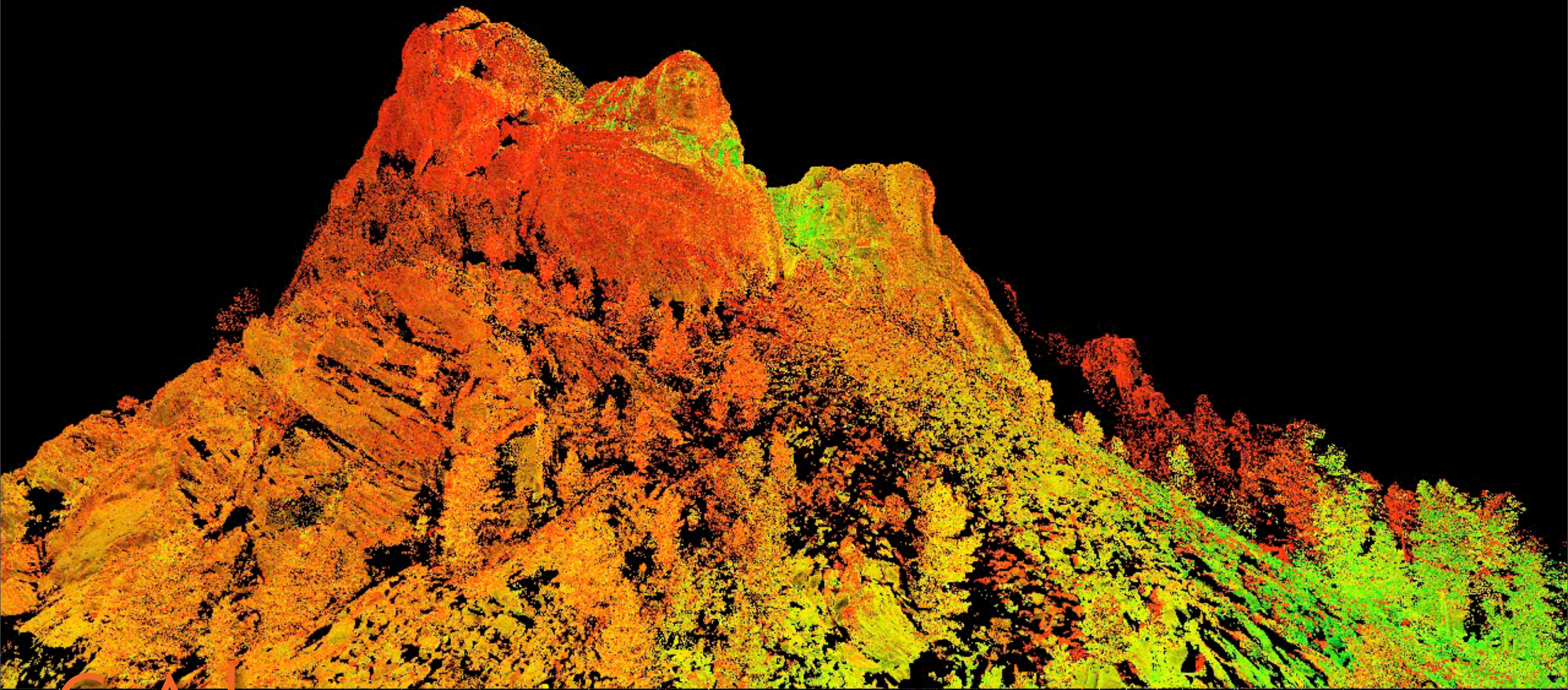
Mount Rushmore National Memorial

Tuesday, 19 April 2011

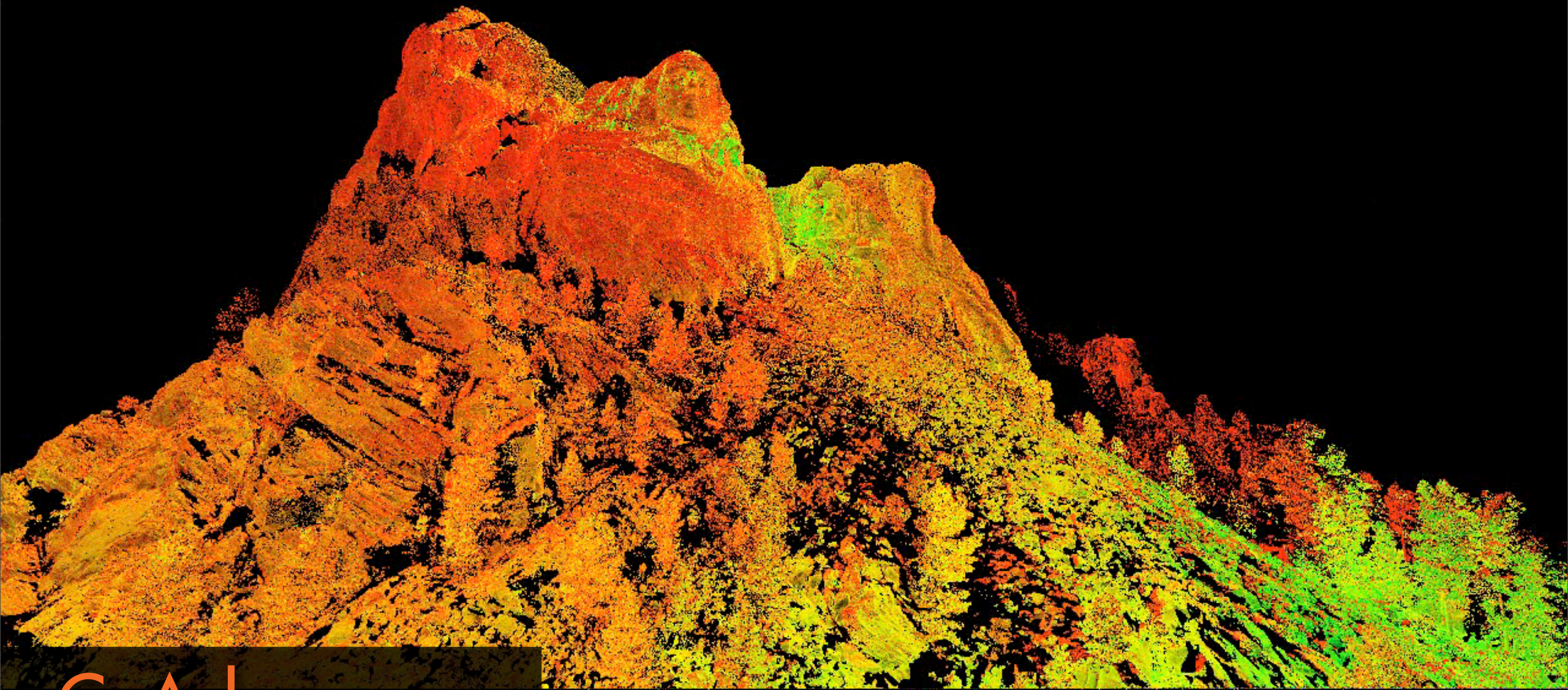




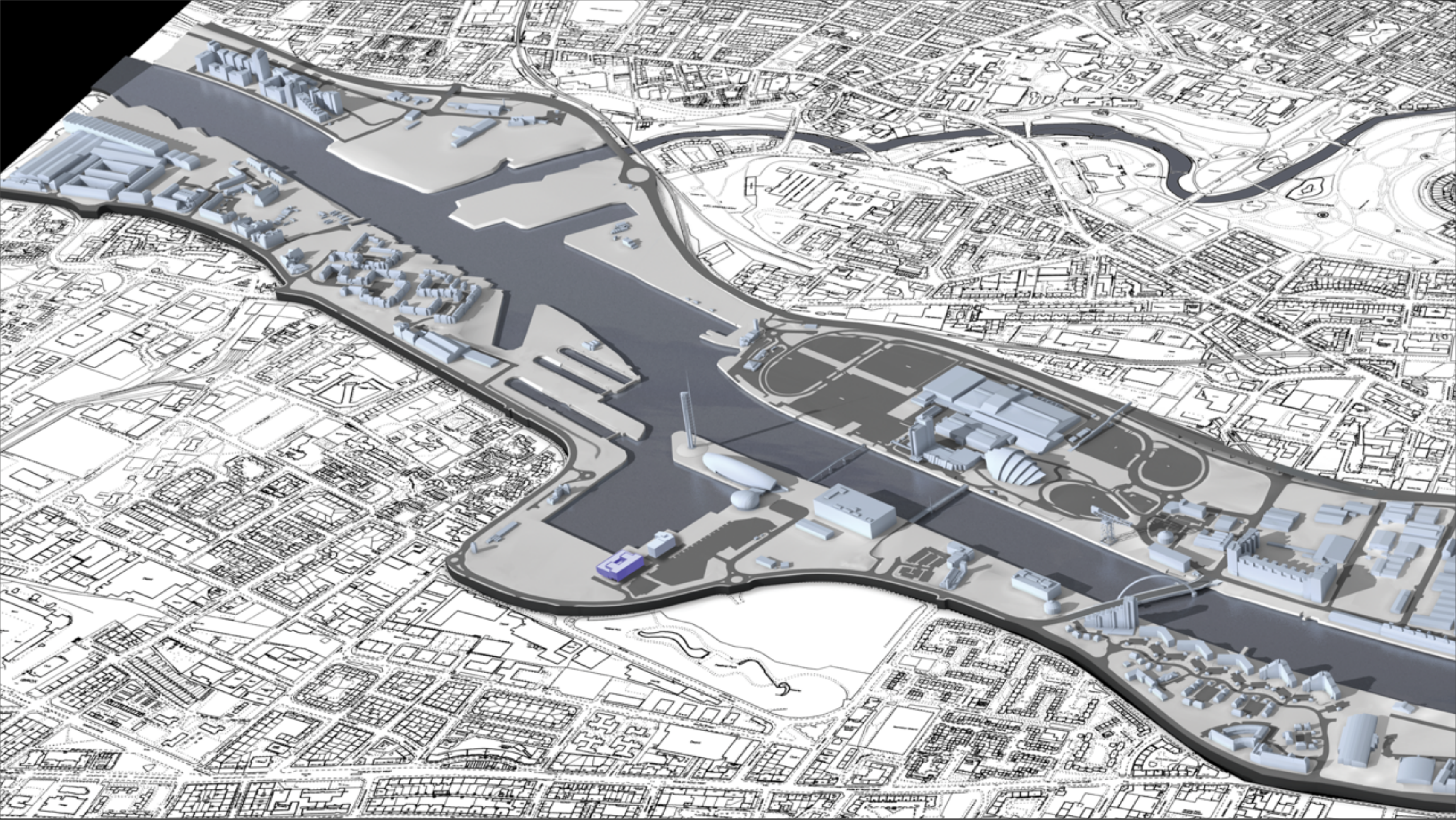




CyArk



CyArk



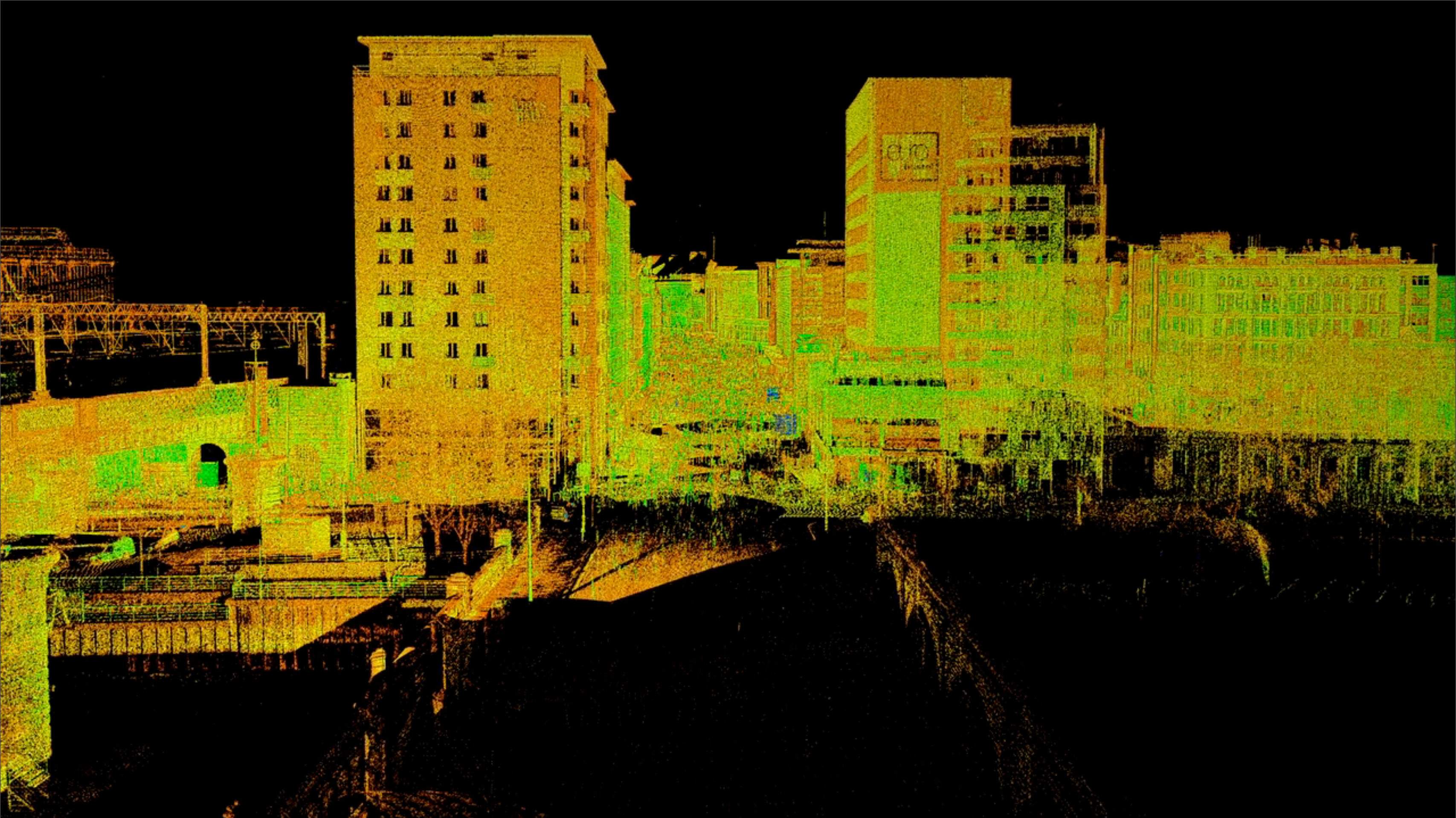
## Urban Model of Glasgow

Development and Regeneration Services  
Glasgow City Council

The Urban Model for Glasgow project's primary objectives are to deliver an online and high-resolution 3D digital models that will be accessible to citizens, the development industry and enhance Glasgow Council Services.

The 3D model will encourage improved access to, and understanding of, development planning in Glasgow resulting in better decisions and an enhanced environment in which to promote the regeneration and development of Glasgow.





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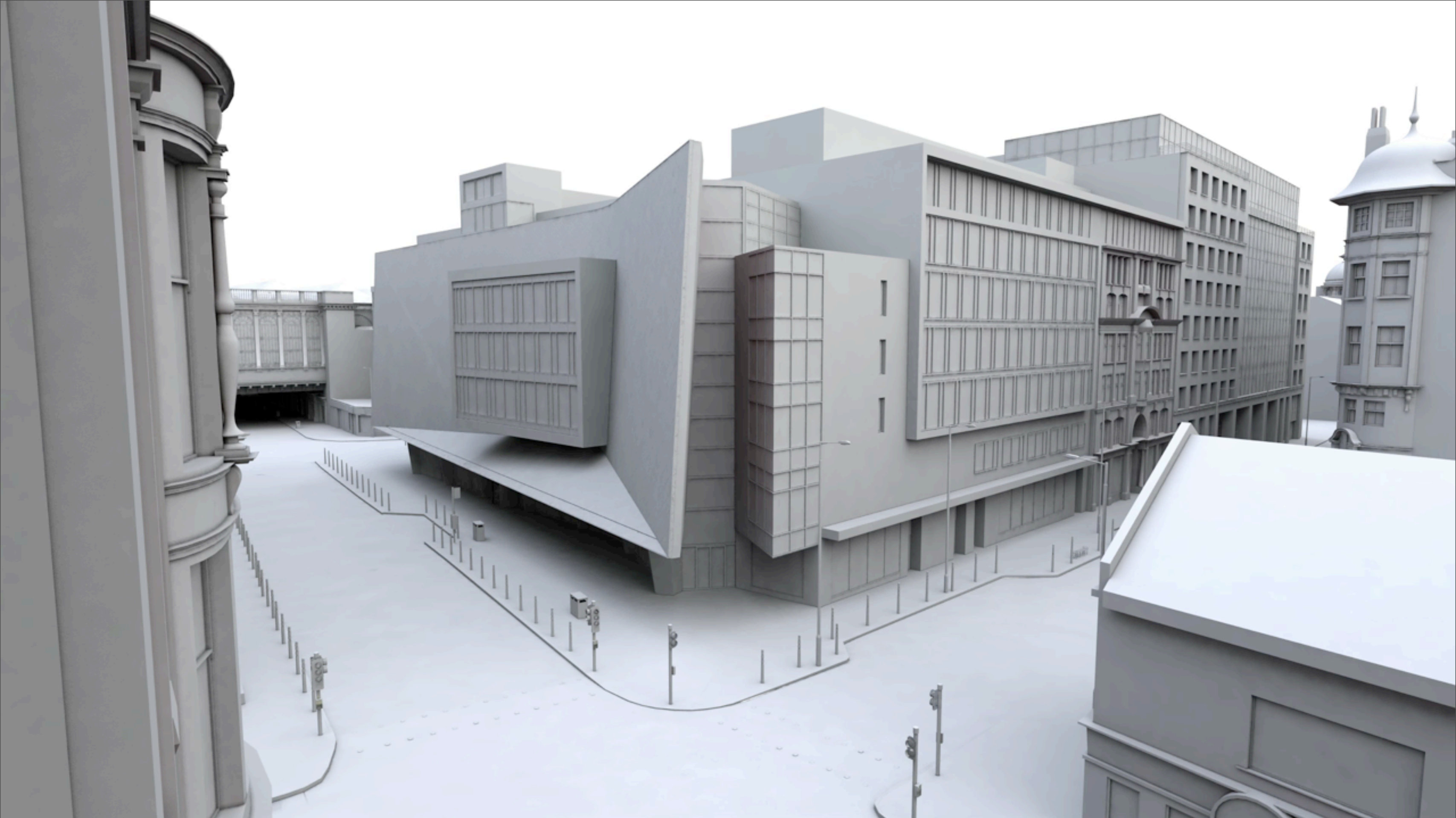


Tuesday, 19 April 2011













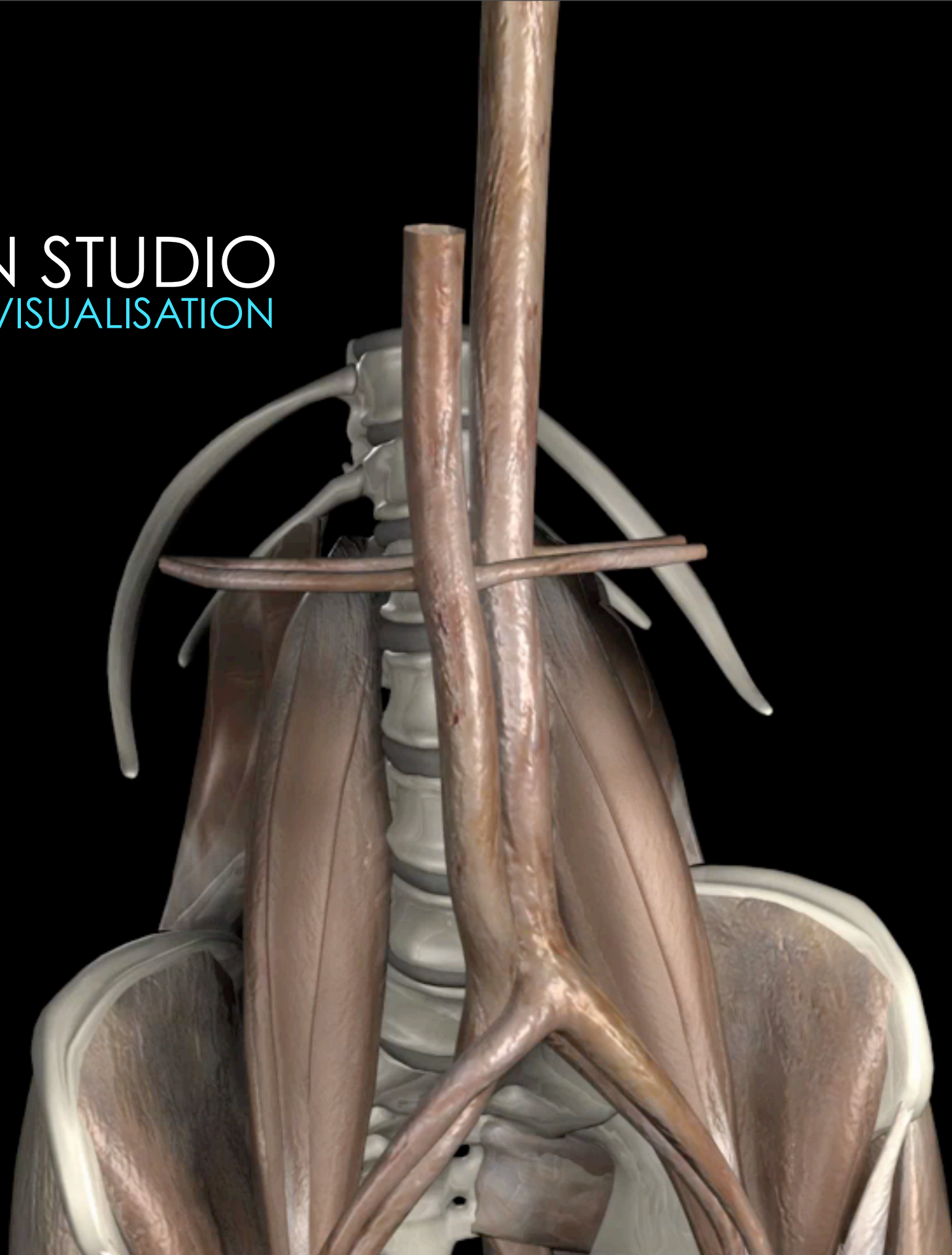
Tuesday, 19 April 2011

# DIGITAL DESIGN STUDIO

The background of the slide is a blurred, artistic photograph of a road at dusk or dawn. The road curves into the distance, with light trails from traffic visible. The sky is a mix of dark blues and oranges, suggesting a sunset or sunrise. The overall mood is serene and modern.

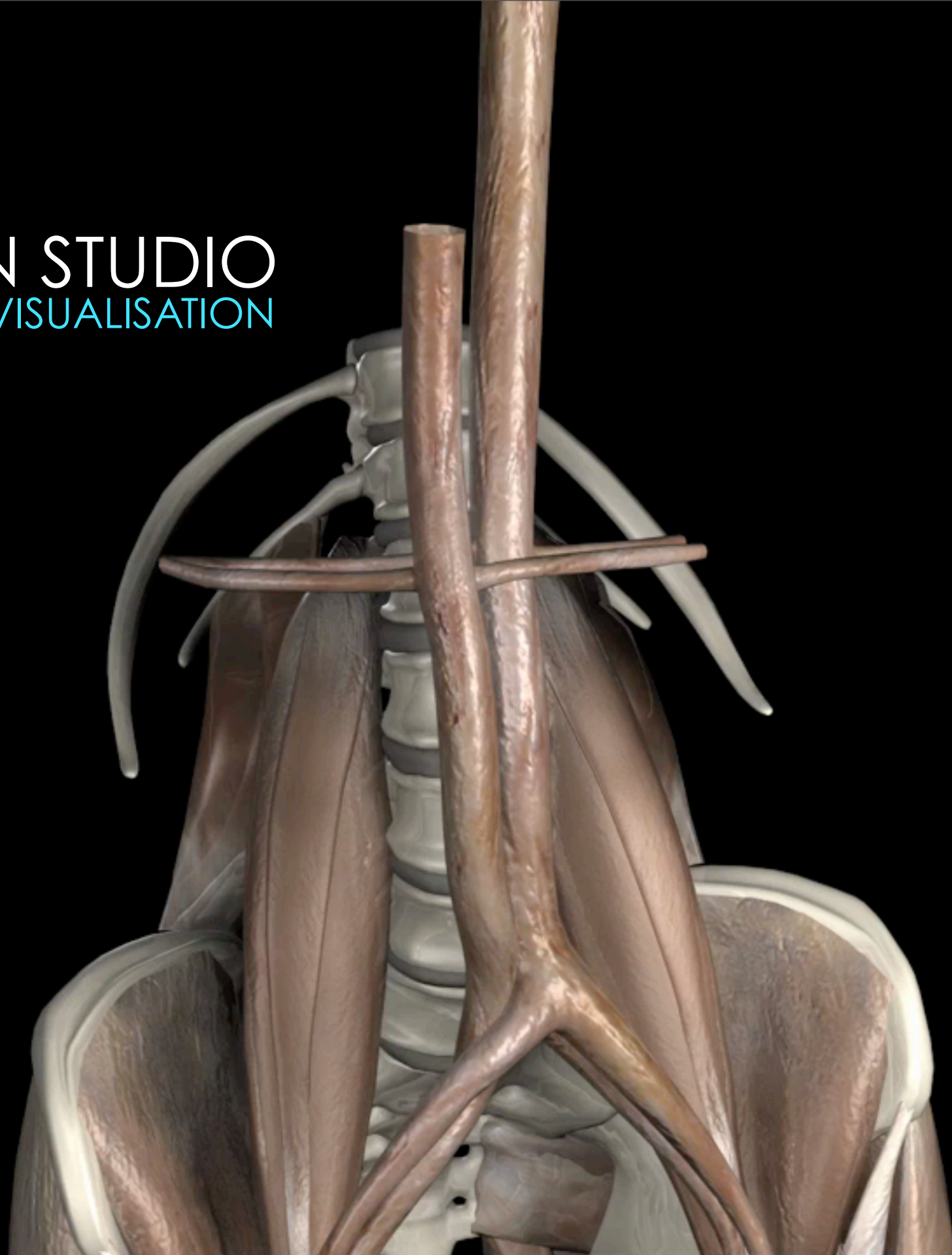
# DIGITAL DESIGN STUDIO

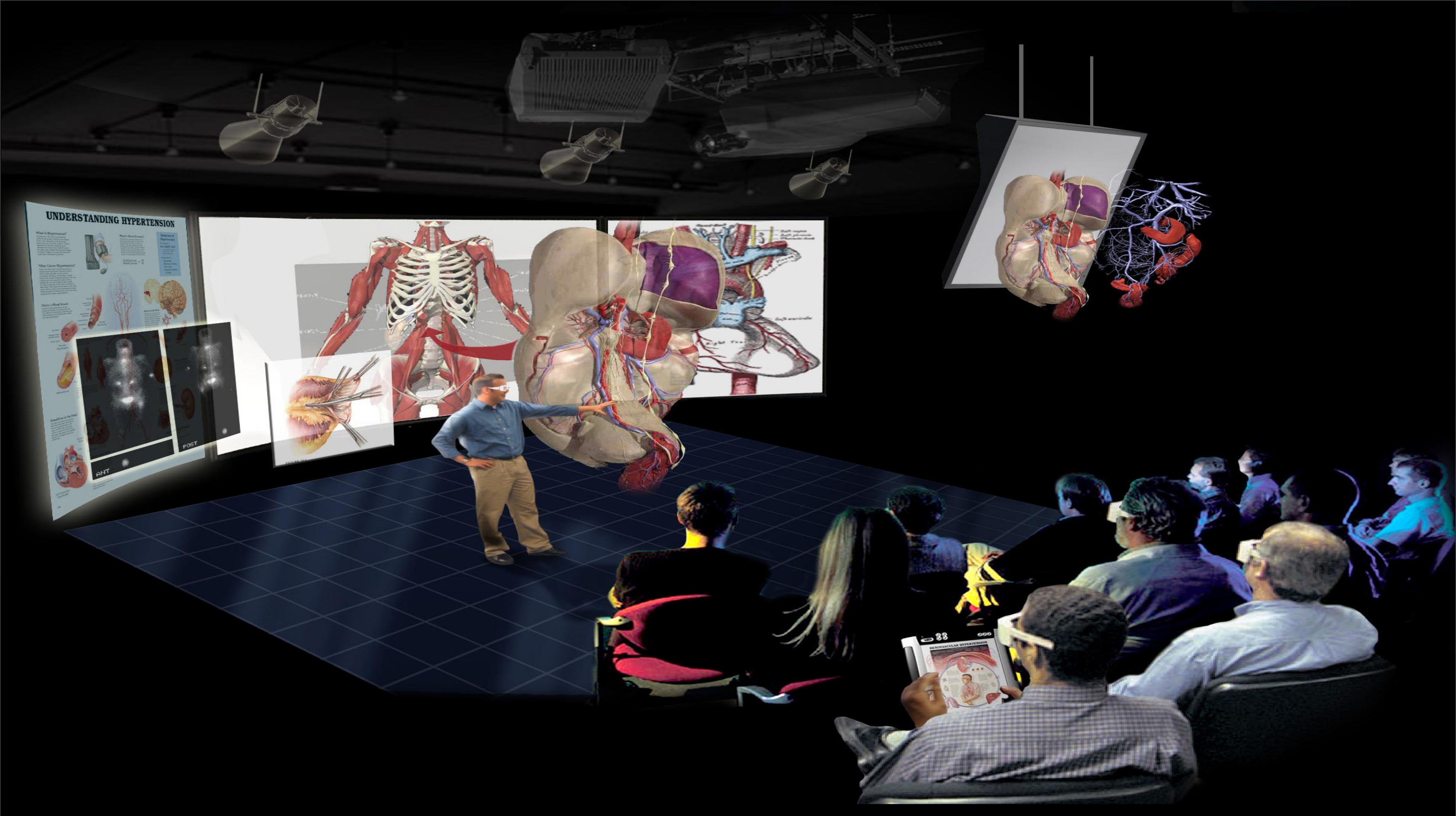
MEDICAL VISUALISATION



# DIGITAL DESIGN STUDIO

MEDICAL VISUALISATION



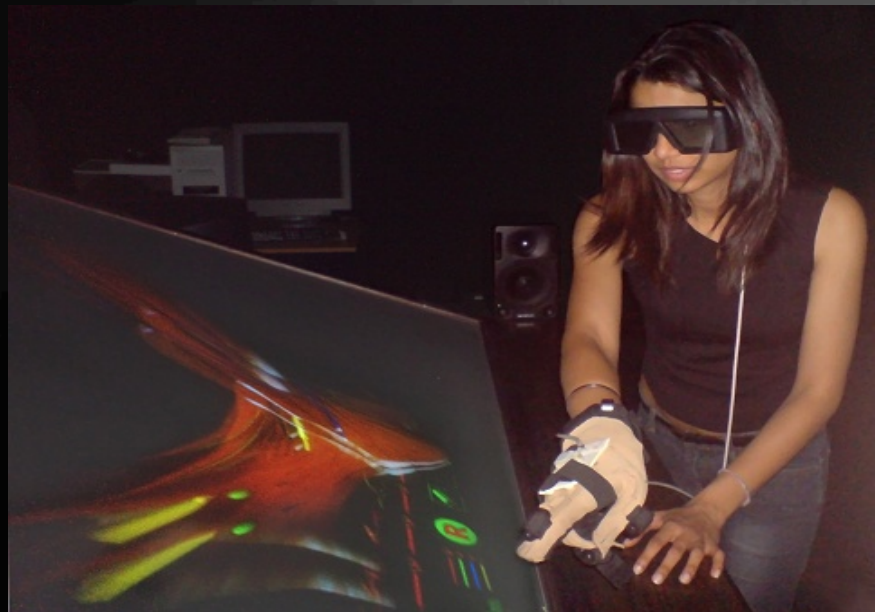




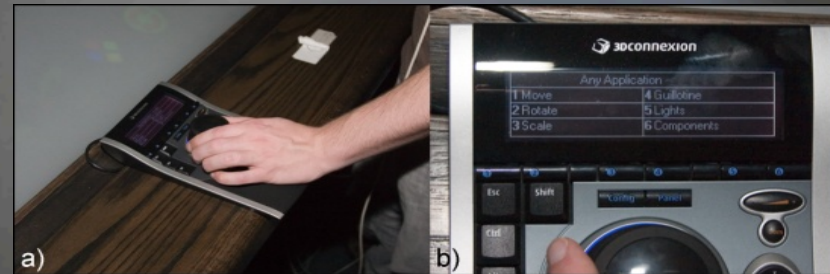
Grasp Devices



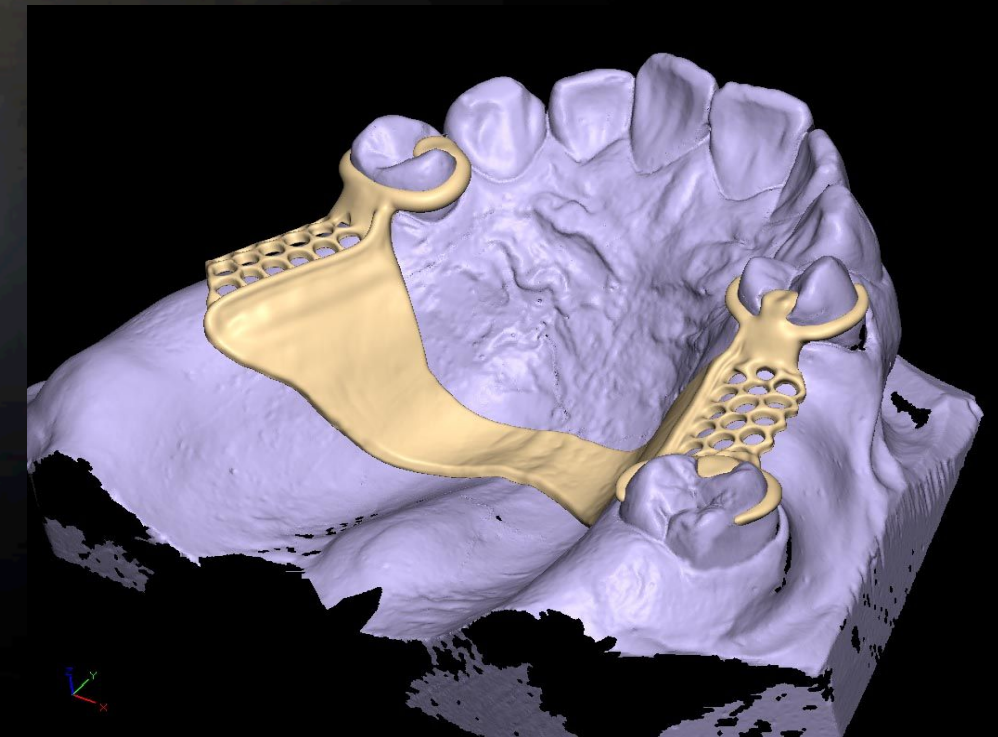
Probing and Force Feedback



3D Real-time Imaging



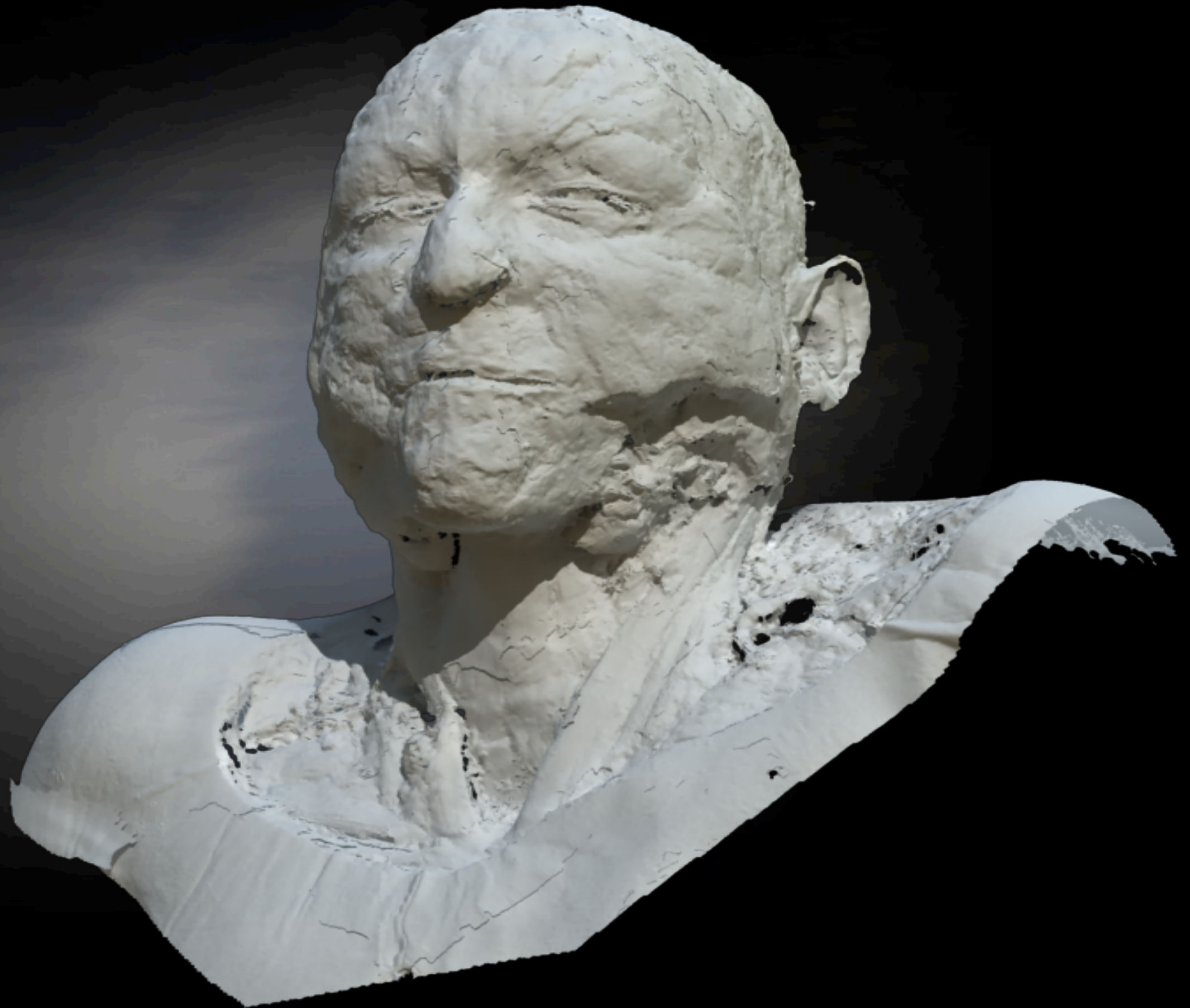
3D Space Navigation

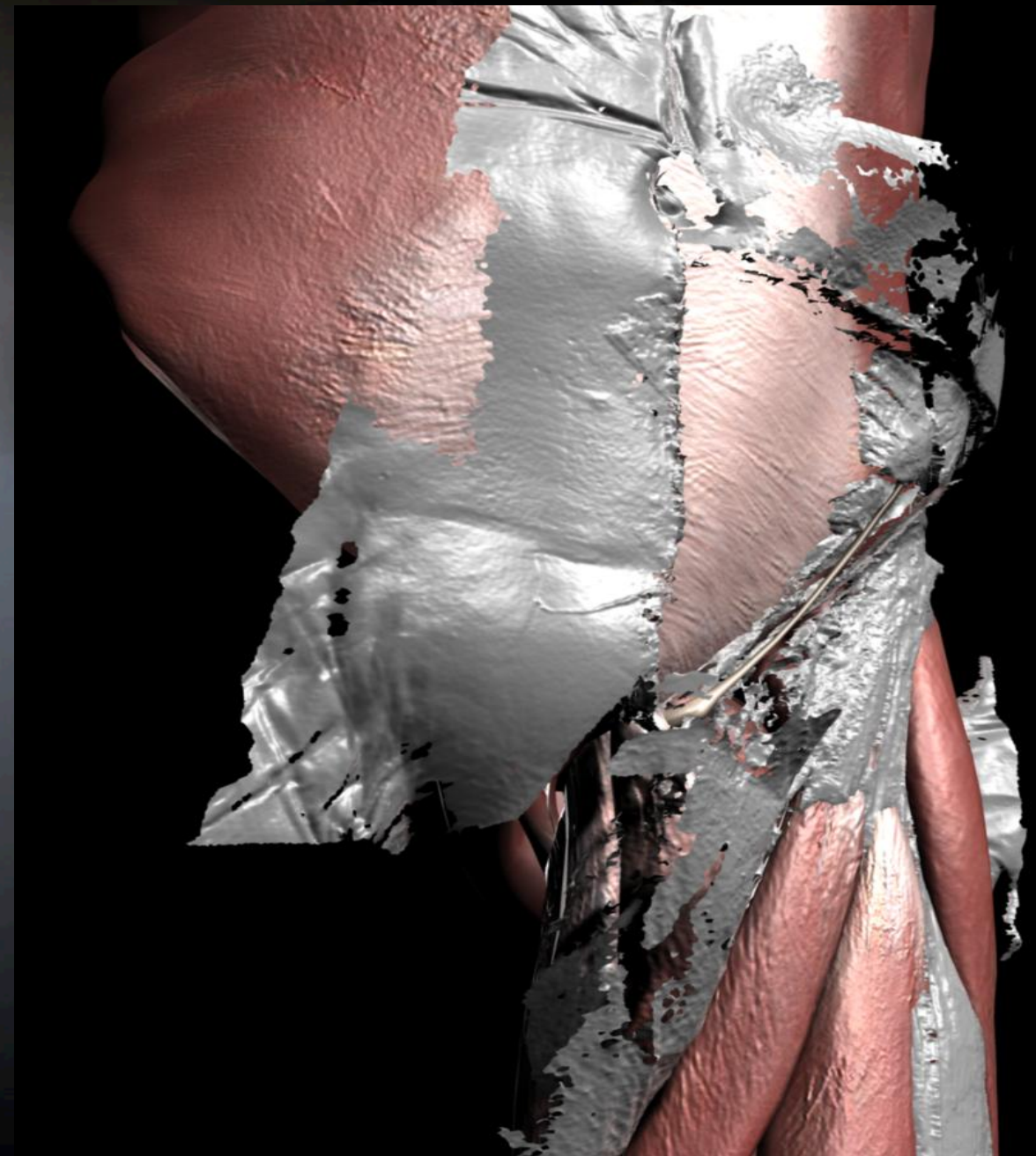
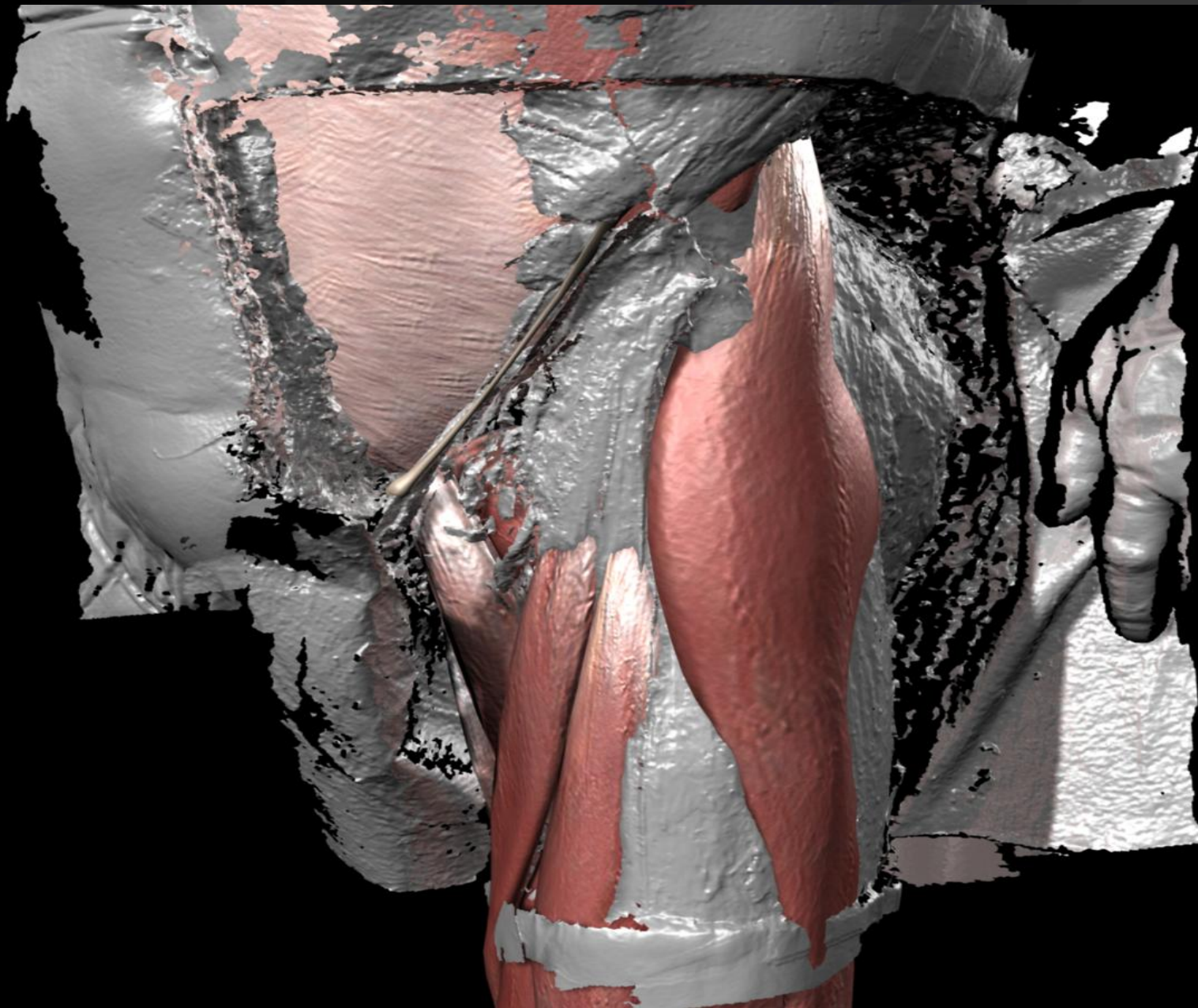


3D Haptic Modelling



Touch Technologies





**Relationship between Laser Scanned Imaging and 3D Digital Modelling**

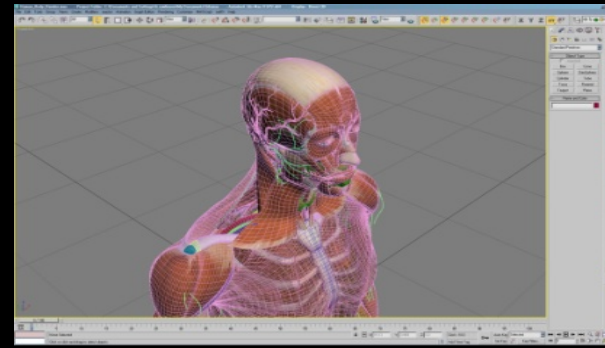
Dissected Material



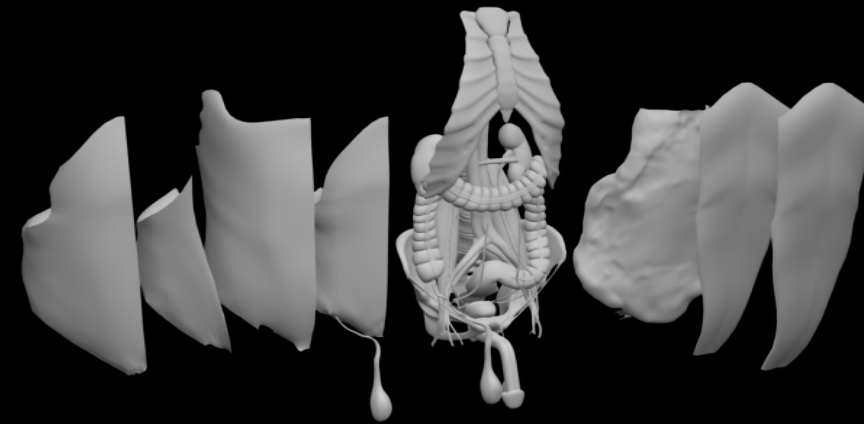
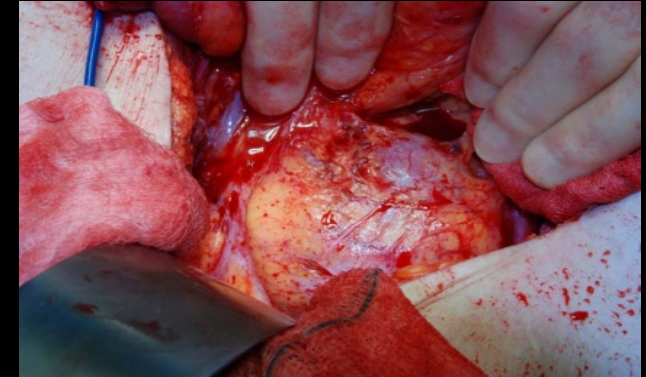
3D Laser Scanning



Modelled in MAYA



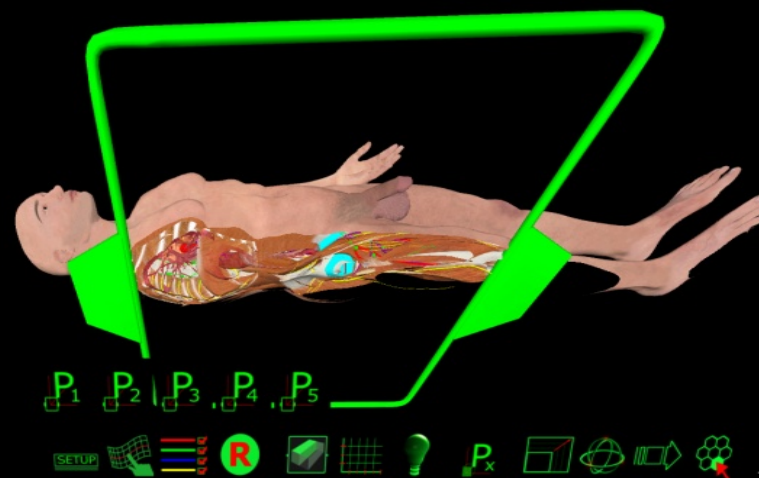
Digital Photography



Texture Mapping



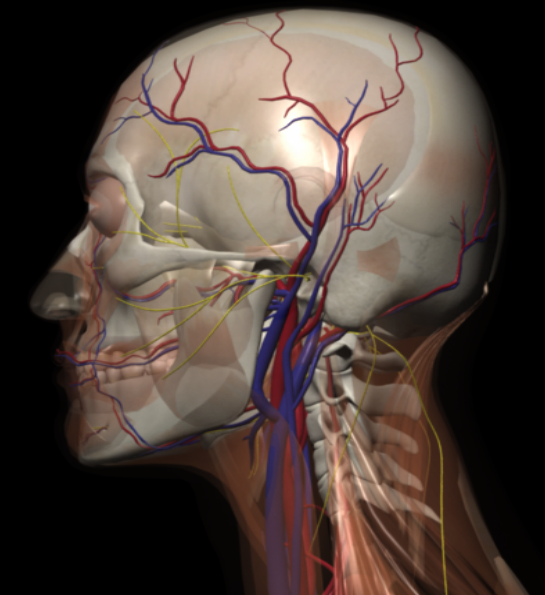
User Interface Development

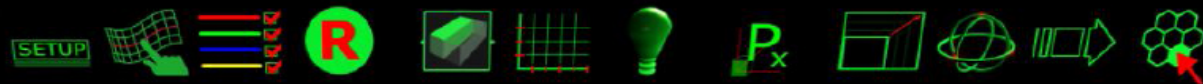
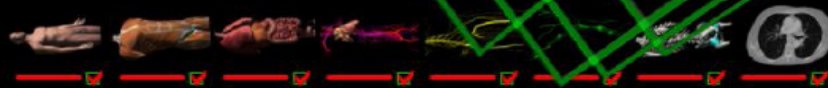
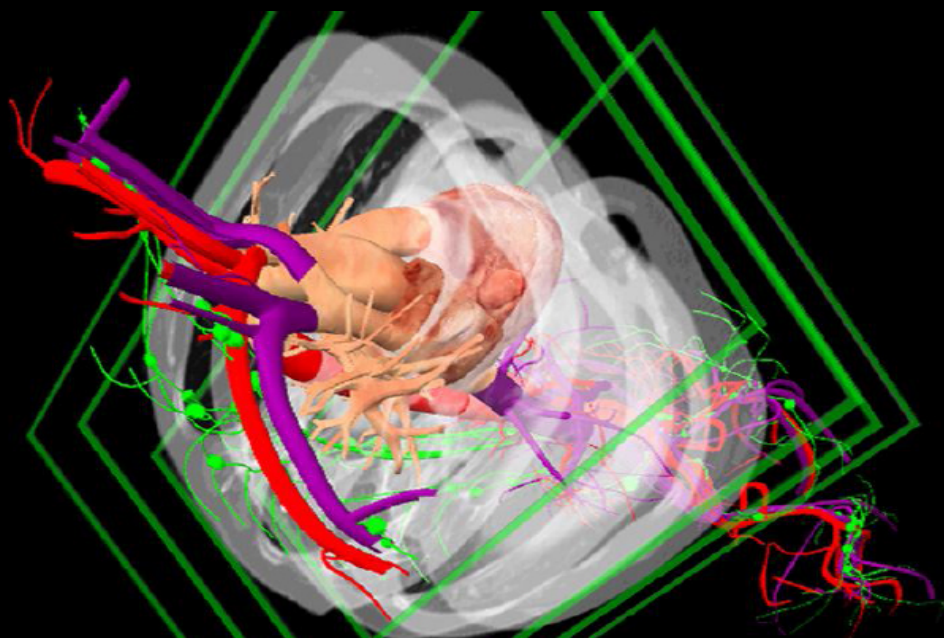
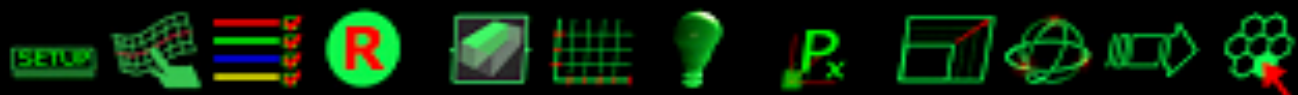
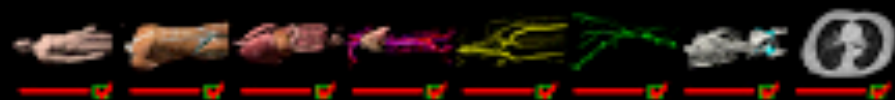
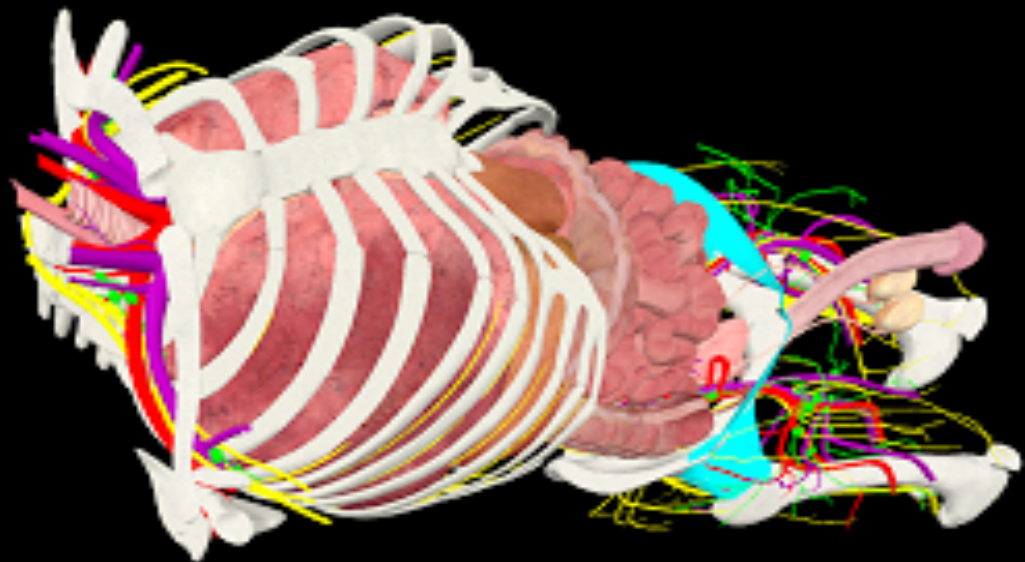


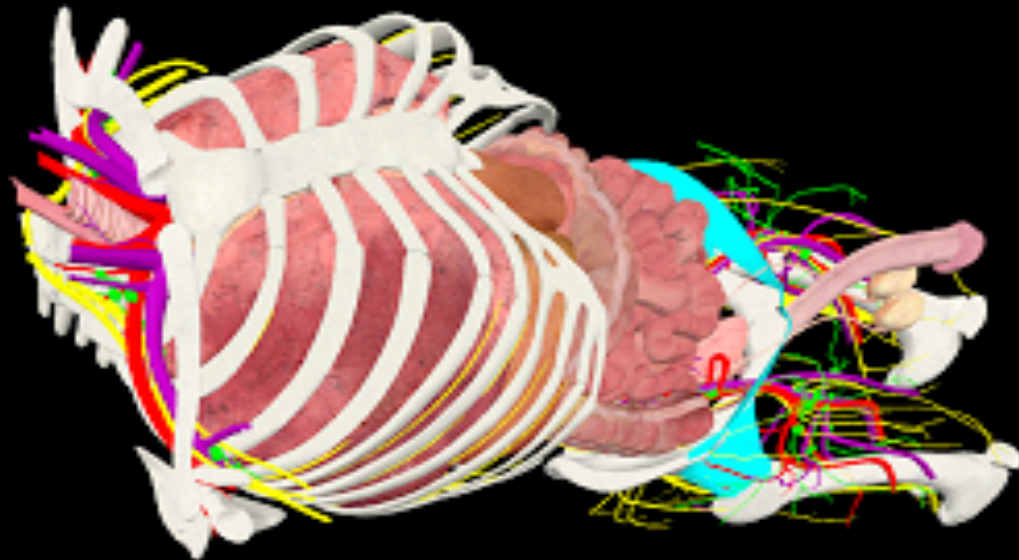
User Trials and Testing



Validation







## Vision

- Display scale (desktop to large 3D Immersion)
- 3D head tracking for users
- Lighting effects and texturing

## Interaction

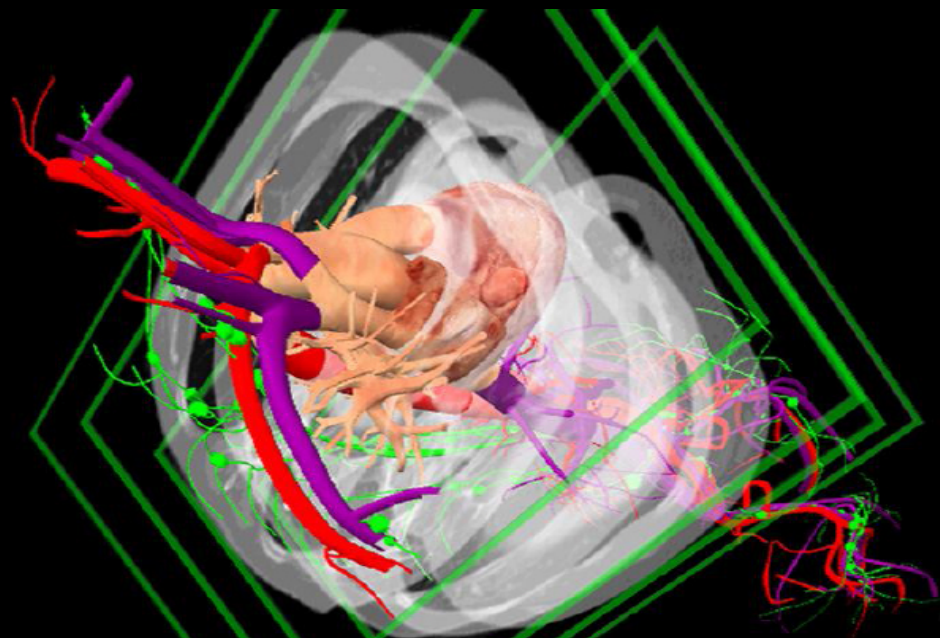
- Real-time collision detection
- Hand and grasp calibration
- Touch cues and haptic feedback

## 3D Interface

- Icons, menus and toolsets
- Customisation supporting different disciplines
- Interaction sounds for data and tools

## 3D Models

- Modelling for real-time applications
- Cross platform for importing / exporting different data types











DIGITAL:  
DESIGN STUDIO  
THE GLASGOW  
SCHOOL OF ART



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Tools

Mode

Actions

Components

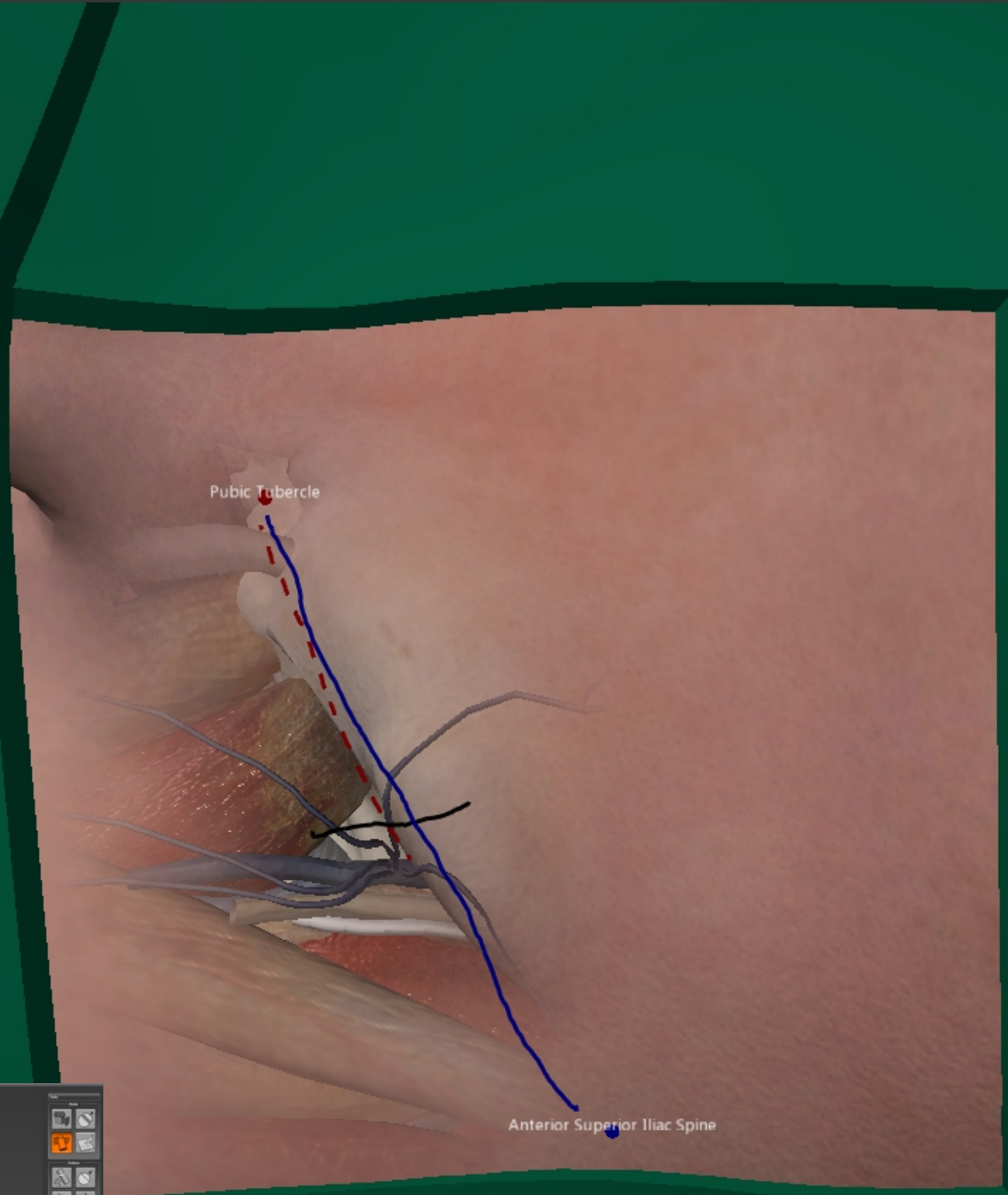
- Adrels
- Anulus Umbilicalis
- Aorta
- Bladder
- Colon
- Cords
- Cremasteric Fascia
- External Oblique
- External Oblique Botto
- Fat
- Femoral Nerve
- Hip Ligaments
- Inferior Epigastric Ves
- Inguinal Ligament
- Internal Oblique
- Ivc
- Kidneys

Anatomy Markers

- Cremasteric Fascia
- External Soermatic Fa
- Ilioinguinal Nerve
- Inguinal Ligament
- Lacunar Ligaments
- Pectineal Ligament
- Renal And Gonadal V

Hernia Type

- No Hernia
- Direct Inguinal
- Indirect Inguinal
- Femoral



Tools

Mode

- Camera
- Rotate
- Print
- Measure

Incision Markers

- Pubic Tubercle
- A/S Iliac Spine
- Midpoint
- Inguinal Ligament
- Incision
- Clear All

Operation options

- View Procedure
- Patient Note
- Adjust Drapes

View options

- Show/Hide Drapes
- Transparent Skin
- Reset View

Components

- Skin
- Fat
- External Oblique
- Internal Oblique
- Transversus Abdominis
- Peritoneum
- Colon

Anatomy Markers

- Cremasteric Fascia
- External Iliac Foramen
- Iliopubic Ligament
- Inguinal Ligament
- Lacunar Ligaments
- Pectineal Ligament
- Renal And Genadial V

Hernia Type

- No Hernia
- Direct Inguinal
- Indirect Inguinal
- Femoral

Patient Referral

Dear Dr. Chan,

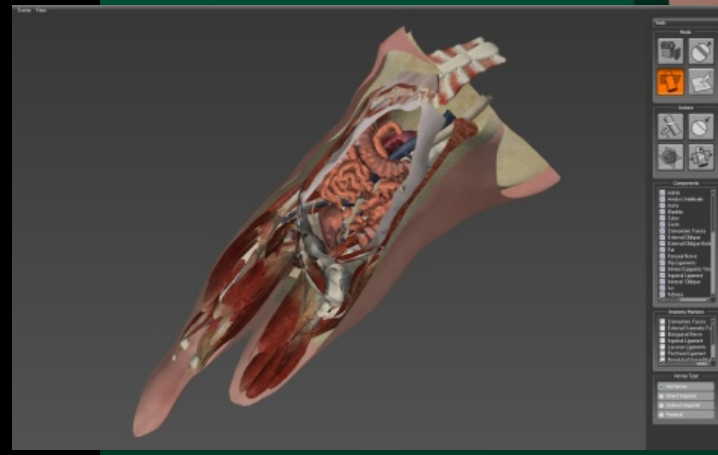
Re: Mr Joe Bloggs  
Date of Birth: 7/9/1965

This patient has a recurring reducible left inguinal hernia which is uncomfortable after lengthy standing. He has delayed for some time in seeking advice for this as he has had MS in the past which is currently stable and he is loathed to undertake anything which may stir up the problem.

On examination there is a small bulge which is obvious and I think once he has returned from his trip to America he would like you to close off the gap.

Thank you for seeing him.

Yours sincerely,  
Dr. K. Bale



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# Digital Design Studio



Thank you

Digital Design Studio