

Visualization Process of Prototypes for Overseas Digital Exhibition and VR Heritage Museum

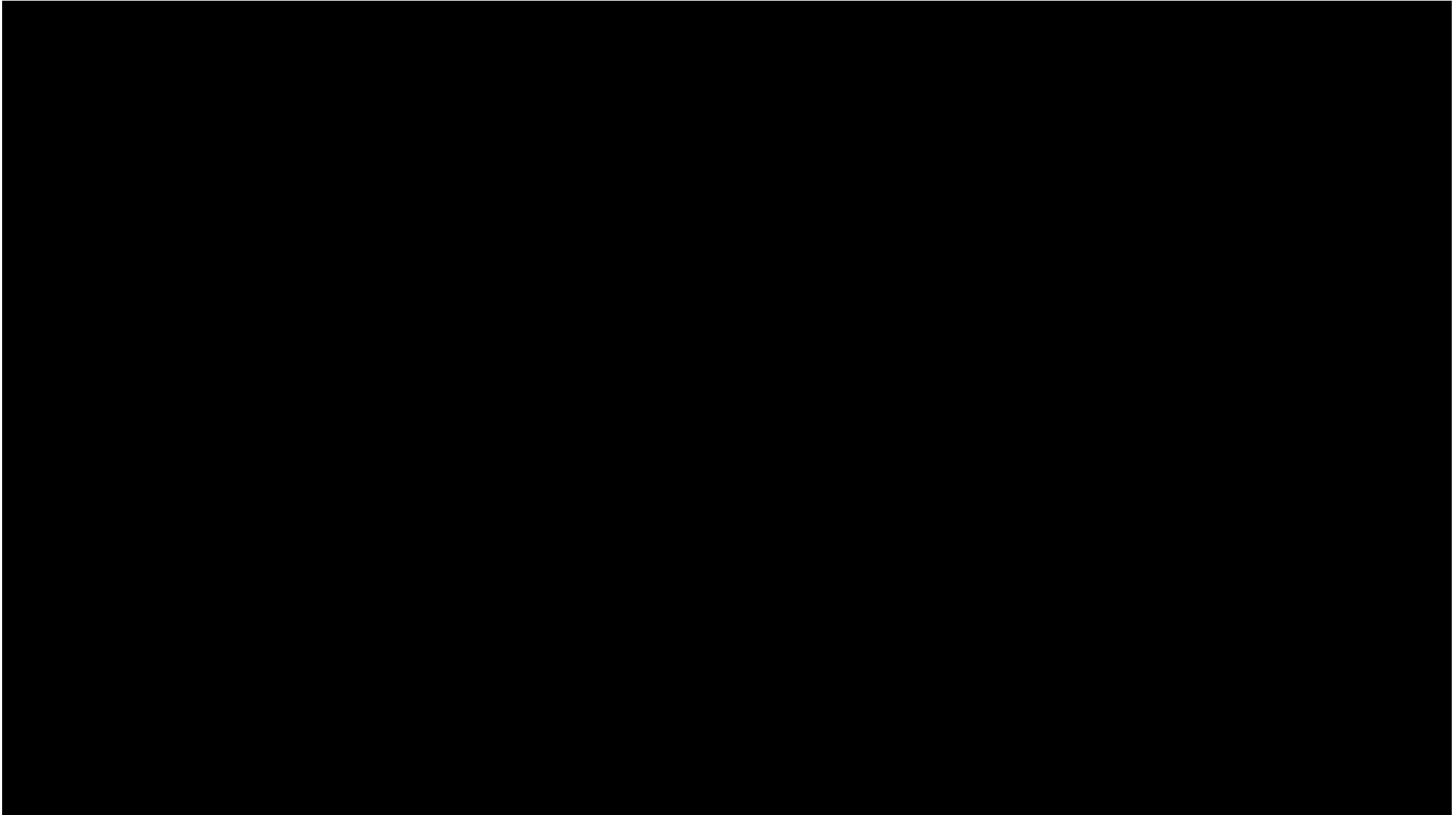
with a focus on Jongmyo Shrine

Yunsung Kim

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1. What is Jongmyo Shrine & Jongmyo Jerye ?



1. What is Jongmyo Shrine & Jongmyo Jerye ?

Jongmyo is the oldest and most authentic of the Confucian royal shrines to have been preserved. Dedicated to the forefathers of the Joseon dynasty (1392–1910), the shrine has existed in its present form since the 16th century and houses tablets bearing the teachings of members of the former royal family. Ritual ceremonies *Jongmyo Jaerye* linking music, song and dance still take place there, perpetuating a tradition that goes back to the 14th century. The ceremony was designated as a UNESCO World Cultural Heritage site in December 9, 1995, for its well-preserved ancient customs, such as memorial services and traditional music, which is National Intangible Cultural Asset No.56.



1. What is Jongmyo Jerye-ak ?

The Jongmyo rite is usually accompanied with the court music playing (Jerye-ak) and dance called Ilmu. Jongmyo Jerye and Jeryeak were designated as the first of South Korea's Masterpieces of the Oral and Intangible Heritage of Humanity by UNESCO in 2001.



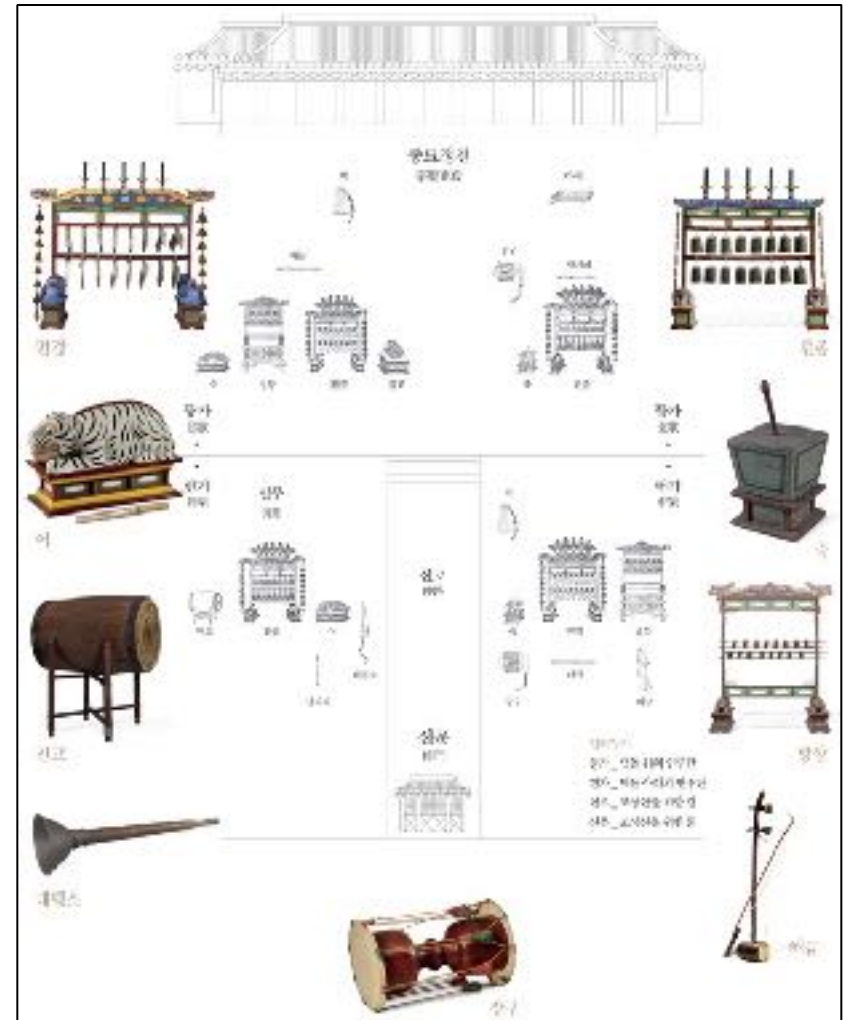
2. Past Exhibition on Jongmyo Shrine

THE ROYAL ANCESTRAL SHRINE / National Palace Museum of Korea (2014)



2. Past Exhibition on Jongmyo Shrine

THE ROYAL ANCESTRAL SHRINE / National Palace Museum of Korea (2014)



2. Past Exhibition on Jongmyo Shrine

A Homage to Korean Architecture-Wisdom of the Earth / Leeum, Samsung Museum of Art (2015)



2. Web Exhibition on Jongmyo : Google Arts & Culture



3. Why 3D ? What kind of VR Museum for ?

To enhance the presence of visitors as if they were in Jongmyo Shrine.

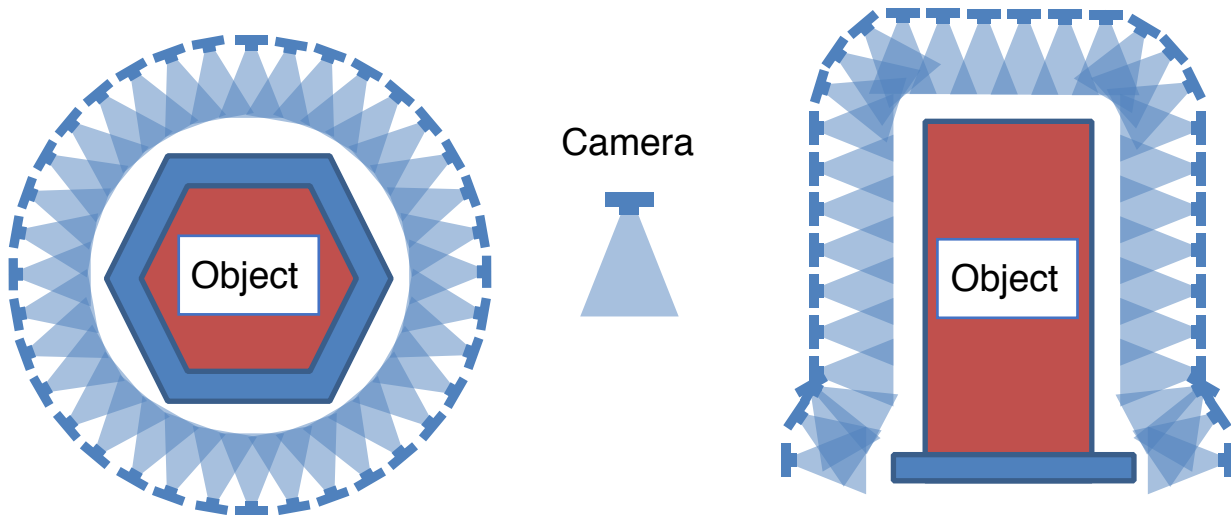
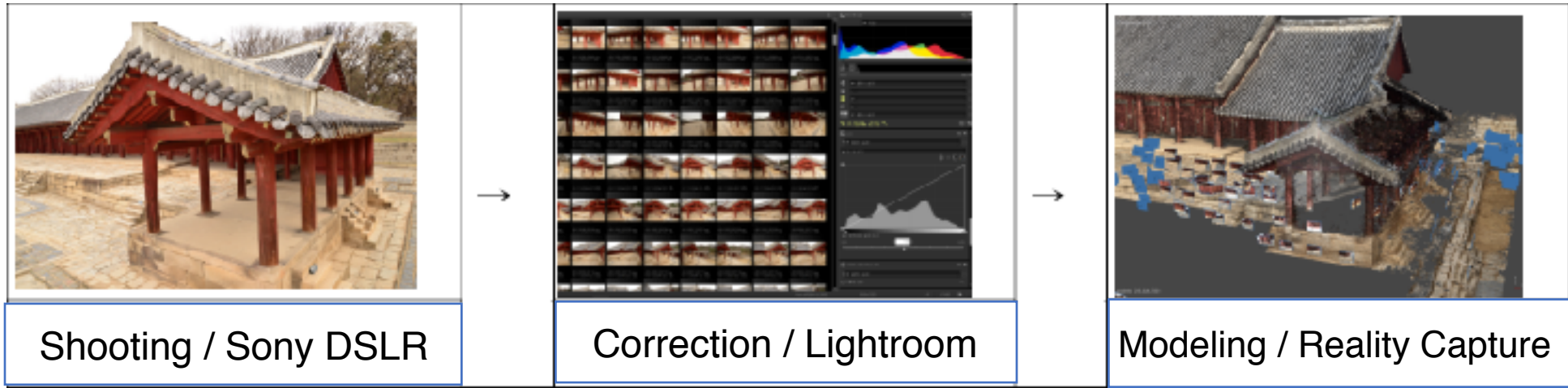
However, it's not just for a realistic tour.

Just as we relate to everyday space and create individual meanings,

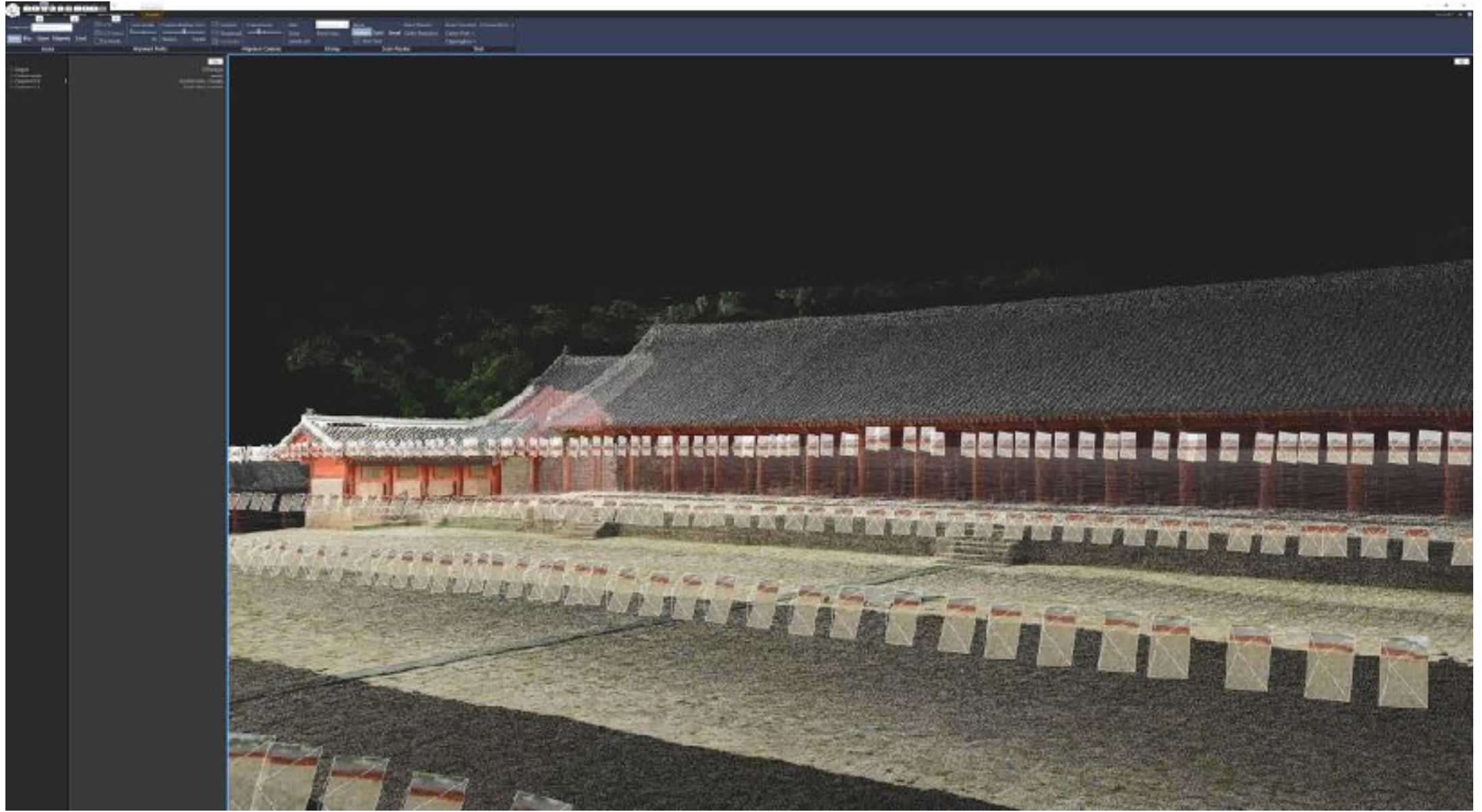
it is important that VR users can create individual "meaning" in virtual space.

In other words, it is important how participants create meaning in their interaction with architecture and images through the "ritual-architectural events."

4. 3D Modeling Process : Photogrammetry



4. 3D Modeling Process : Photogrammetry



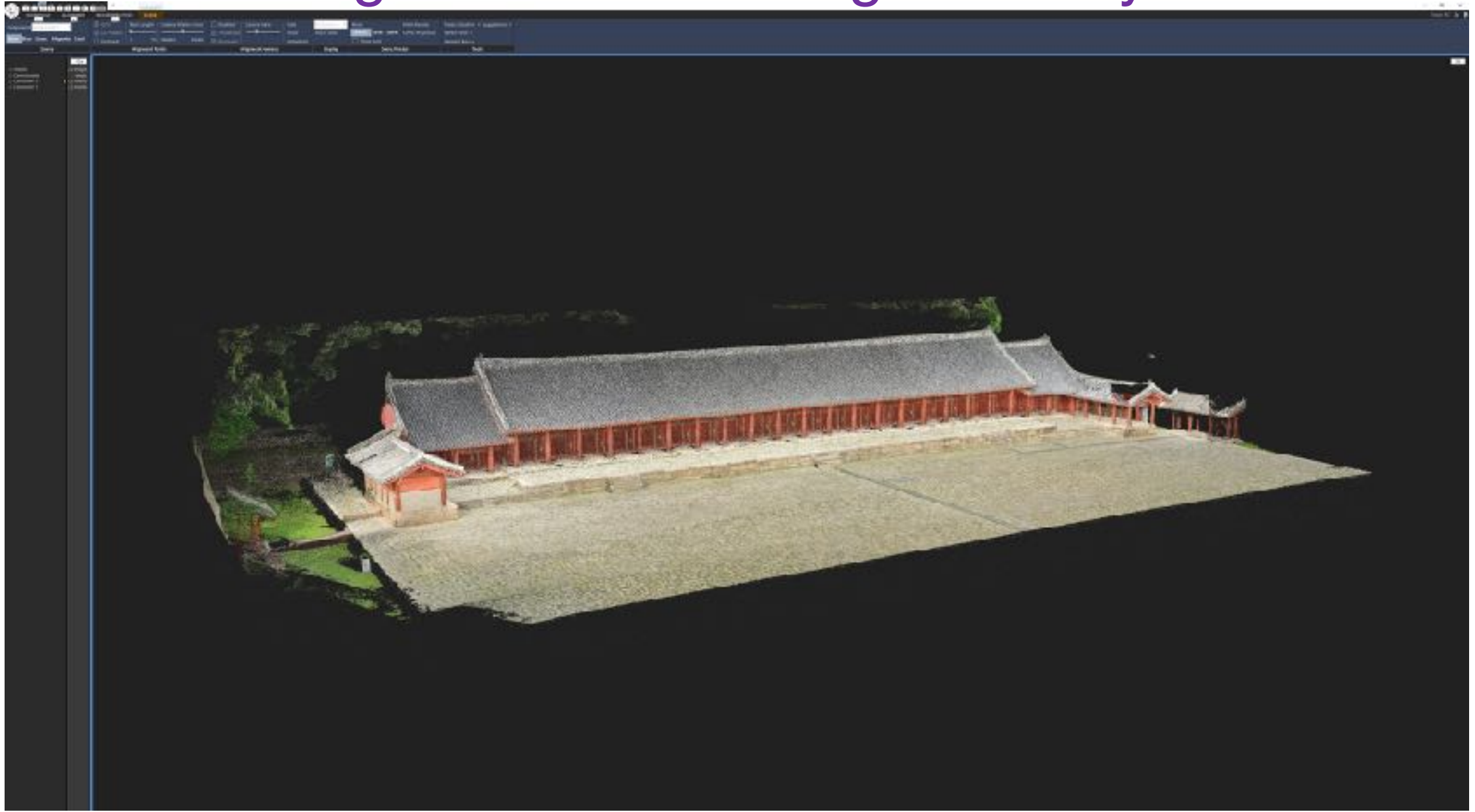
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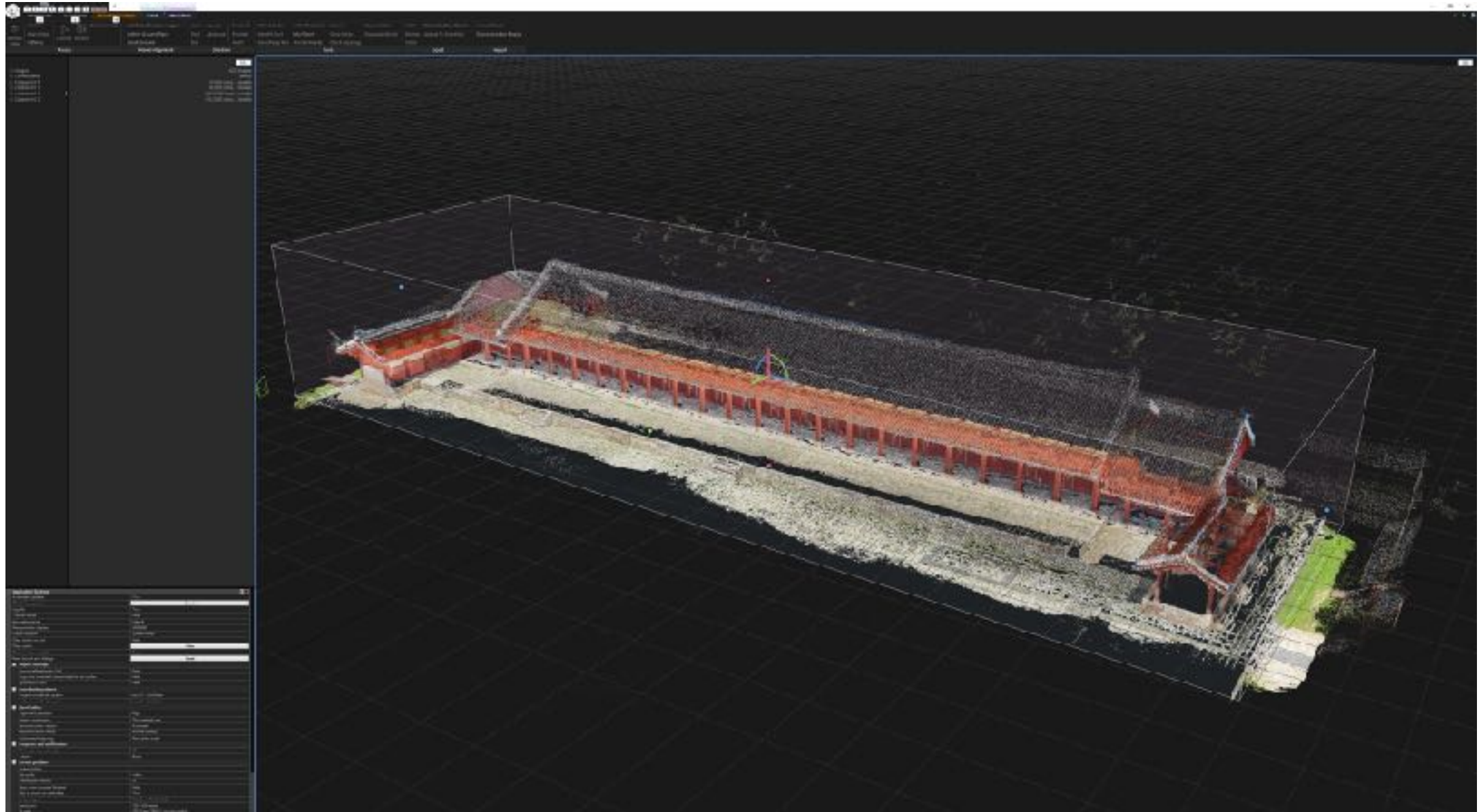
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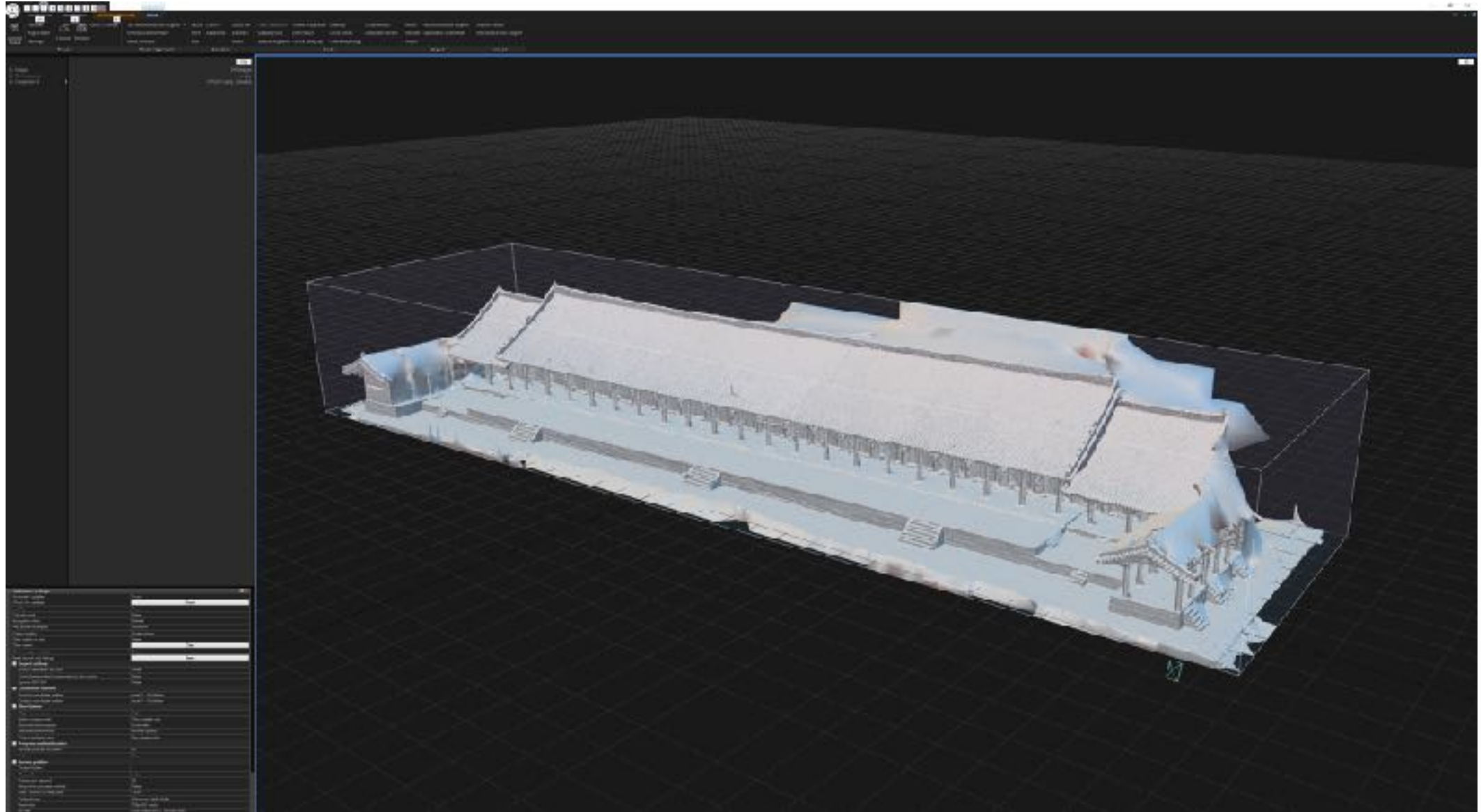
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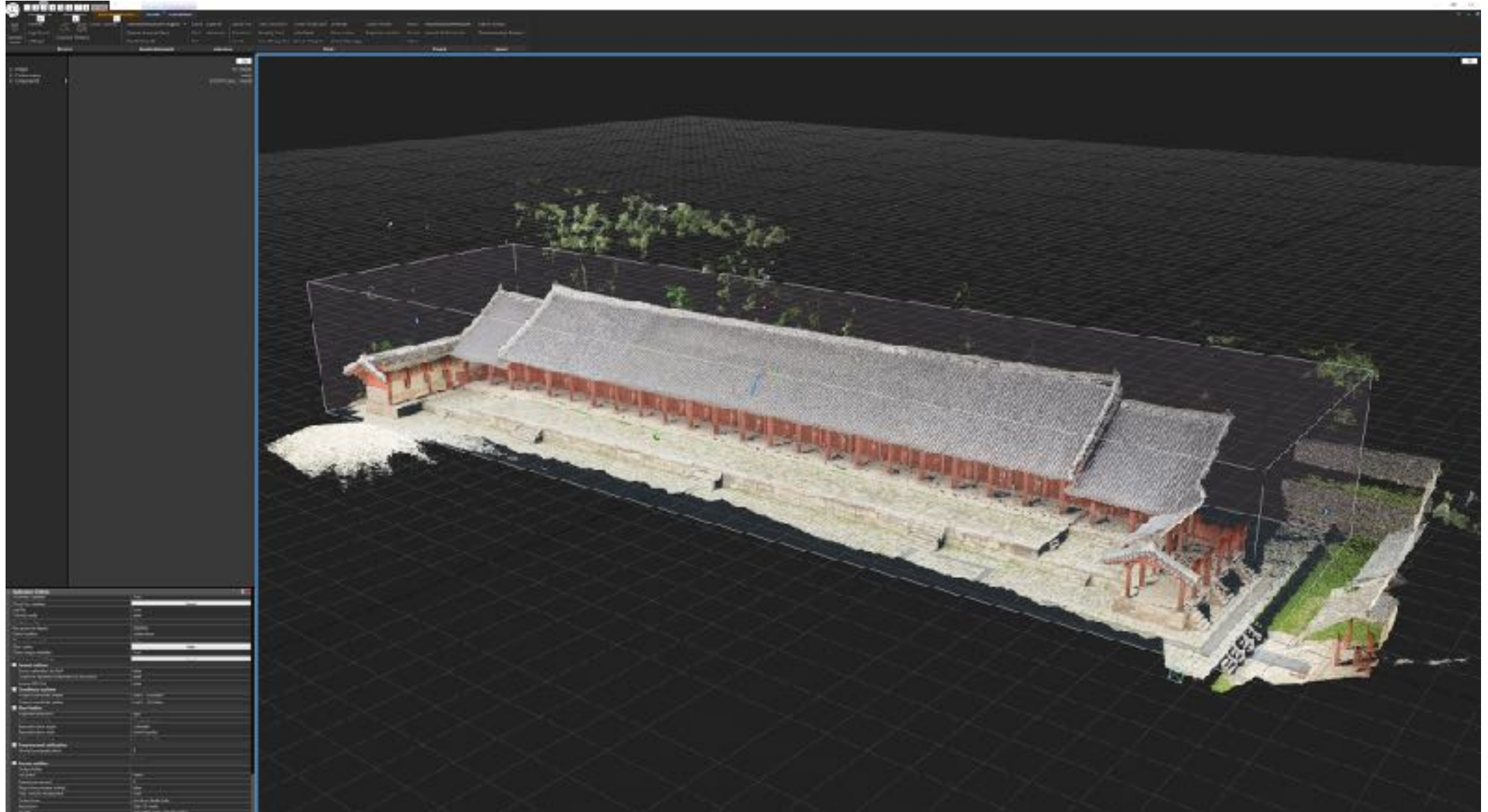
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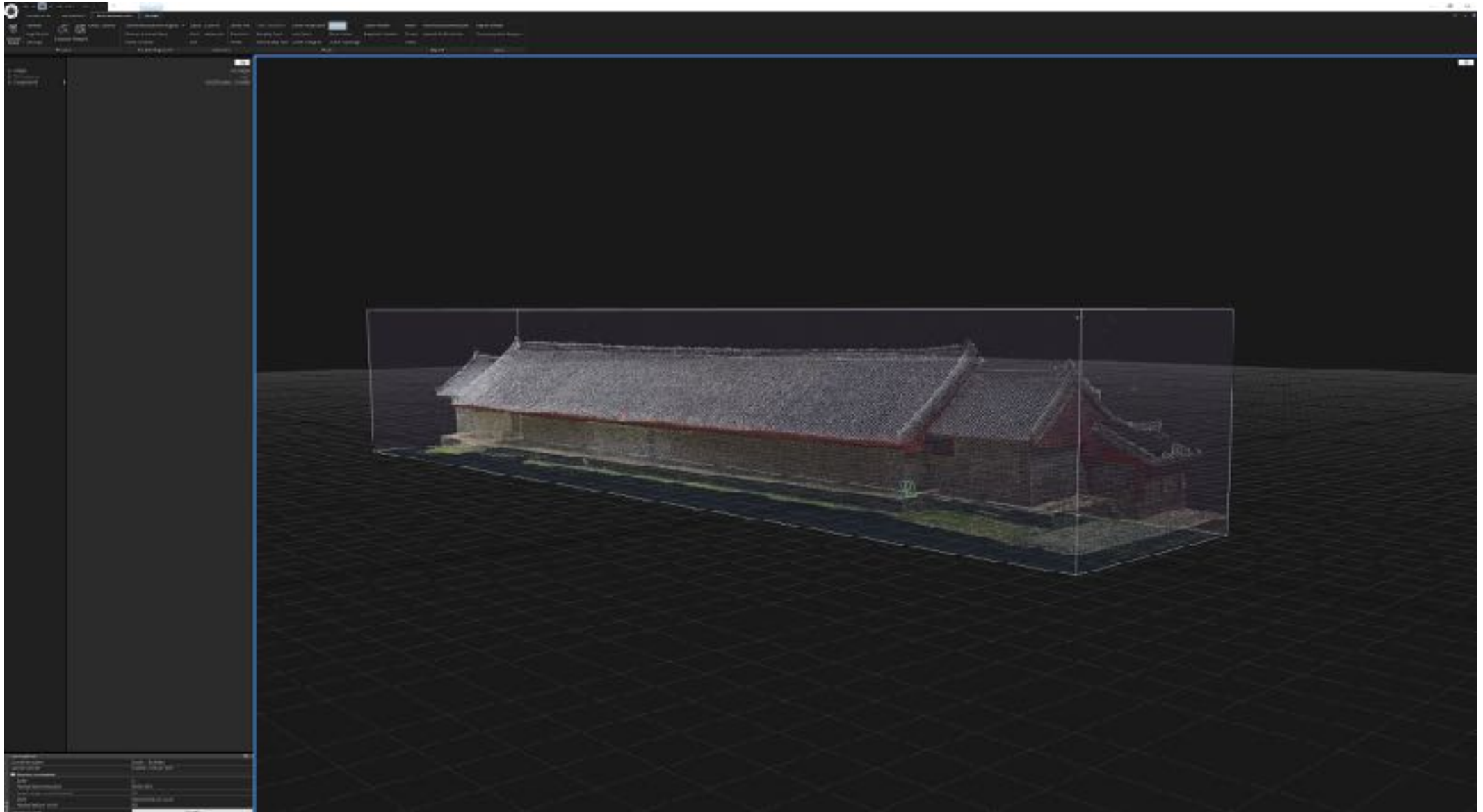
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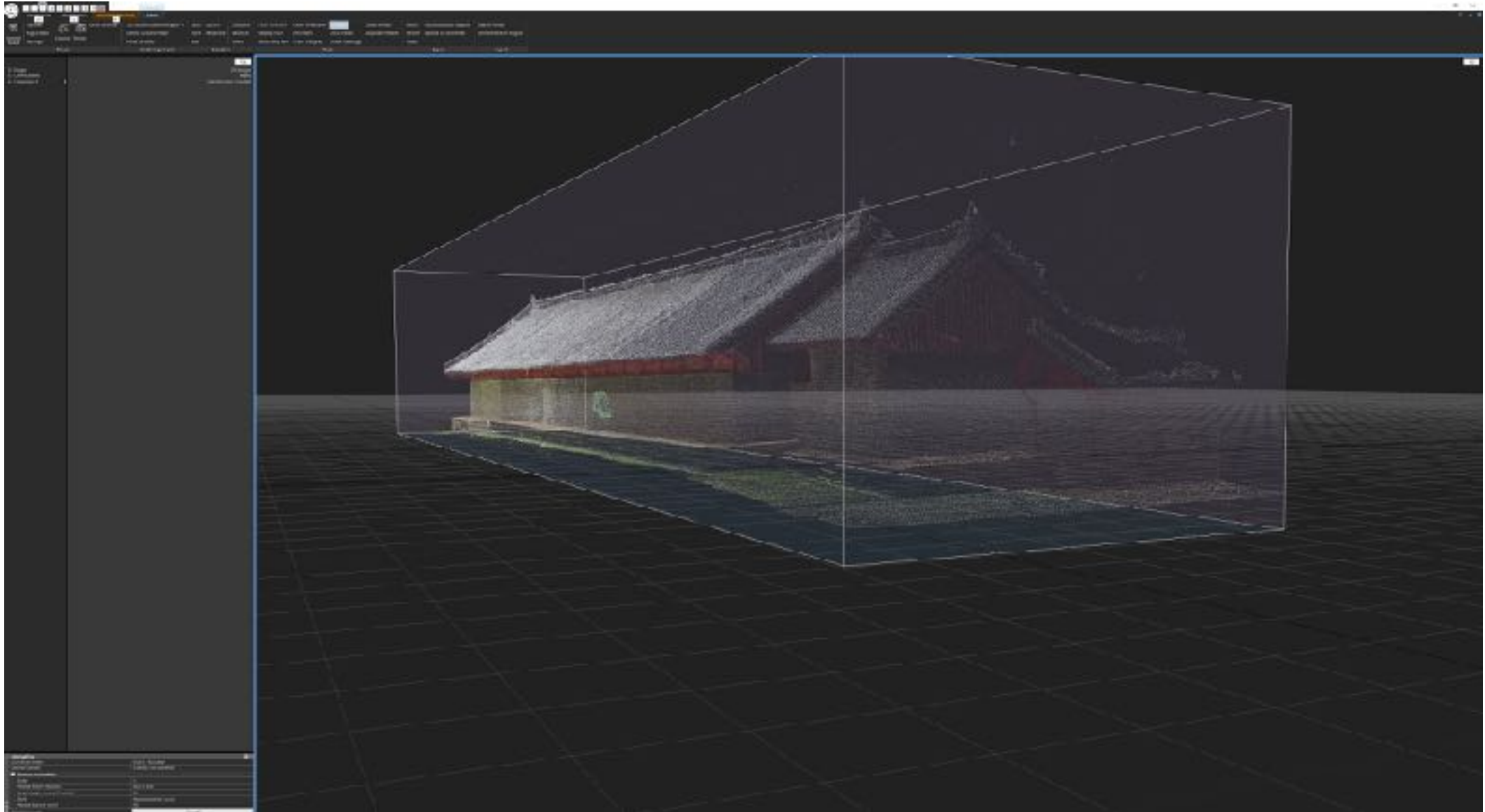
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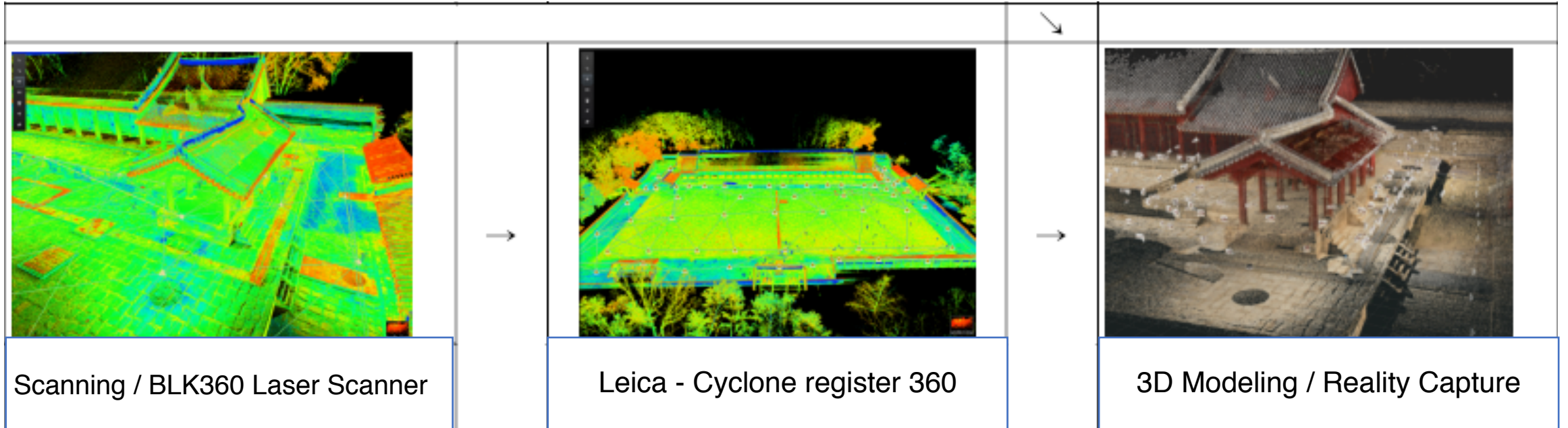


4. 3D Modeling Process : Photogrammetry : Shin-Shil



<https://skfb.ly/6Dvxr>

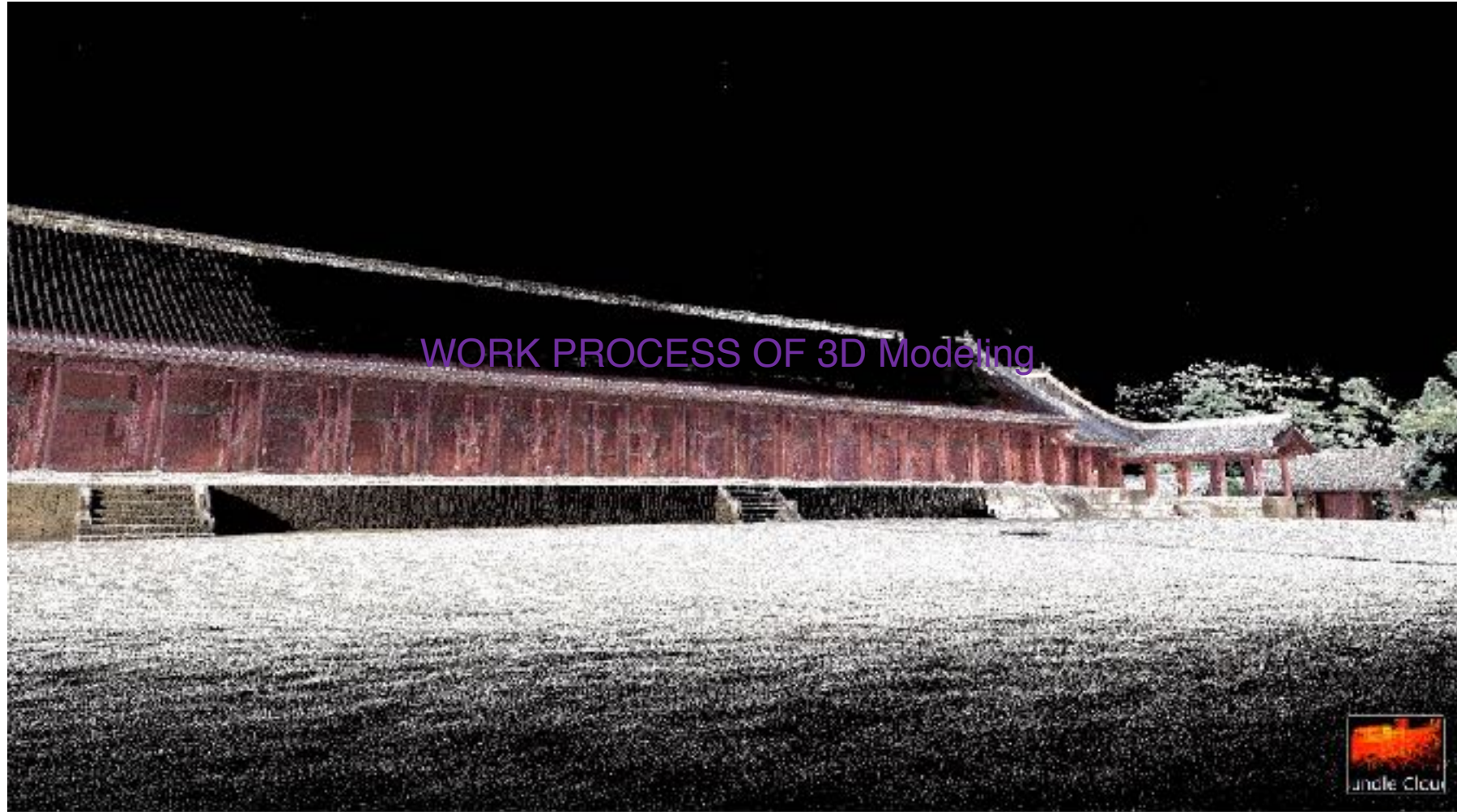
5. 3D Modeling Process : Laser Scanning



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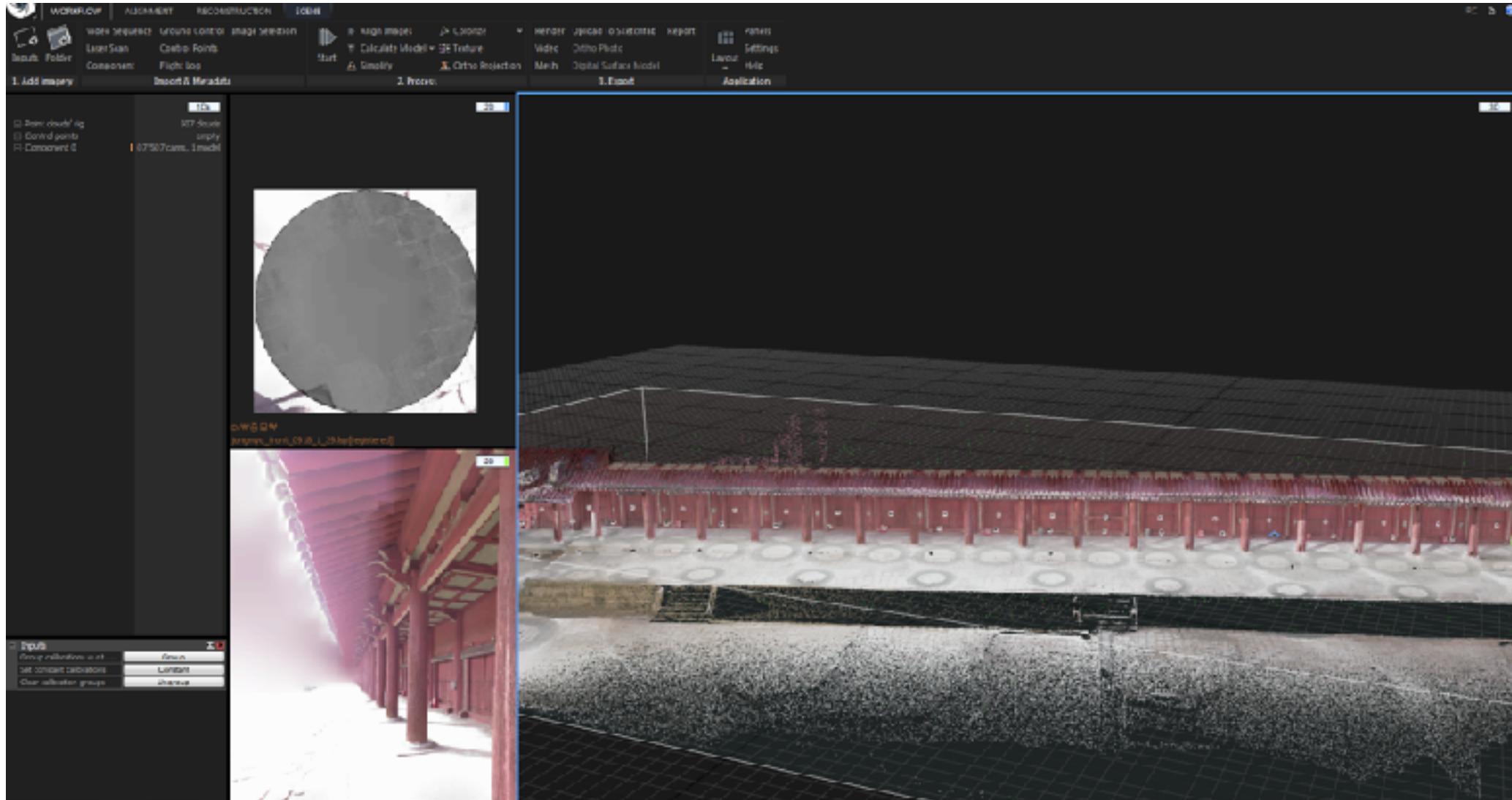
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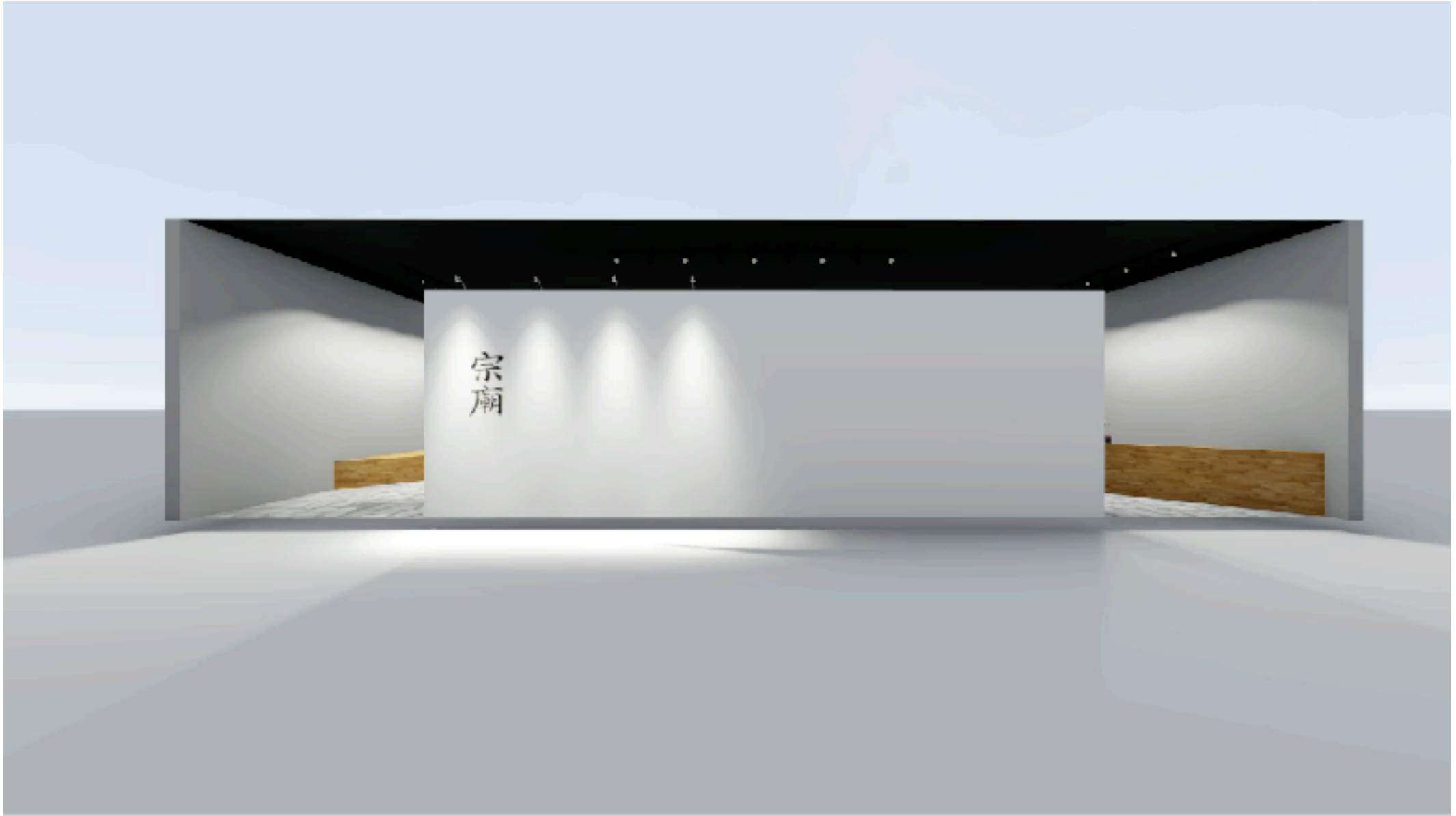
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6. Digital Jongmyo Exhibition : Simulation Video



7. VR Museum Jongmyo

Three Virtual Reality Models

- (1) **Navigation VR** : A model designed to allow users to freely navigate through VR-generated seedling spaces, taking pictures, making video clips, sketching, web browsing, and mobile transmission of data.
- (2) **Reference VR** : A model that describes major topics such as the history of Jongmyo Shrine, its functions, its chronology, its rituals, its ceremonial routes, and its comparison in the global architectural context. Must be produced on the basis of current academic hardship and discussion.
- (3) **Eventful VR** : The ultimate model of mutual interaction is to engage in the ritual of Jongmyo Shrine and build a traditional structure by participating in the process of extending Jongmyo Shrine and Woldae.

7. Interactive VR : Prototyping of INTRO



7. Interactive VR : Prototyping of Navigation VR



7. Interactive VR : Prototyping of Reference VR



7. Interactive VR : Prototyping of Eventful VR



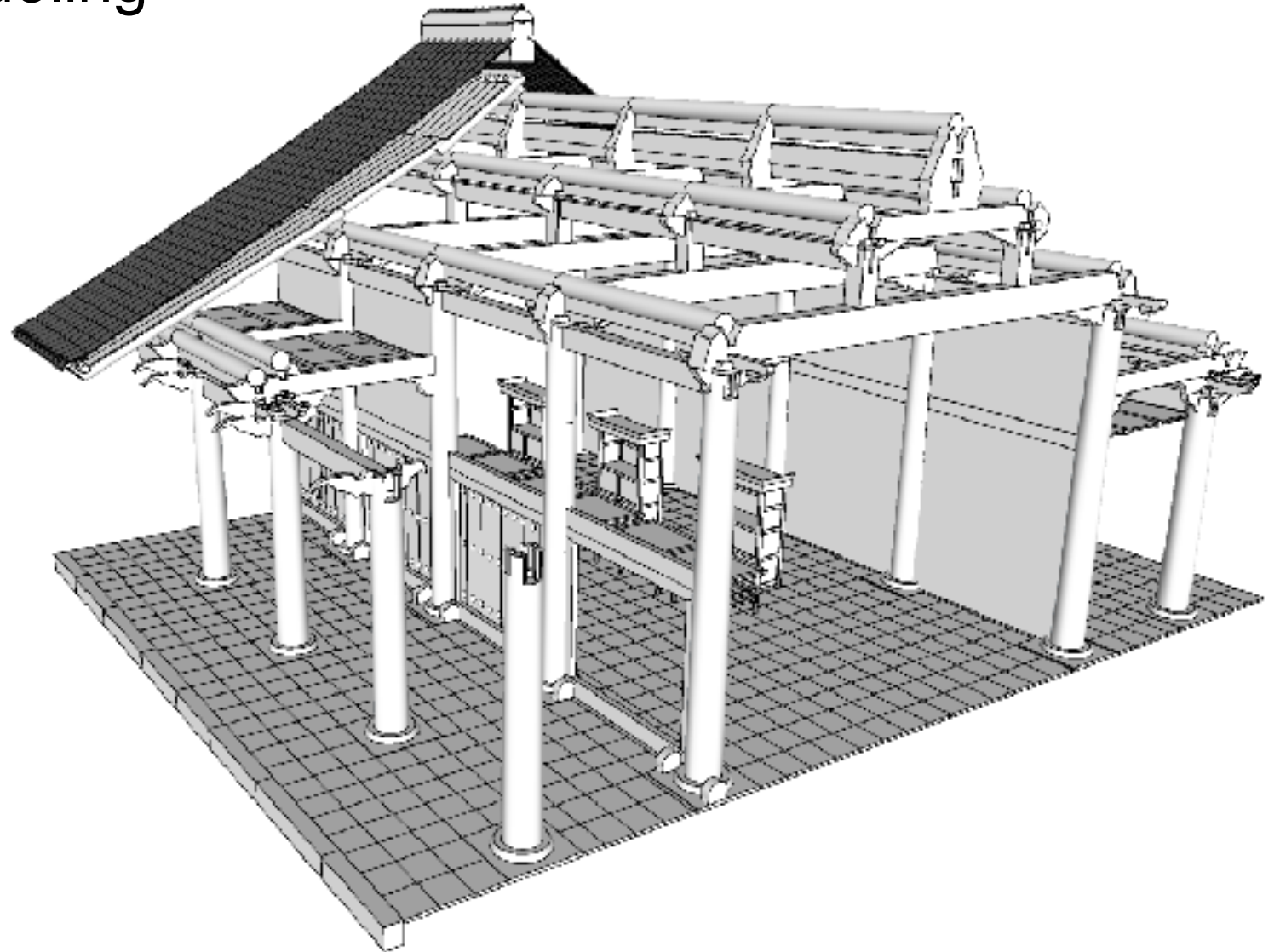
7. Interactive VR : Prototyping of Eventful VR

A Research on the Traditional Building Construction Experience



7. Interactive VR : Prototyping of Eventful VR

Jongmyo SketchUp Modeling



7. Interactive VR : Prototyping of Eventful VR

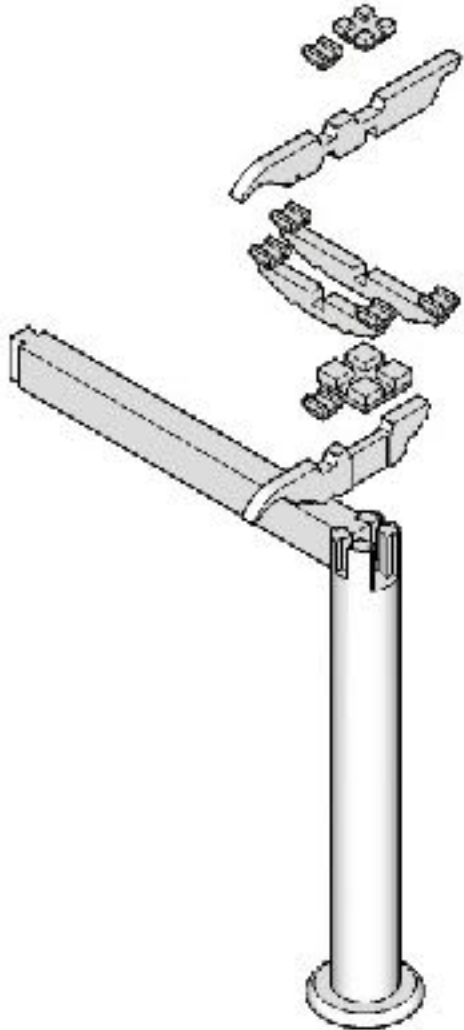
A Research on building a house in VR



<https://www.youtube.com/watch?v=JrzWBsb0BcQ>

7. Interactive VR : Prototyping of Eventful VR

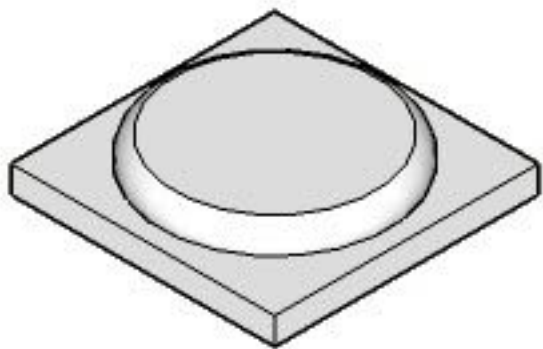
Order of Combination of Wood Structure in Jongmyo Jeongjun



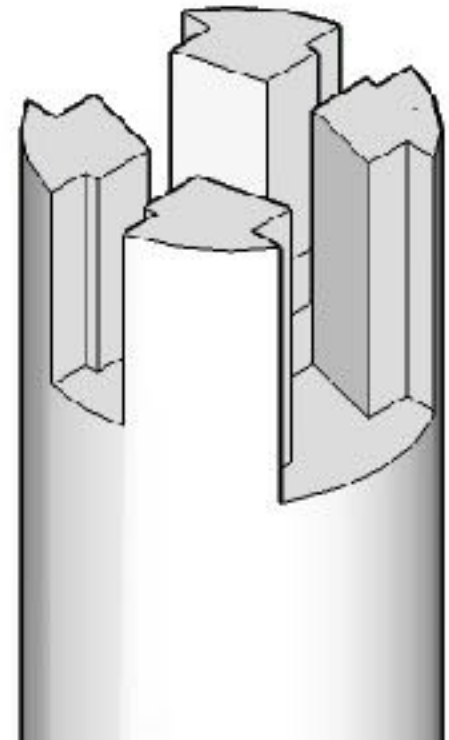
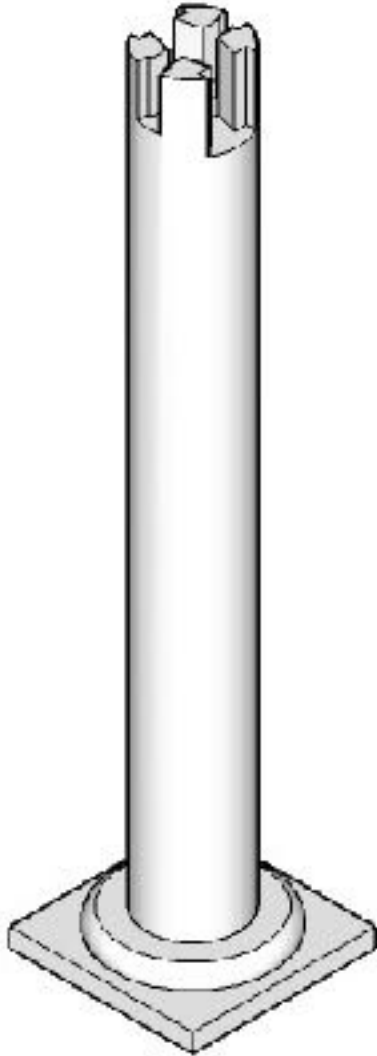
Step-by-Step classification

	Material's Name
1 step	Cho-suk (礎石)
2 step	GiDoong
3 step	Chang-Bang (昌枋)
4 step	Cho-ik-kong (初翼工)
5 step	Joo-Doo (柱頭)
6 step	Chem-cha (檐遮)
7 step	Yi-ik-kong (二翼工)
8 step	Jae-Joo-Doo (再柱頭)

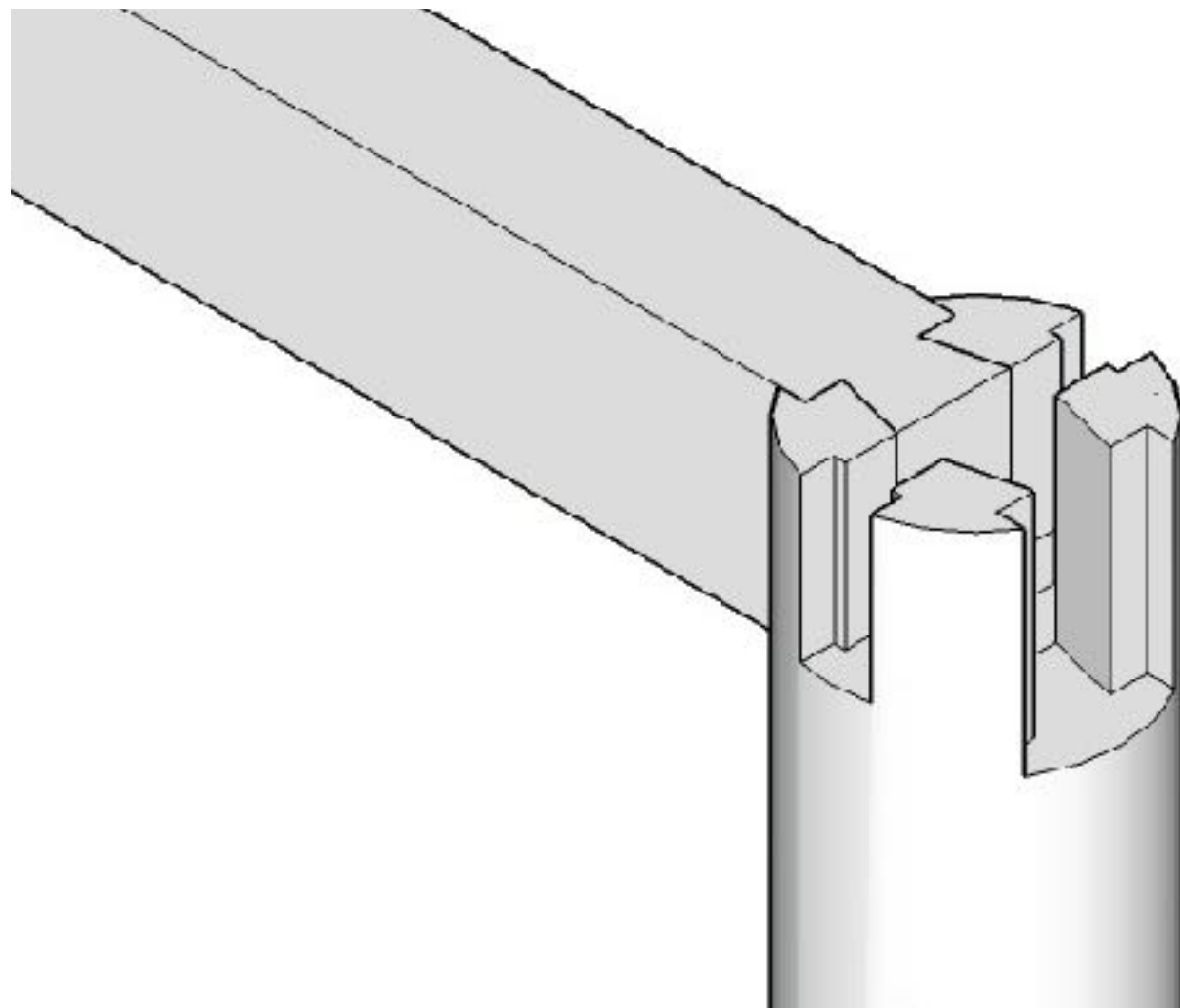
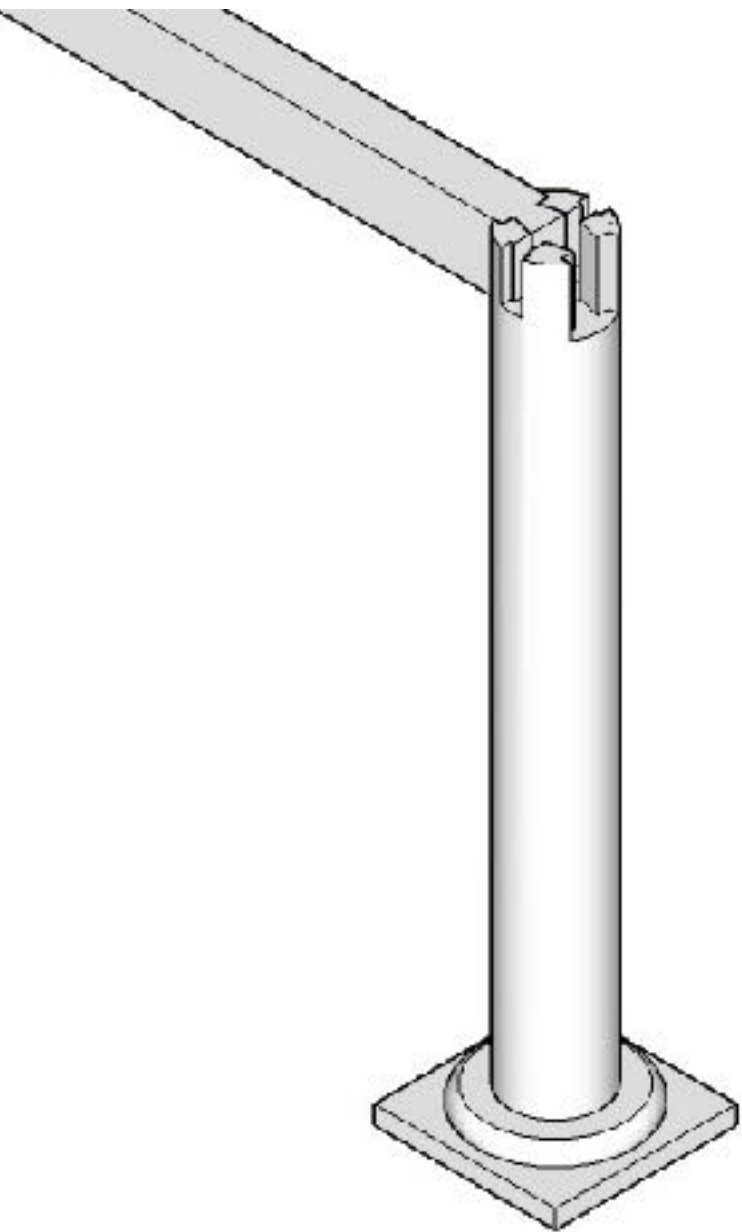
1 step : Cho-suk (a conerstone, 礎石)



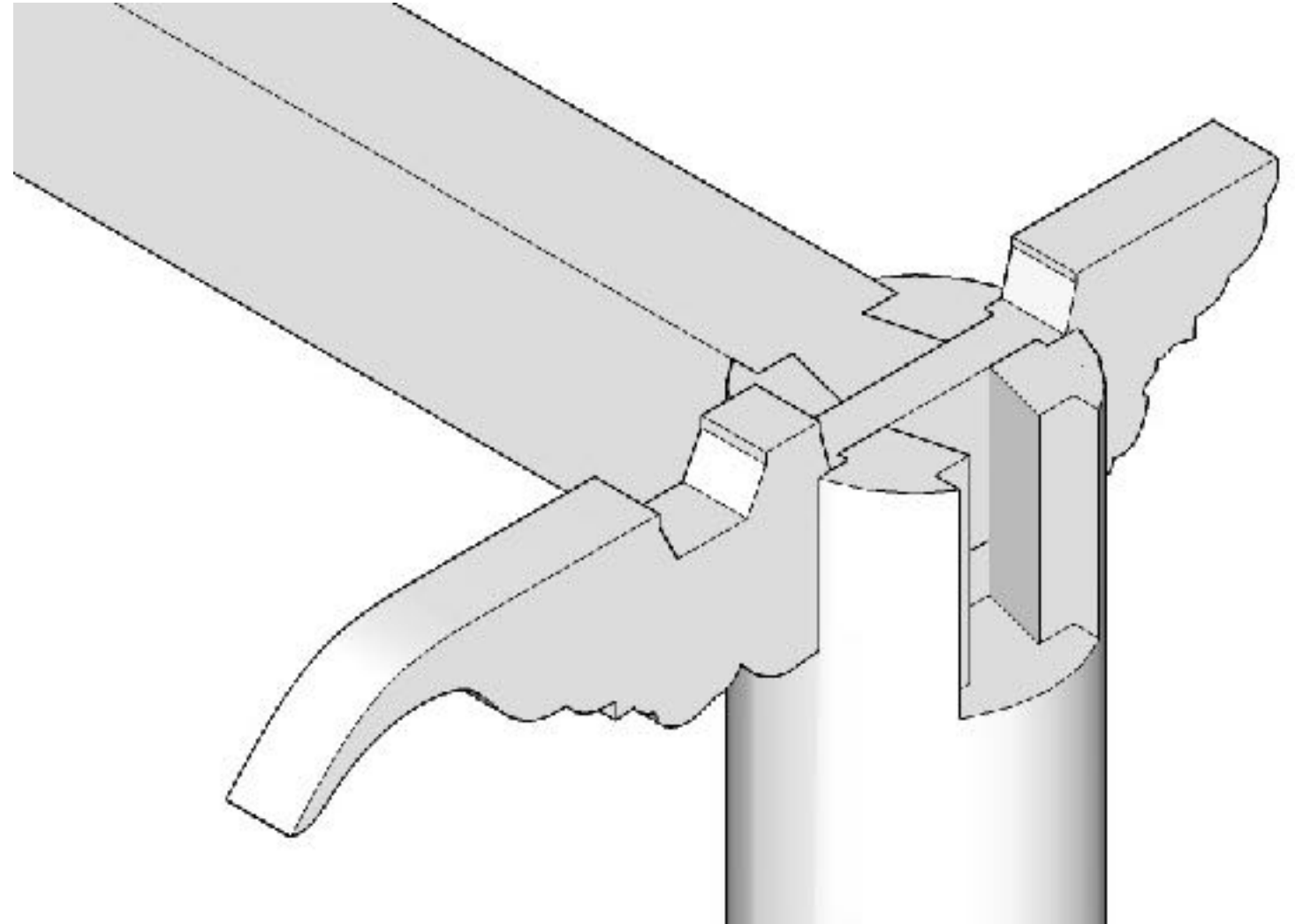
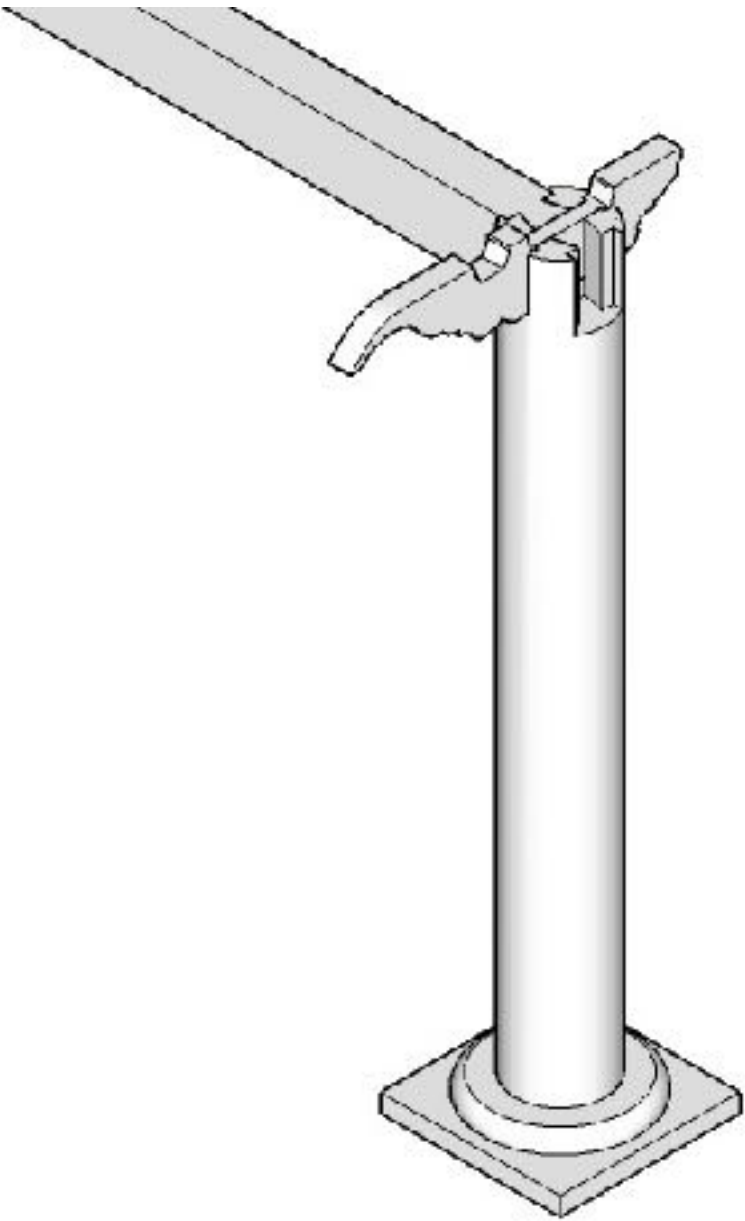
2 step : GiDoong



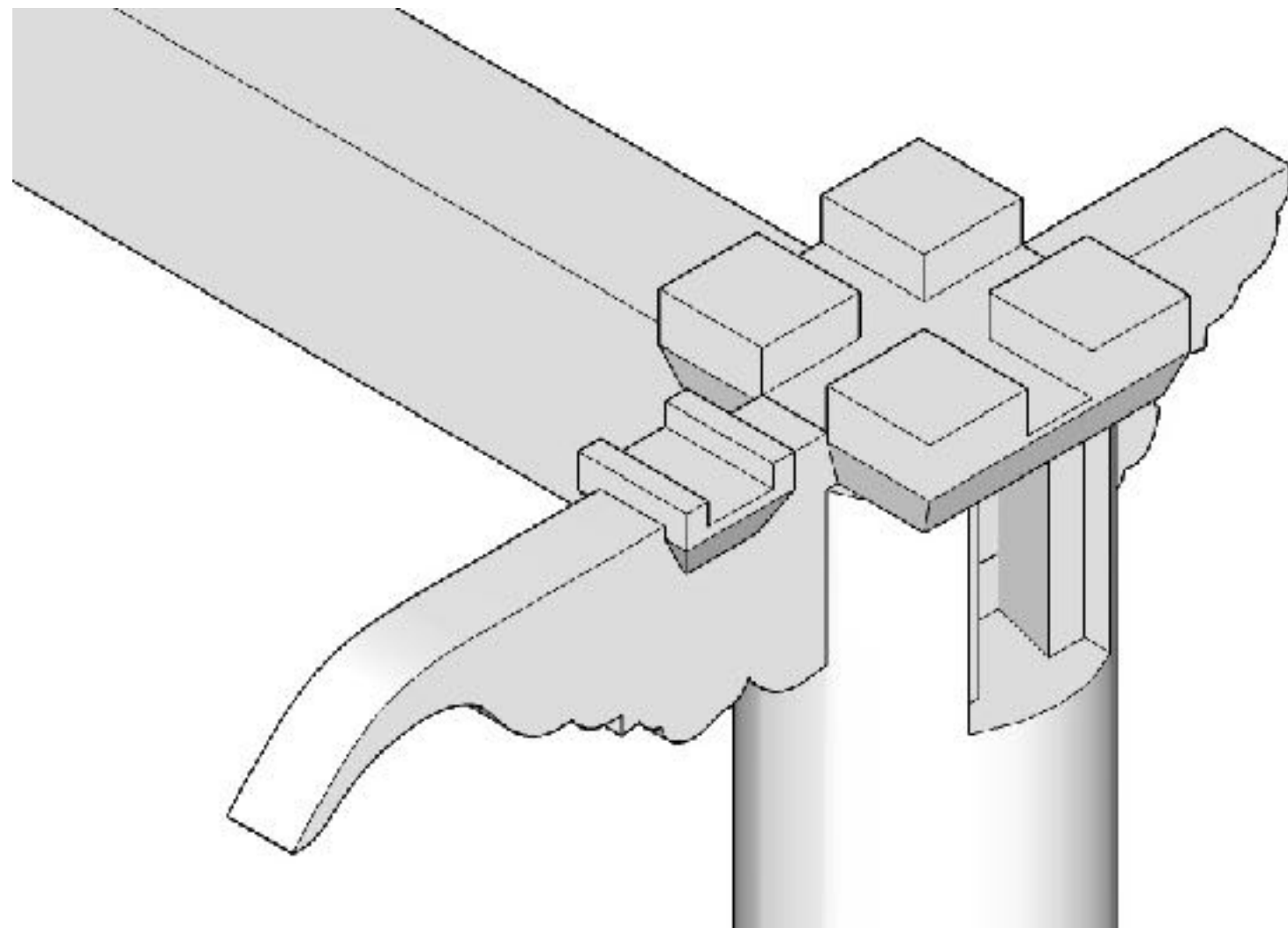
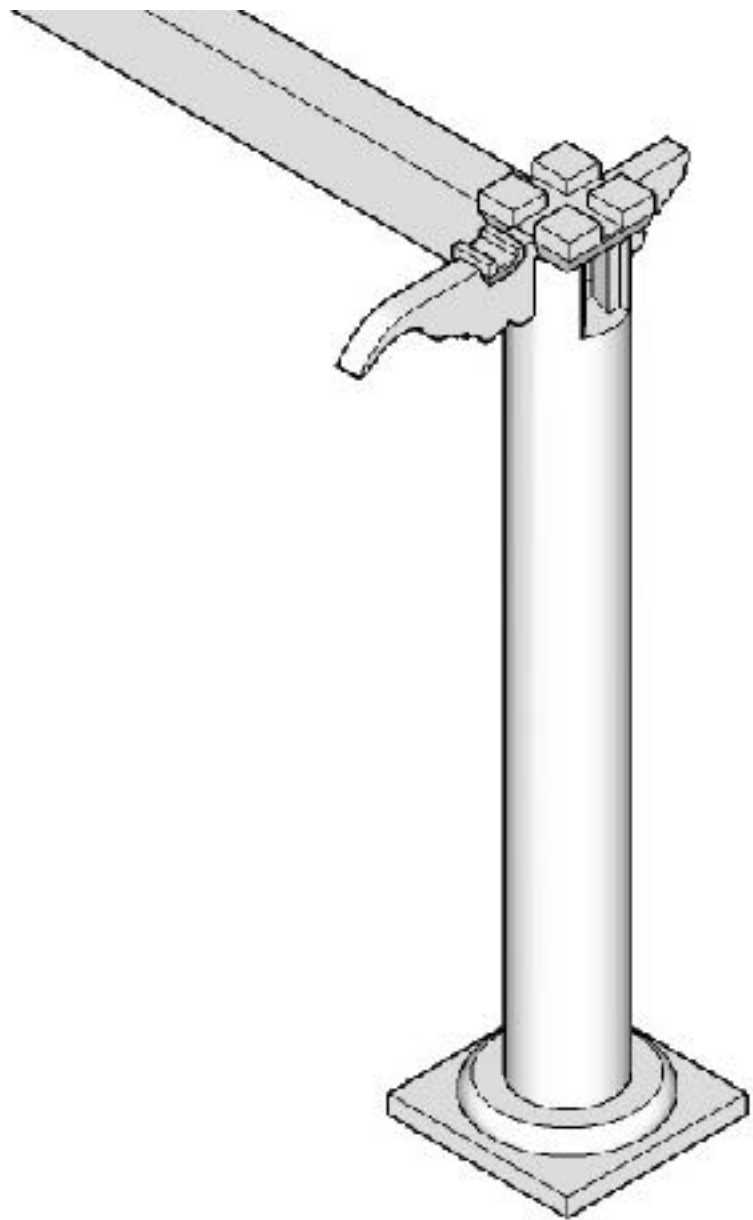
3 step : Chang-Bang (昌枋)



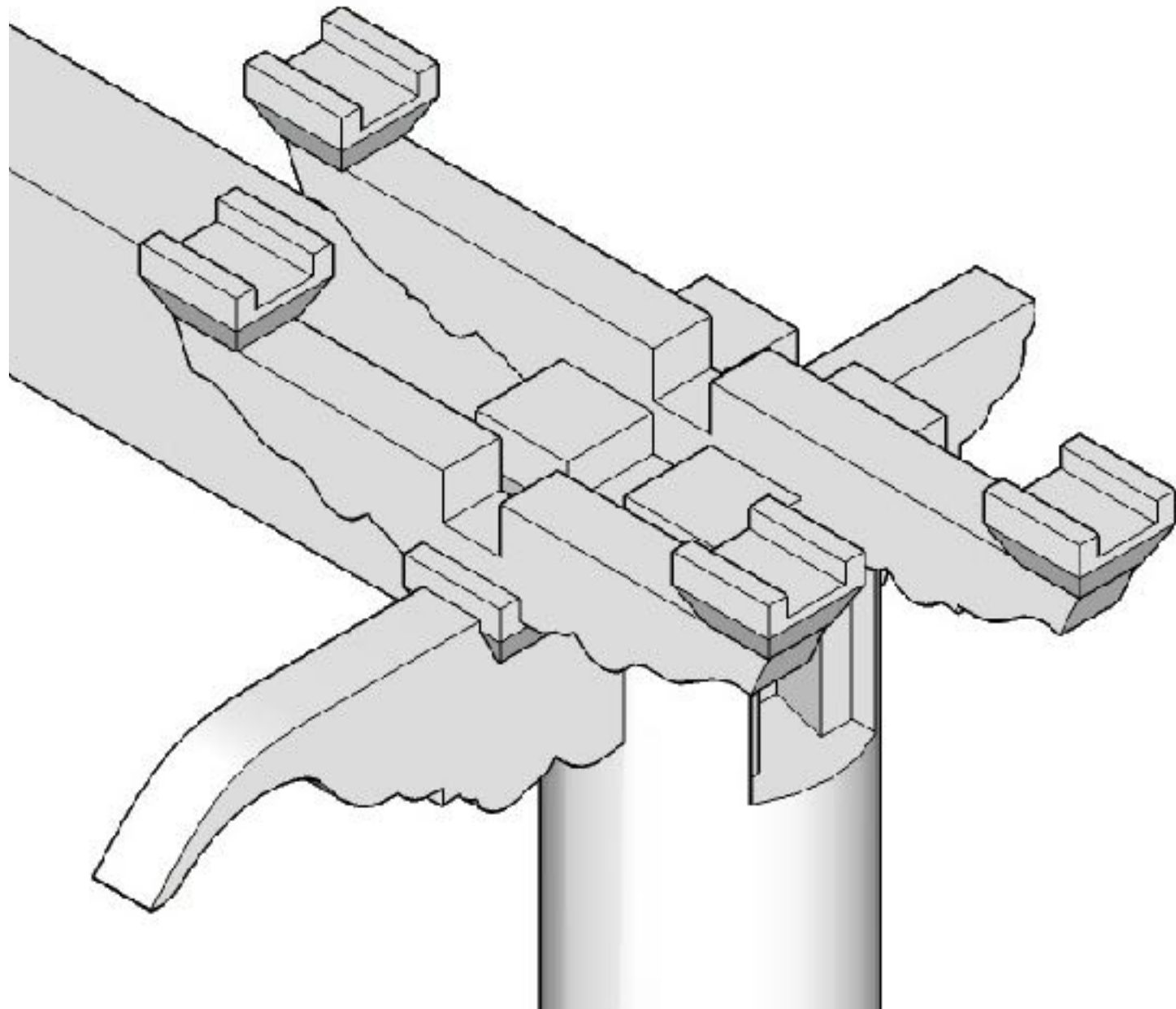
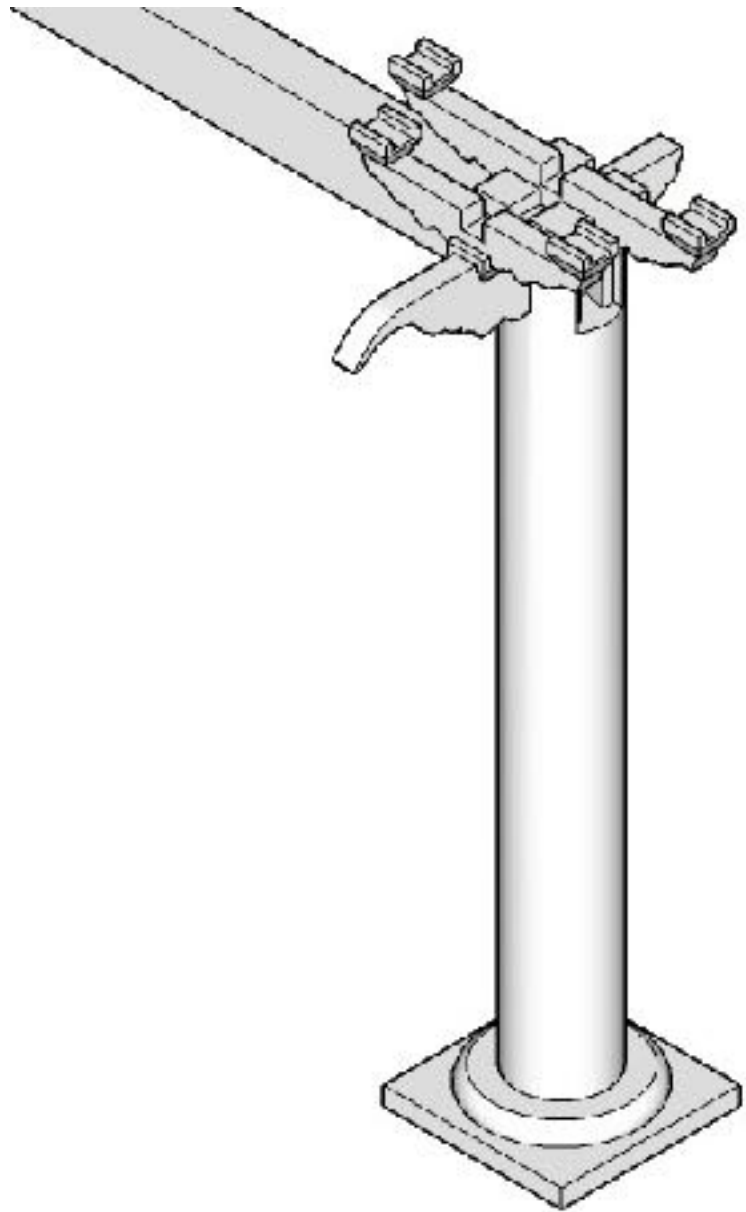
4 step : Cho-ik-kong (初翼工)



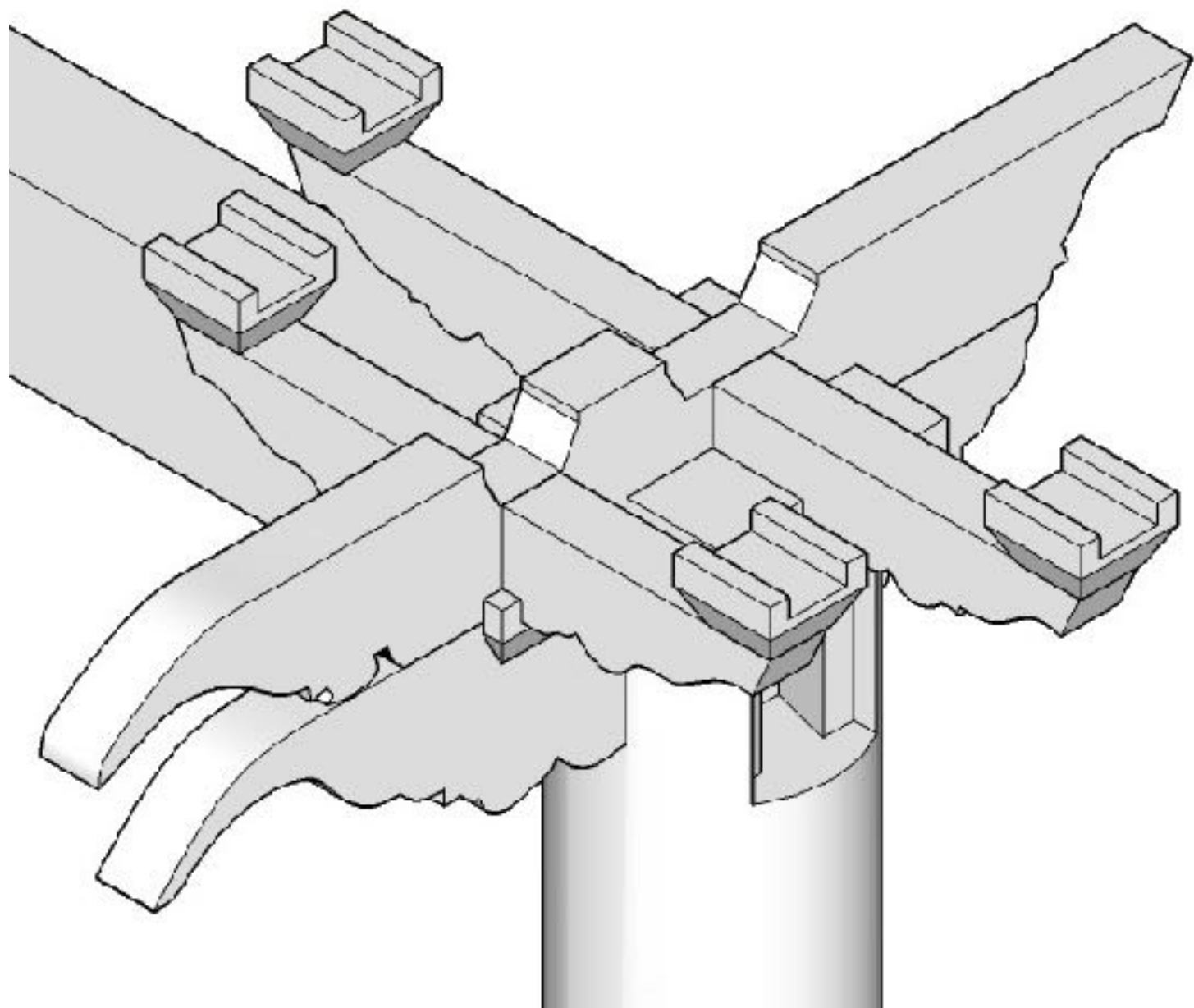
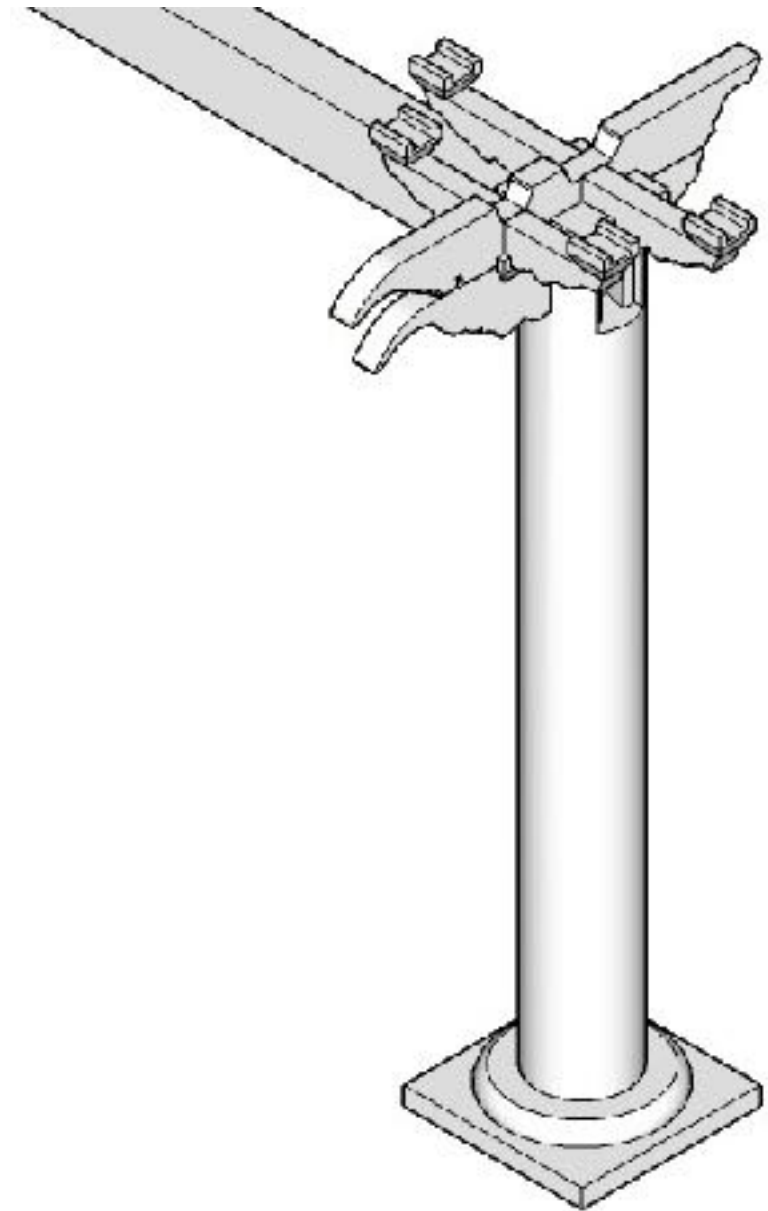
5 step : Joo-Doo (柱頭)



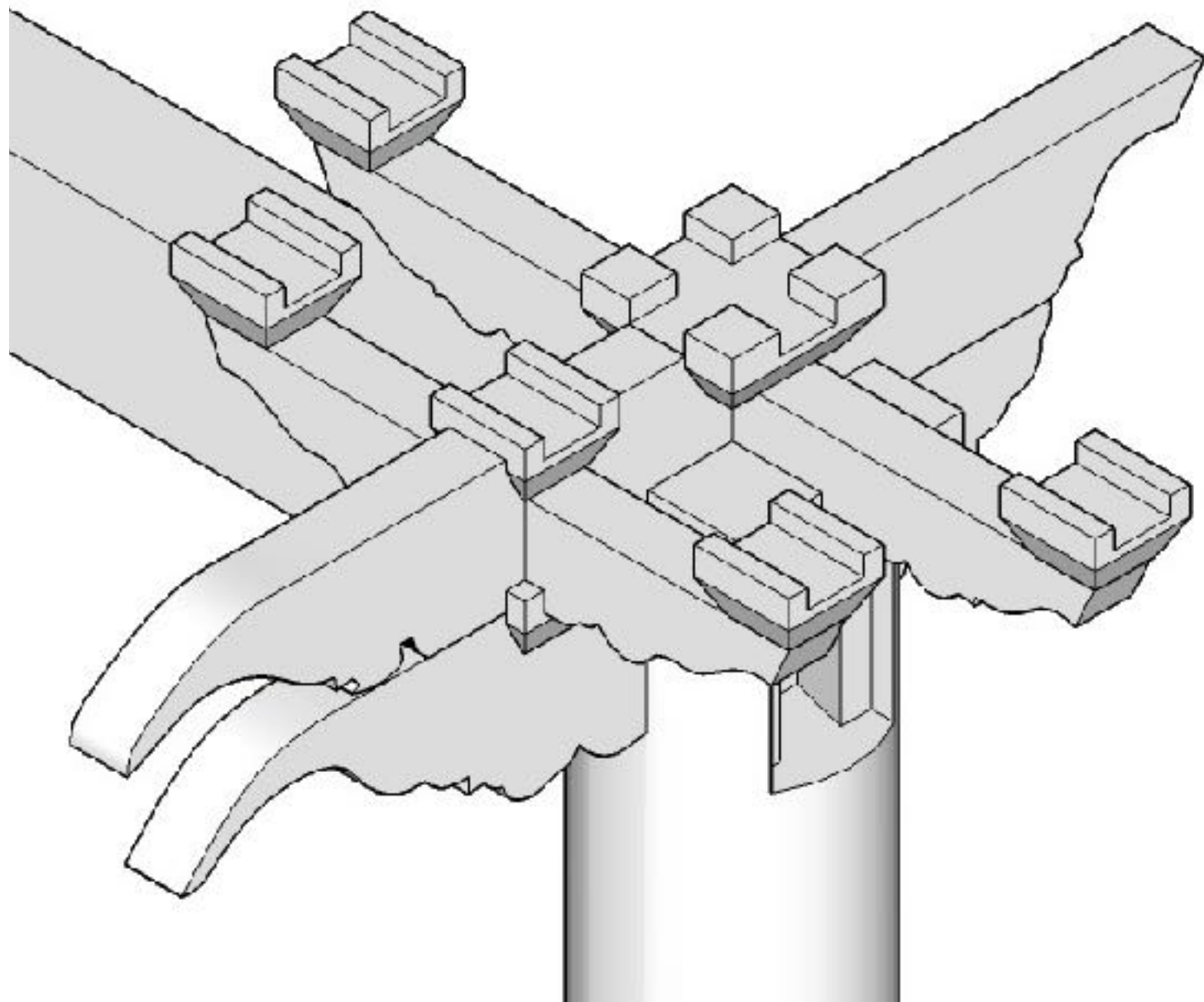
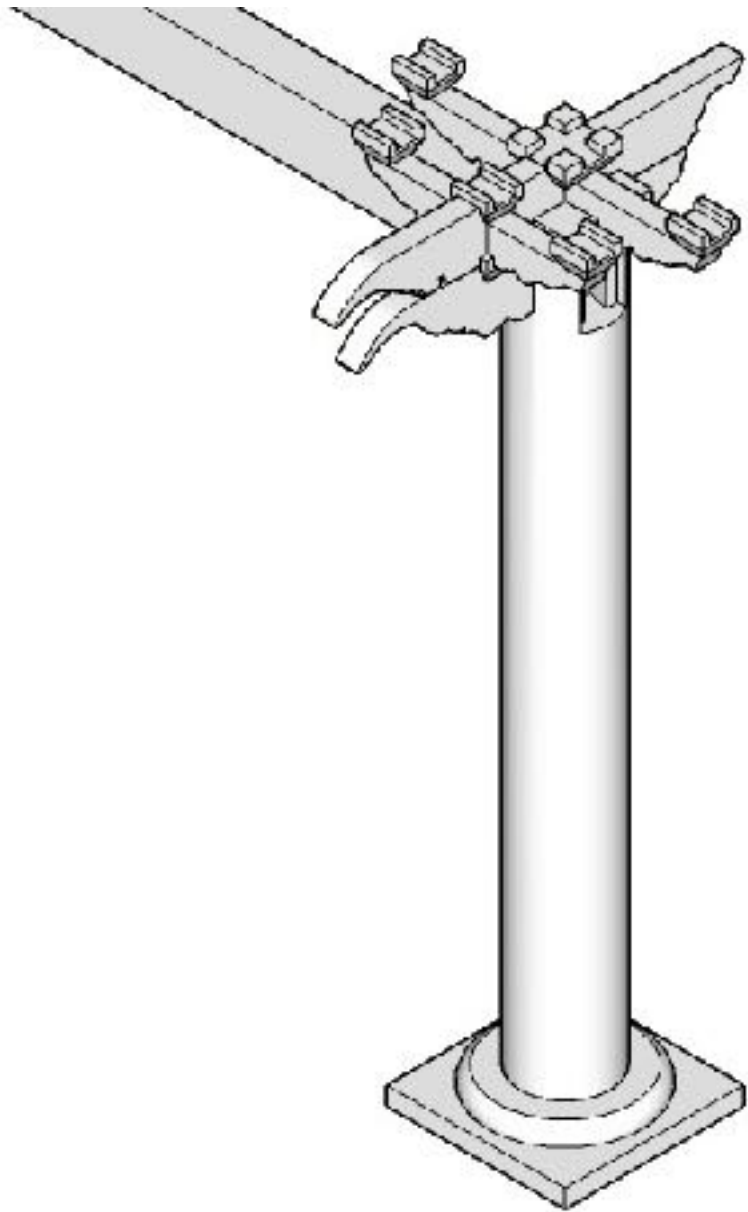
6 step : Chem-cha (檐遮)



7 step : Yi-ik-kong (二翼工)



8 step : Jae-Joo-Doo (再柱頭) Soro (小累)



7. Interactive VR : Prototyping of Eventful VR



8. Future Work : Goguryeo Mural Paintings VR

