



Goals and implementation of the “Villa di Livia” project

A large, semi-transparent image of a virtual reality laboratory is overlaid on the slide. It shows several people wearing VR headsets and using hand controllers in a room with large projection screens displaying virtual environments. The room is dimly lit with spotlights.

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Summary

- The birth of the Via Flaminia project
- The sites, the landscape, the context
- Methodological and multidisciplinary approach
- Virtual ecosystem, ecology, diacronical approach
- Partners
- Outputs
- Keywords of the project

The birth

- The idea of the Virtual Museum of the Ancient Via Flaminia is born from the necessity of **studying and communicating an “hidden” rich archaeological territory**.
- This area of Rome, in fact, differently from other sites of the city, is characterized by a heavy **urbanization** which have destroyed most of the archaeology. Nevertheless many **monuments** and parts of the Roman road (via Flaminia) are **still visible**, even if unknown.
- Based on VHLab **previous experiences** (VR museum of Giotto's Scrovegni Chapel, Appia project, etc.), the team planned to build a **VR installation** inside an important museum, which could maintain the **social aspects** typical of the visit in a museum: **multi-user application**



The sites

- Through the VR application, visitors can **explore the landscape** that characterized the Roman road, Via Flaminia, and have an **intense experience visiting 4 sites**, reconstructed in details:
 - **Milvio Bridge**: one of the oldest Roman bridges still standing in Rome where, in 312 AD, the emperors Constantine faced Massentius in a famous battle.
 - **Grottarossa** Roman necropolis: with its intact archaeological landscape, the roads flanked with its funerary monuments, so typical during Roman times.
 - **Villa of Livia**, Augustus emperor wife, with its wonderful frescos conserved in the Roman National Museum (Palazzo Massimo)
 - **Malborghetto**: originary a 4-sided arch where Constantine had his famous dream of a Christian cross.
- These sites have been acquired with **integrated technologies** and processed to obtain digital models at **different levels of details**



The Landscape

- The primary goal of the project was to reconstruct and to communicate the **archaeological landscape**, that is the diachronic contemporary landscape, together with interpretations and hypothesis regarding its aspect in the past (**potential landscape**).
- This was essential: to let visitors to understand the sites **in their context**; to enable an **active cognitive comparison** which increase the capacity to understand; to produce a **geo-spatial scientific base**, useful to perform spatial analyses and to start an **open process of reconstruction** of the ancient landscape

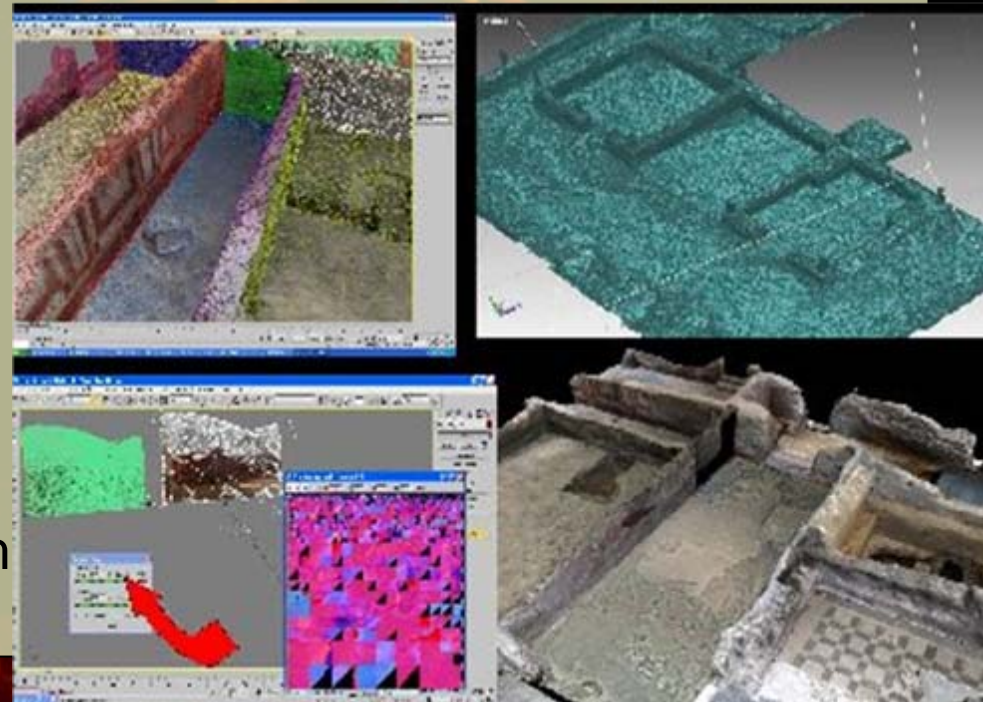


The context

- The possibility to compare, in the same space-context, archaeological remains and past context reconstructions, opens **new scenarios of learning and modalities of feedback**. Each monument and site is **re-contextualized in the landscape**: in this way, it is possible to understand the **ecological relations** between artificial-anthropological and natural elements/activities.

Methodological and multi-disciplinary approach

- The reconstruction of cultural sites was based on a **massive activity of topographical, archaeological and architectonic survey**, whose goal is data acquisition at different levels of detail (DGPS, laser station, 3D laser scanner, photogrammetry, cartography, remote sensing, aerial and satellite photos processing). Data are then post-processed in order to be **integrated in the system**.
- **3d models** have been processed in CG software (3D Studio Max) and then implemented in the VR engine
- **Spatial datasets** have been processed in GIS and Remote Sensing software (GRASS, ArcGIS and ErMapper)
- **Story telling elements** (avatars, multimedia products) created through motion capture and video techniques



Virtual ecosystem

- The general goal of the application is the creation of a **digital virtual ecosystem**, where archaeological, topographical, perceptive, interpretative, narrative, emotional and symbolic data are connected. The final result is the **communication of a “sense of place”**, that is its anthropological value, in order to obtain a **relevant cultural result**.



References

- Partners: CNR ITABC, National Archaeological Superintendence
- Sponsor: Arcus spa
- Budget: 800k euro
- Timing: 2 years
- People: 10 people (archaeologists, art historians, architects, computer scientists, musicians)
- Web: www.vhlab.itabc.cnr.it/flaminia
- Articles and books: M. Forte, *La villa di Livia. Un percorso di archeologia virtuale*, Erma di Bretschneider, 2007; VAST 2007; VSMM 2007; Forte M., Pescarin S., Pietroni E., Rufa C., *Multiuser interaction in an archaeological landscape: the Flaminia project*, in Proceedings of the 2nd Int. Conference on Remote Sensing in archaeology "From Space to Place", Rome 4-7 Dec. 2006, BAR Int. Series, 189-196

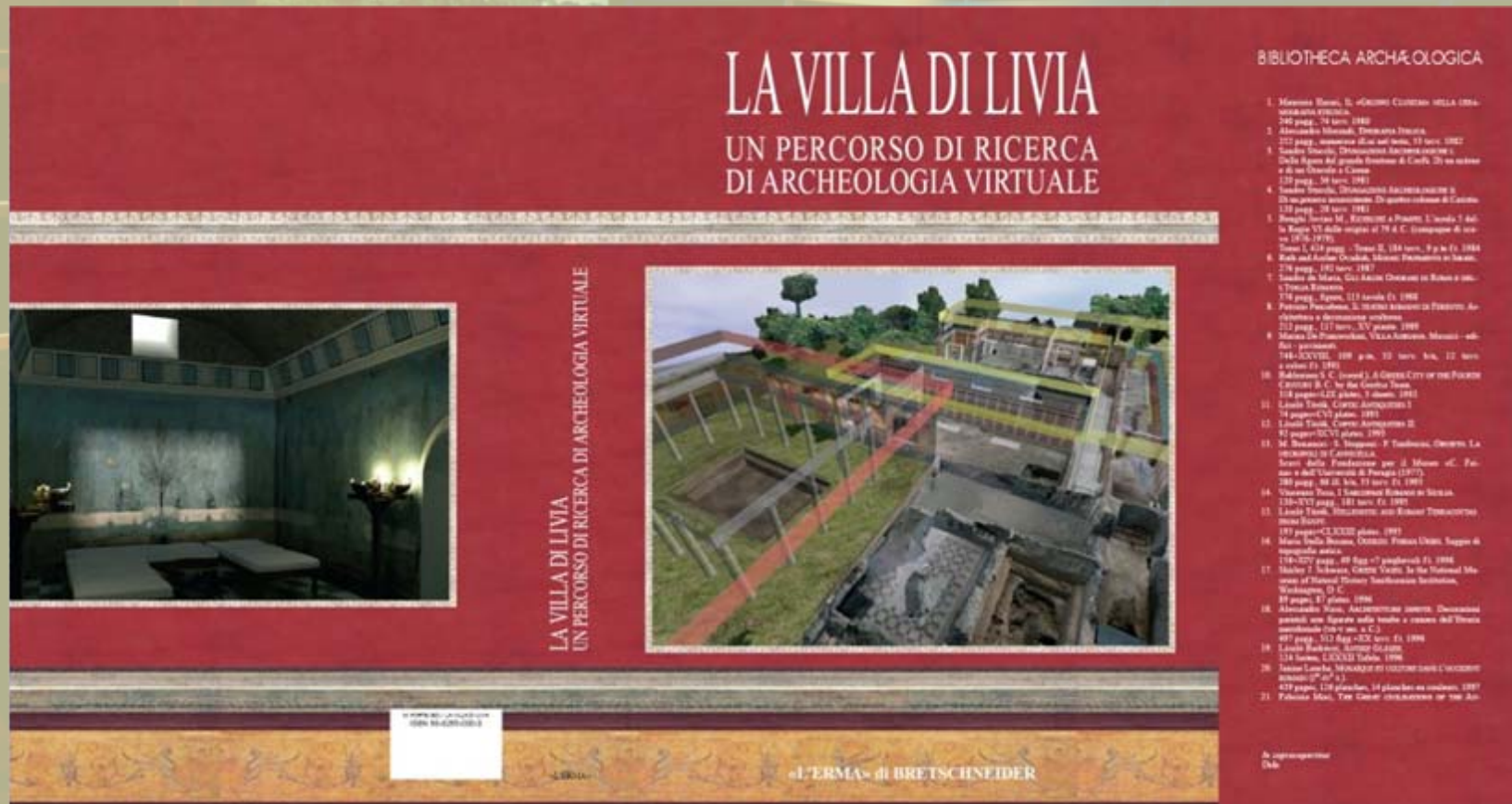
Results: The Museum installation

- The VR system is a MUD (Multiuser Domain) planned for 4 interactive platforms (each one with a mono display) and a HD stereo display 1024 x 768. In the museum space the visitors **share interactively the same virtual space**, each one interacting with one platform, but also with **joined actions**, creating a **virtual performance** on a large screen where other visitors can assist in stereoscopy



Results: The Book and DVD

- M. Forte (ed.) *La Villa di Livia: un percorso di archeologia virtuale*, Erma di Bretschneider, Rome, 2007





Results: the Internet site and the single user web application

www.vhlab.itabc.cnr.it/flaminia

Virtual Museum of the ancient via Flaminia - home - Mozilla Firefox

File Modifica Visualizza Cronologia Segnalibri Strumenti 2

http://www.vhlab.itabc.cnr.it/flaminia/

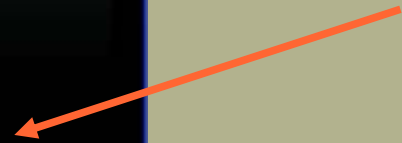
MIUR WEBMAIL CNR REGmail SIPER UTENTI_CNR SIGLA VIRTUAL ROMEO PLUGIN NIKE_EVA BANDI MIUR

VIRTUAL MUSEUM
of
the **ANCIENT** via **FLAMINIA**

MINISTERO PER I BENI E LE ATTIVITÀ CULTURALI
SOPRINTENDENZA ARCHEOLOGICA DI ROMA

DOWNLOAD SINGLE USER VR APPLICATION OF LIVIA'S VILLA (ITALIAN: 395 MB) (ENGLISH: 363 MB)

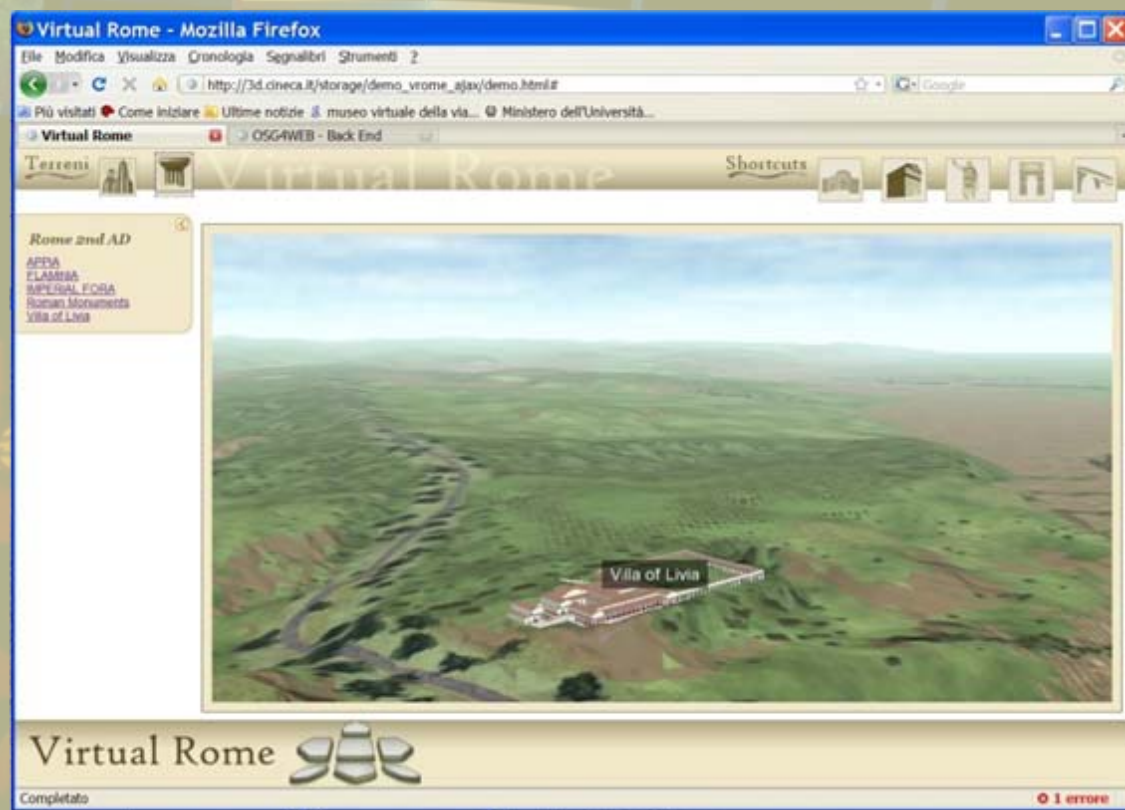
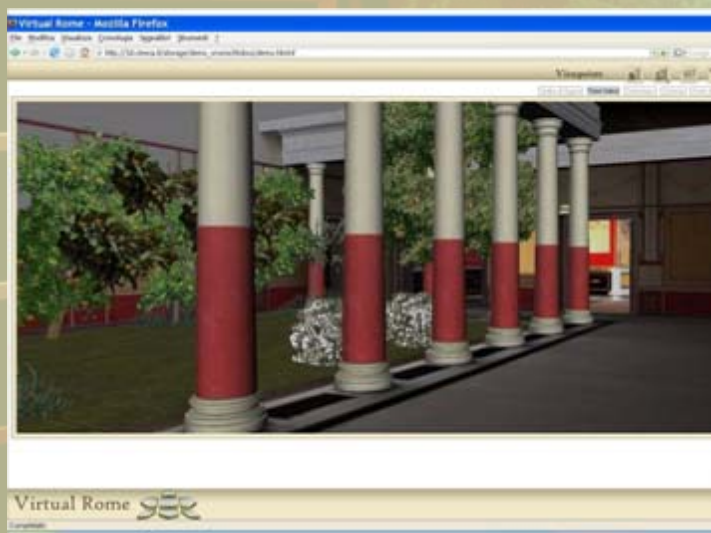
Completato



Further Results ... Virtual Rome

www.virtualrome.net

Open Source VR webGIS dedicated to the archaeological and ancient landscape of Rome (21st and 2nd cent. AD)

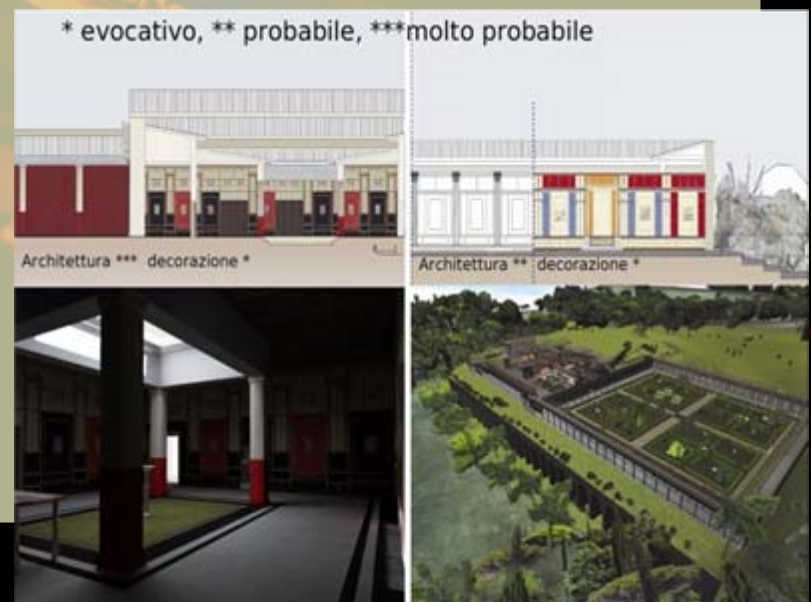


Keywords

The main key topics of this installation are **space**, **relations**, **MUD** and **virtual storytelling**.

•**Space:** we can distinguish: the **archaeological** landscape; the **potential ancient** landscape and the **hybrid-augmented** landscape

•**Relation:** all the relations that a context, a room, a decoration, can develop in the space-time are very useful for architectonic and chronological interpretation. They can be used to stress the **transparency** process.



Keywords

- **MUD:** The MUD represents a solution for **public accessibility**, an open virtual museum, a **multimodal interaction of collaborative learning**. In the MUD perceptive-motor (virtual navigation) and reconstructive symbolic (virtual storytelling) activities coexist creating **imitative processes of interaction**.
- **Storytelling:** is based on narrative techniques and metaphors, virtual characters, avatars, 'speaking objects'. Their aim is to **make the space 'alive'**.