Visualizing Knowledge about Virtual Reconstructions of Ancient Architecture

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ANCIENTVIS

◆ Interactive visualization tool for ancient architecture

◆ Uses non-photorealistic rendering

◆ Represents uncertainty through line styles

Why non-photorealistic?

◆ Photorealistic graphics suggest
○ Buildings actually exist
○ Pictures are accurate
○ Detailed information has been amassed about architecture

We are honest and we don't lie.

- Therefore, we use non-photorealistic rendering.

NOT REAL – SOMEONE'S LYING TO YOU

Palace of Otto the Great (medieval German ruler)

Lines lines lines

◆ Different lines say different things

I'm straight!

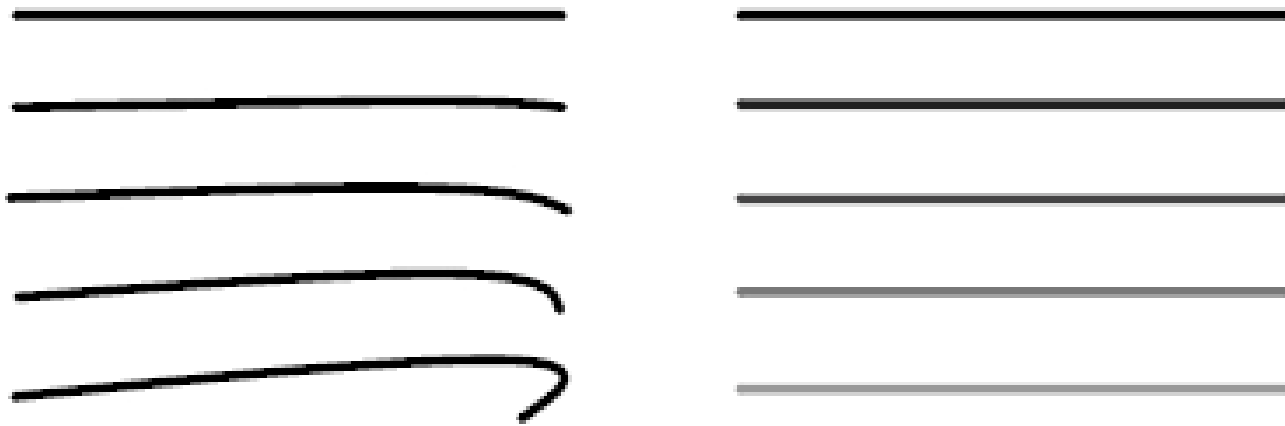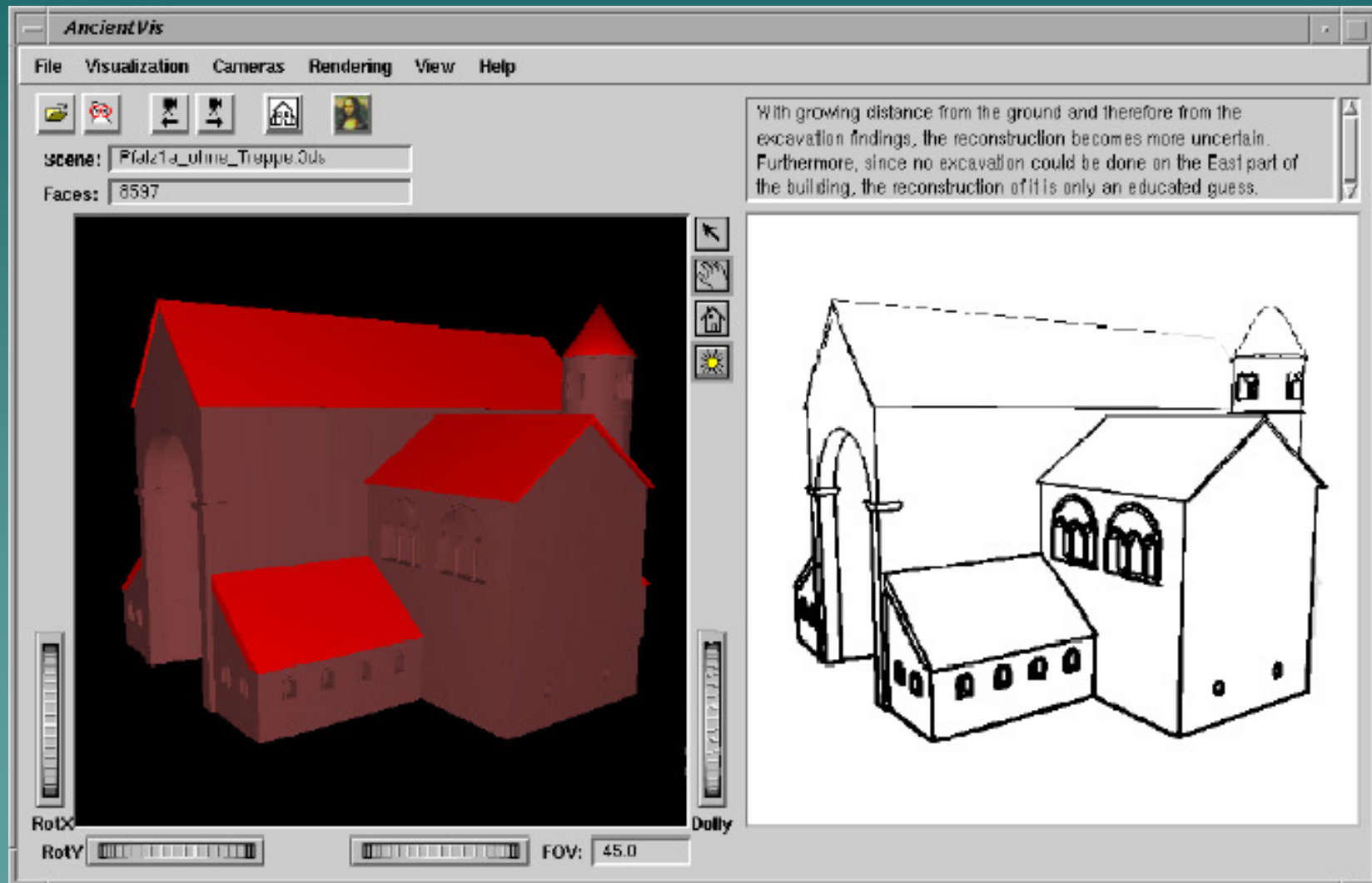I'm not!

Lines lines lines

Figure 4. Two sample line styles used for varying degrees of uncertainty (top: high certainty (low uncertainty); bottom: low certainty (high uncertainty)).

ANCIENTVIS at work

Interactivity

◆ Users are able to

o choose 1 of 2 line styles in previous slide OR USE BOTH!

o define style property functions

o ask for reasons parts of architecture were represented a certain way

  ➢ analogies
  ➢ deductions

Style property functions
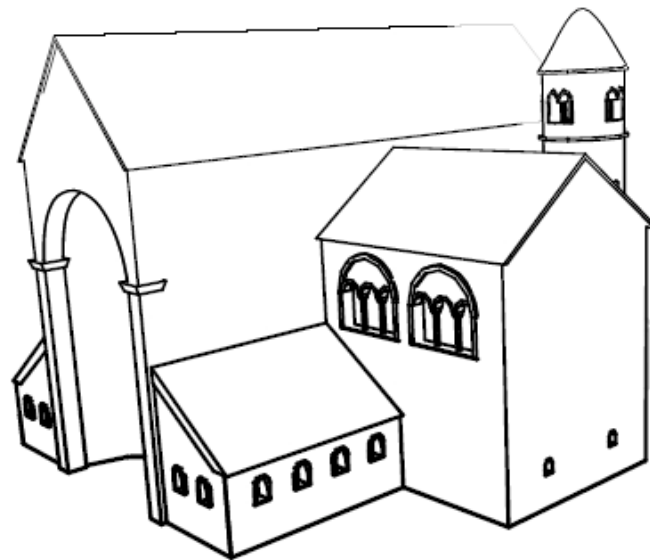
◆ User-specified 3D vector

Figure 6. Visualization of the uncertainty rising with growing distance from ground and additional uncertainty of the back part of the building.
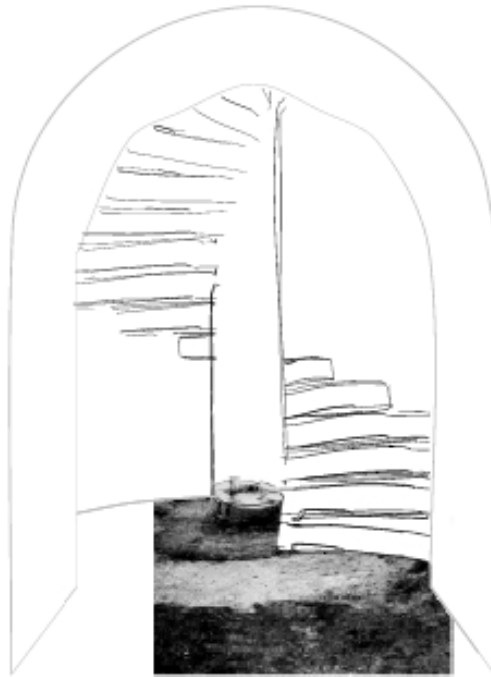
Logical deduction

Figure 10. Visualization of the staircase along with a picture of a part of the excavation site as example of a deduction.

Analogy

Figure 11. Visualization emphasizing those parts of the model which were attributed to the Romanesque period.

Another analogy

Figure 12. Visualization of the palace entrance together with an image of the chapel of Aachen from which its form was deduced as an example of an analogy.

ANCIENTVIS ←→ Midway Gardens

- Uncertainty representations in architectural models
- Involving structures which no longer exist
- Lack of visual documentation
- Interactive!

Questions

- Is using line styles to represent uncertainties good?

- If AncientVis were a program available to us, would we use it for our project?

- Should we include source material in our representations, such as the staircase? Would it look weird?