



# Investigating 3D Modelling of Buildings: New Cathedral of Salamanca

## INTRODUCTION

With construction completed over four hundred years ago, the New Cathedral of Salamanca stands as one of the oldest cathedrals in Spain. People from around the world journey to Spain and visit the quaint town of Salamanca to experience its presence and beauty. The cathedral definitely has a unique euphoria about it and was the main reason why the researcher decided to take on the task of investigating this building. Consequently, by taking on this project, the goal was to create a log of the cathedral's history and design, and with this information, understand the process involved in the creation of a 3-D model of the New Cathedral. On completion, the cathedral's valuable design features and sculptures were documented. In addition to this, an open source model of the cathedral using the 3D modelling software of *Sketchup*, was created along with the procedure used to arrive at this end product.



Figure 1: Photo outside the Cathedral of Salamanca. Taken by Shivan Boodram.

## RESEARCH QUESTIONS

Two very important questions were used to guide the authors research work:

1. What steps/procedures have been established or used thus far to model buildings and landscape by engineers and Geographic Information System professionals?
2. How can the knowledge gathered from the photos taken as well as the history and theme of the New Cathedral of Salamanca be used to assist in the designing of the 3D model?

**Shivan Boodram**

**Email: boodrams@my.erau.edu**

## RESULTS

1. **Photos:** A DSLR camera and GoPro camera was used to document key aspects and components of the cathedral's infrastructure. The images taken created a record of the cathedral's unique details and features.
2. **Procedure/Steps:** This study served the purpose of creating a record for the investigation and creation of actual models of buildings and can even be applied to the modelling of other objects.
3. **3D Model:** A computer-Aided Design called Sketchup Software was used to build a model which revealed the details and overall structure of the New Cathedral of Salamanca. The model was completed through the use of Sketchup, a 3D modelling software.

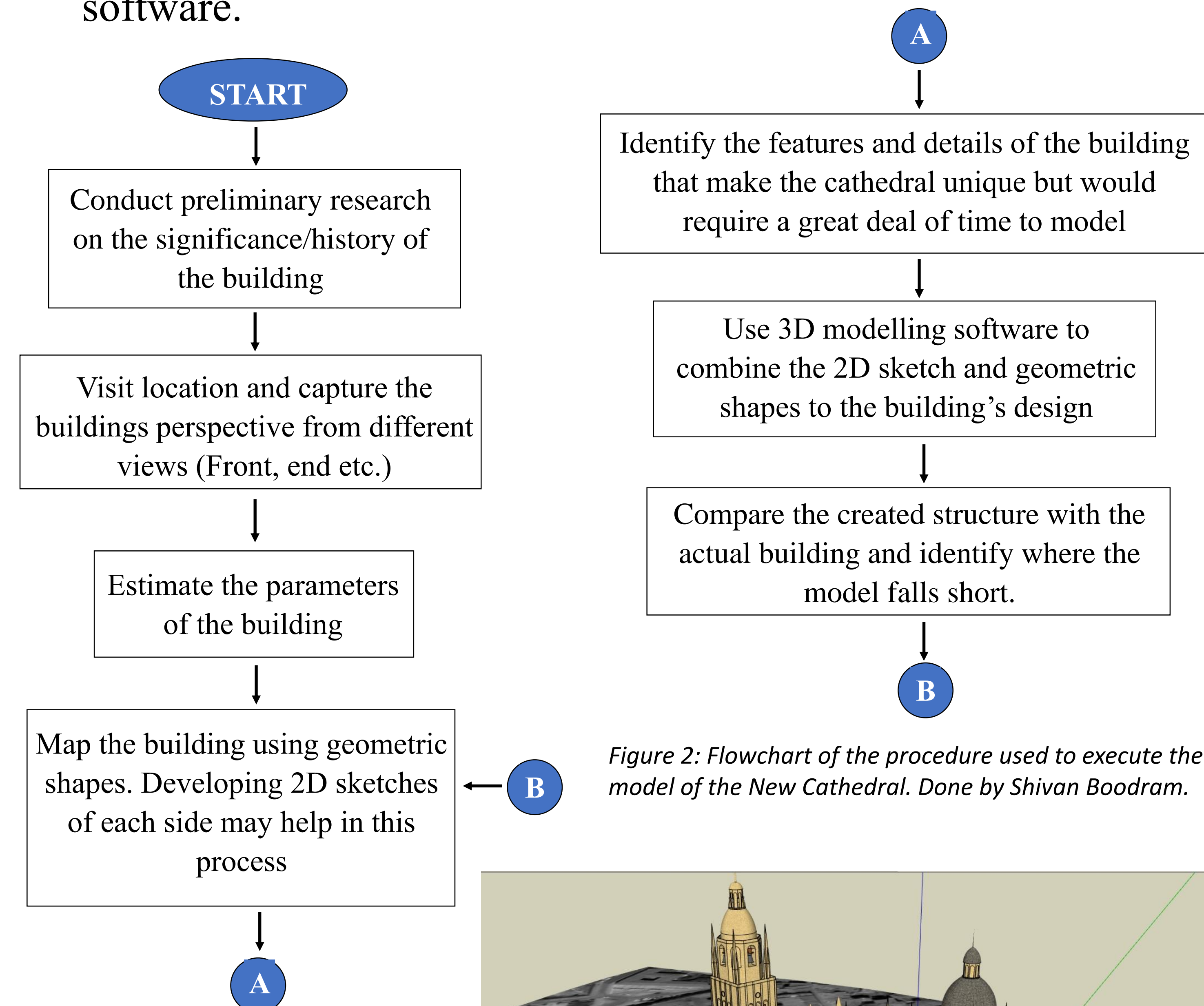


Figure 2: Flowchart of the procedure used to execute the 3D model of the New Cathedral. Done by Shivan Boodram.

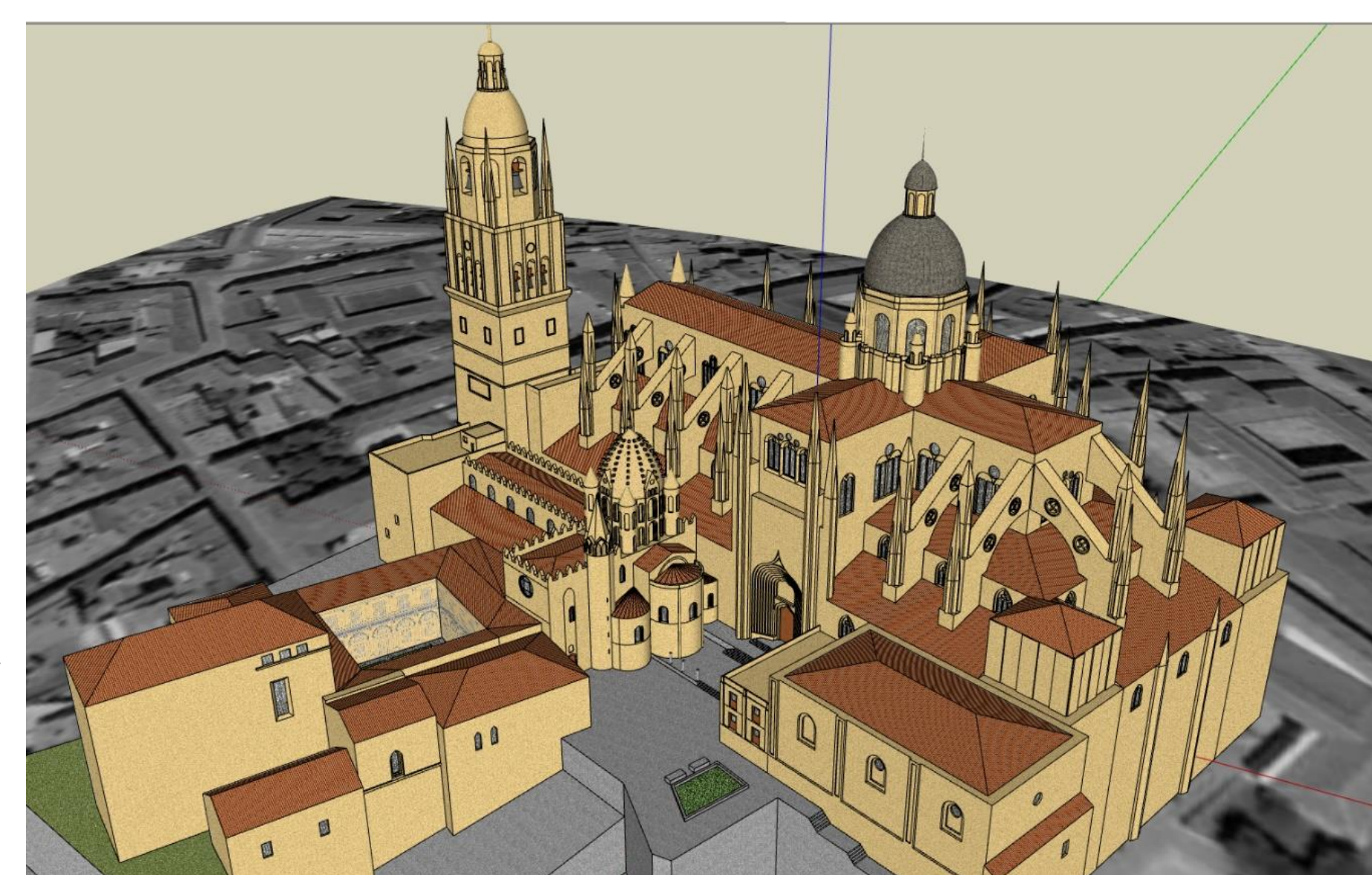


Figure 3: 3D model of the New Cathedral of Salamanca. Done by Antonio D. and Shivan Boodram.

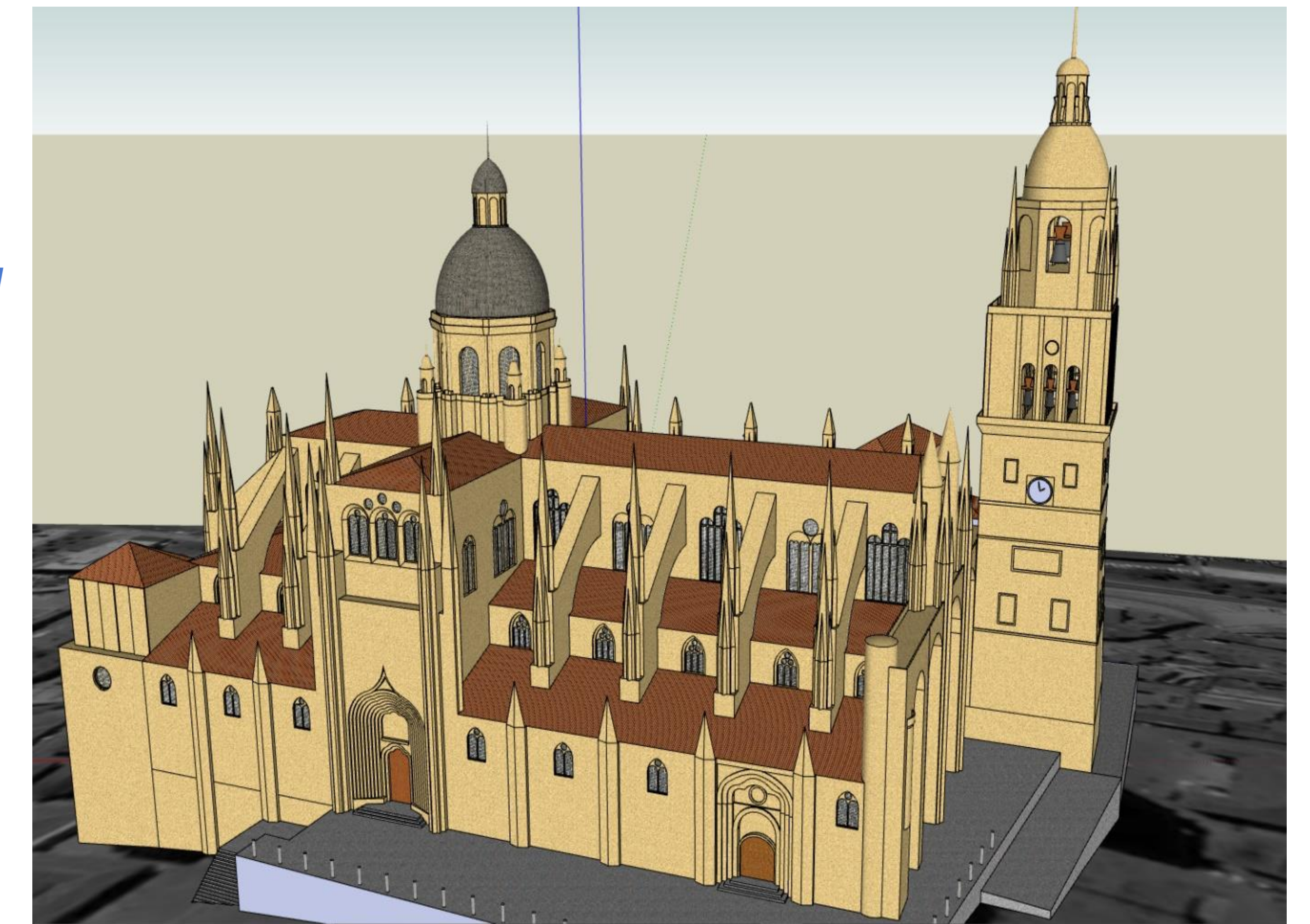


Figure 4: 3D model of the New Cathedral of Salamanca. Done by Antonio D. and Shivan Boodram

## CONCLUSION

With the completion of this report, the major outcome of the research was the detailed representation of the cathedral in a 3D projection. In addition to this, the report created a log of information regarding the history, construction and unique details of the New Cathedral of Salamanca. The information provided in this report can then be used to assist young or new video game designers in their planning and execution of the modelling of any other structure or city.

## ACKNOWLEDGEMENTS

Special thanks must be made to professors *Dr Ashley Lear* and *Dr Klemm Martin*. Both professors assisted in gathering the necessary information for the completion of this study.

## REFERENCES

- D., A. (n.d.). Catedral de Salamanca. Retrieved from <https://3dwarehouse.sketchup.com/model/b3df426d268a86c0e456b9d0e4f749c1/Catedral-de-Salamanca>.
- Gutiérrez Laura Illana, & Ferrero Alberto Fernández. (2015). *Salamanca, art and monuments*. Zaragoza: Edilera.