

## TIME MACHINE CONFERENCE 2021

Ferdinand Maiwald / Sander Münster

UrbanHistory4D (TU Dresden, JMU Würzburg)  
Kulturerbe4D (FSU Jena)



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# Project background – UrbanHistory4D

## Junior Research Group UrbanHistory4D (Sponsor: BMBF, 2016-2021 - completed)

**Object:** Multimodal access to historical image repositories to support research and communication in urban and architectural history

**Sources:** Digitized historical photographs, contemporary 3D city model

**Multiple research questions:**

- historical-architectural perspective (e.g., architectural development of a city)
- methodological perspective (e.g., identification of use cases)
- informational-technical perspective (e.g,

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# Application - UrbanHistory4D

<https://4dbrowser.urbanhistory4d.org/>

# Project background – Kulturerbe4D

Kulturerbe4D (Sponsor: DBU, 2020-2022)



**Objective:** 4D visualize no more extant historical cityscapes & inform about preservation

**Sources:** Digitized historical photographs and groundplots as raster data, textual and oral information

## Challenges:

- 3D Modelling via extant photogrammetrical algorithms is not working
- 4D modelling of time varying content
- Multimodal content fusion / representation
- Inclusion of user generated content / co-design



**Ferdinand Maiwald**

Coordination and Computing

 [Ferdinand.maiwald@uni-jena.de](mailto:Ferdinand.maiwald@uni-jena.de)



**Susanne Karsten**

User-Experience-Design

 [Susanne.karsten@uni-jena.de](mailto:Susanne.karsten@uni-jena.de)



**Jonas Bruschke**

Human-Computer-Interaction

 [Jonas.bruschke@uni-jena.de](mailto:Jonas.bruschke@uni-jena.de)

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# Application – Kulturerbe4D

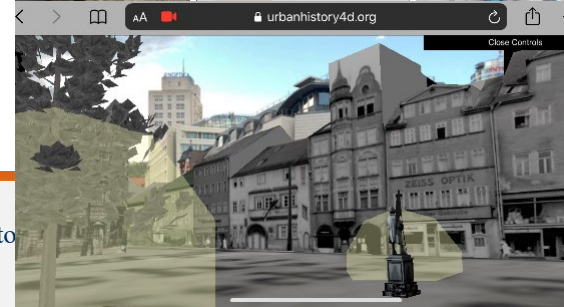
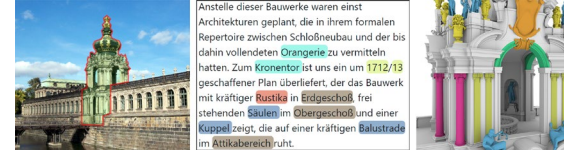
Work-in-progress

Mobile/Desktop version  
available via  
<https://4dcity.org/>

## Next steps

Ecosystem of applications and research approaches (carried out in 5 projects so far):

- City models: Venice, Jena, Dresden
- Adaptive city tours based on the preferences of the user, Information system for museums as 4D interfaces
- School cooperation to enable pupils to develop tours for children
- Multimodal enrichment (detection & aligning of entities in models, text, images)



<https://4dbrowser.urbanhistory4d.org/>

<https://4dcity.org/>

Thank you  
for your attention!

