Integrating 3D data acquisition techniques for comprehensive study of the ancient Hellenistic-Roman Theatre of Paphos, Cyprus

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The site of the ancient theatre of Nea Paphos is located in the modern town of Kato Paphos. It was built on the southern slope of a hill, which is in the very north-east of the ancient walled city. It measured m 90 × 195 from side to side and had a seating capacity for over 8000 spectators.
Topographical and photogrammetric survey of Paphos Theatre

**Aim of the project:**
Create a 3D model of the Hellenistic-Roman Theatre of Paphos

**Technologies adopted:**
- Automatic photogrammetry (Fly Scan)
- Laser scanning

**Outcome:**
3D model suitable for:
- Documentation
- Dissemination
- Virtual reconstruction
- Sections and maps extraction
- Visualization: Internet, standard monitors, special 3D visualization monitors.

**Automatic photogrammetry**
FIG Congress 2010
Facing the Challenges – Building the Capacity
Sydney, Australia, 11-16 April 2010
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Comparison between the previous drawing and the orthophoto

Orthophoto generated from point cloud

Laser scanner data integration
Conclusions

The integration of the two techniques is suggested in order to achieve a complete and accurate documentation of the studied object:

• aerial photogrammetry for large scale acquisition with accuracy of 1-2 cm
• laser scanning for the acquisition of fine details with accuracy of 1 mm.

The research goal of a work and the expected results are in sum the key factors in the choice of the technology to adopt.
Collaborations

THE CYPRUS INSTITUTE

Paphos Municipality

Department of Antiquities in Cyprus

The University of Sydney

Institute for Technologies Applied to Cultural Heritage

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Thank you

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