

## Cinema reconstruction in VR

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### Background

Virtual reconstruction of old buildings is usually focused on the appearance of the building, but with virtual reality there is an opportunity to also recreate part of the function of the building. A quite common social VR application is apps where you can watch movies in a virtual cinema theater, such as Bigscreen. These applications have different cinema theater rooms to choose from, but one missed opportunity is the recreation of old decommissioned cinema theaters.

By reconstructing old cinemas in VR, including lobby areas and such, the experience of watching a movie with friends in an old cinema can be recreated. This has relevance for cultural heritage preservation, an area of VR usage that is quite common.

### Project description

The intention of the project is to do a proof-of-concept application with one cinema; Flamman in Gothenburg. There are two reasons that Flamman have been selected; the building is still quite intact, so it is easy to get reference documentation, and it is a beautiful building with an interesting history, being one of the first modernist buildings in Gothenburg.

The steps of the project would be the following.

1. Build a 3d model of the Flamman interior and exterior. Drawings and extensive photo documentation of the building is already done. A simple 3d model is already built by the supervisor, and this could be refined by either the student group or the supervisor.
2. Import the 3d model as an asset into the game engine Unreal Engine (or Unity), and prepare it for export as a VR application.
3. Add interaction, primarily user movement through the environment, and movie selection.
4. Enable the playing of a movie (video and audio) inside the virtual cinema room (local video file and/or YouTube video)
5. If possible, add functionality to experience the movie together with other users (including seeing them as avatars and voice chat).

The project is mostly relevant for interaction design, user experience and game design.

### Previous and future work

In spring 2021, two master thesis projects and one bachelor thesis project worked on a similar project, so there exists previous material both in Unity and Unreal Engine, and project reports to have as starting points.

Since the project could continue after your thesis work we strongly suggest that all material from the project is considered open source and/or licensed under creative commons. This needs to be discussed before the project starts.

### Suggested reading (watching) material

*VR experience "Anne Franks House VR"*

Good example of historical recreation. Video giving an idea of the experience:

<https://www.youtube.com/watch?v=StDlz5fZqBQ>

*VR experience "Chernobyl VR Project"*

Good example of environment reconstructions. Video giving an idea of the experience:

[https://www.youtube.com/watch?v=U00WaZ\\_cbqo](https://www.youtube.com/watch?v=U00WaZ_cbqo)

*VR experience "BigScreen"*

One of the most popular apps for watching movies in VR. Interview with Bigscreen creator, Darshan Shankar:

<https://www.youtube.com/watch?v=TqwVuCj77pw>

### Target group

The proposal is relevant for students from DV, D and IT.

### Special prerequisites

Skills in Blender, Unreal Engine or Unity is not necessary but a big advantage.

### Proposal author

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