

Between the Mark and the Cut

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Master of Architecture in
Architecture

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Abstract

The project begins with the elaboration of a single wooden joinery detail for a temple pavilion. A singular joint study became the basis for an interrelated series of elaborated joints forming a structural whole. A detailed model of a single structural bay was produced. The purpose of this model was to investigate the subtleties of its overall formal expression. Attention was given to both the hidden internal complexity of individual parts and the interconnections between parts. Knowledge of stereotomy was an important consideration ensuring precision in the marking and cutting of the poplar wood. Photographs, sketches and drawings accompany the making of the model as way to further its realization.

Acknowledgements

I would like to thank to my committee;

Professor Frank Weiner, for your careful guidance and patience working with me all these years and for giving me an invaluable experience in the residency program in Riva san Vitale, Switzerland, led by you in Fall 2013,

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This thesis was greatly inspired by your Building Construction class lectures Japanese wood joinery.

I would like to also thank Mark Schneider for sharing his vast knowledge of stereotomy in his Descriptive Geometry class,

Hans Rott, for his wisdom and advice that refined the craft and photography of the project,

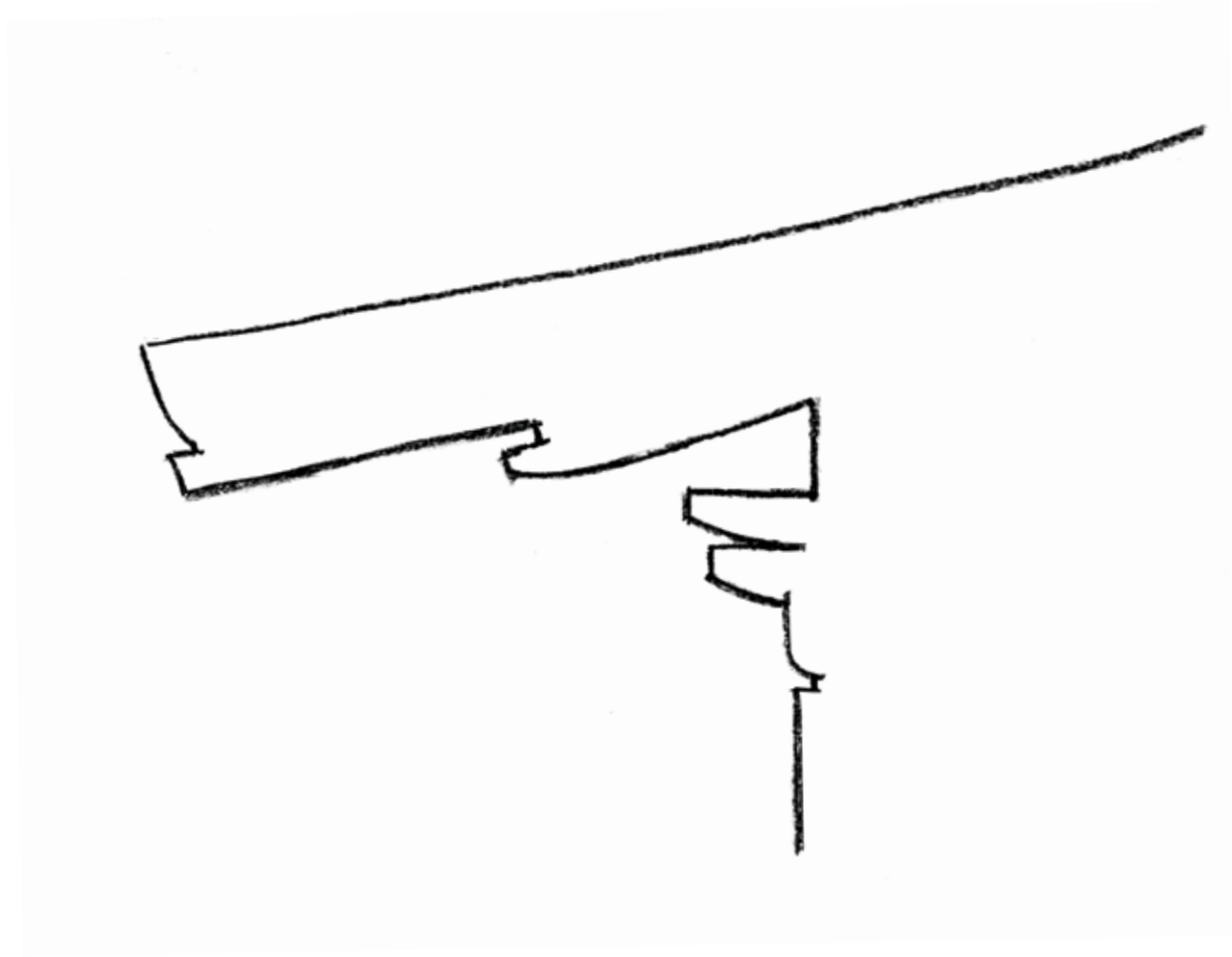
Mark Leach and Jonathan Rugh for advice and instruction working in the school's woodshop.

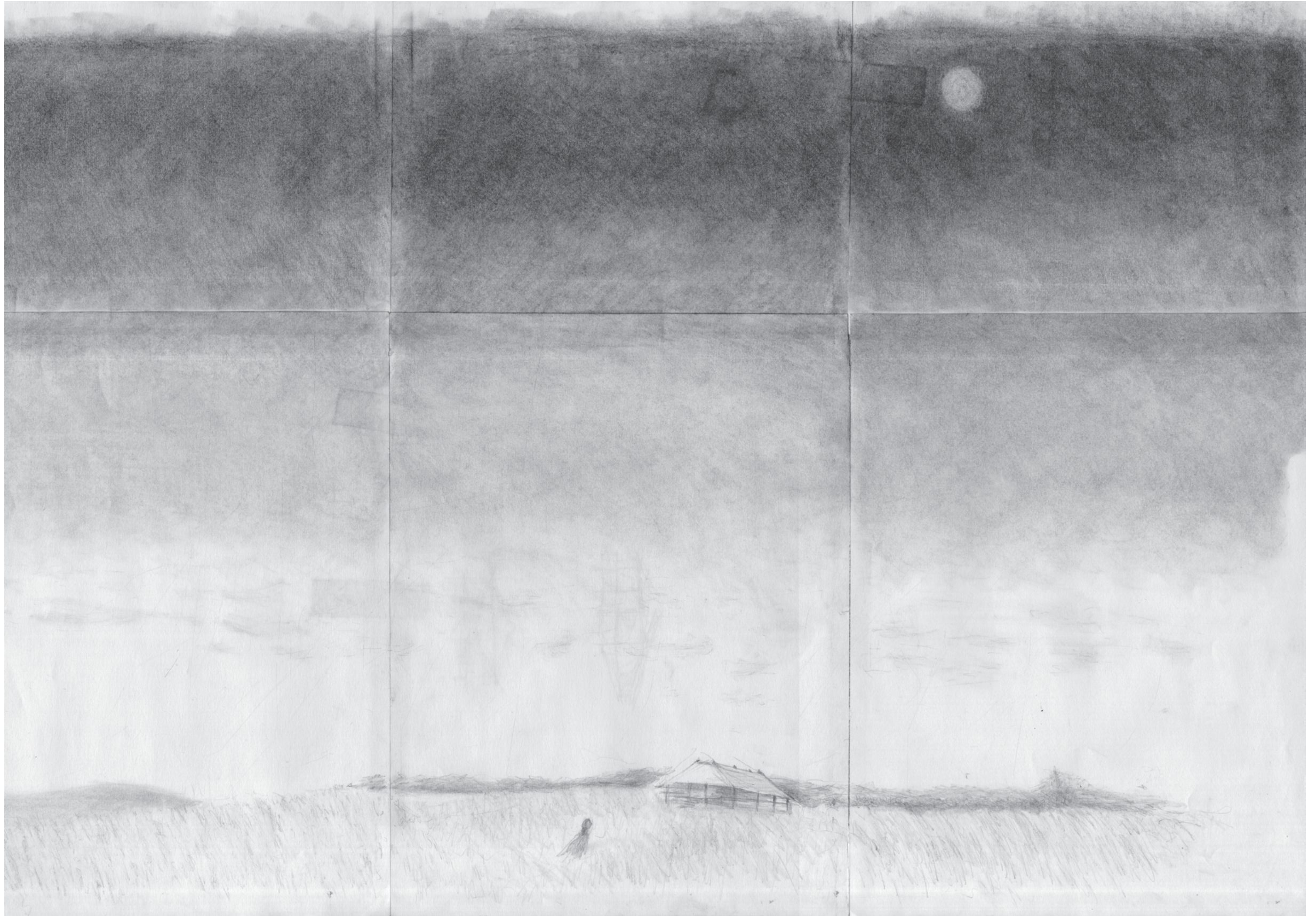
Finally I would like to thank to my parents for their understanding and support in every possible way, all of my success would not happen without your lifetime dedication to me and our family.

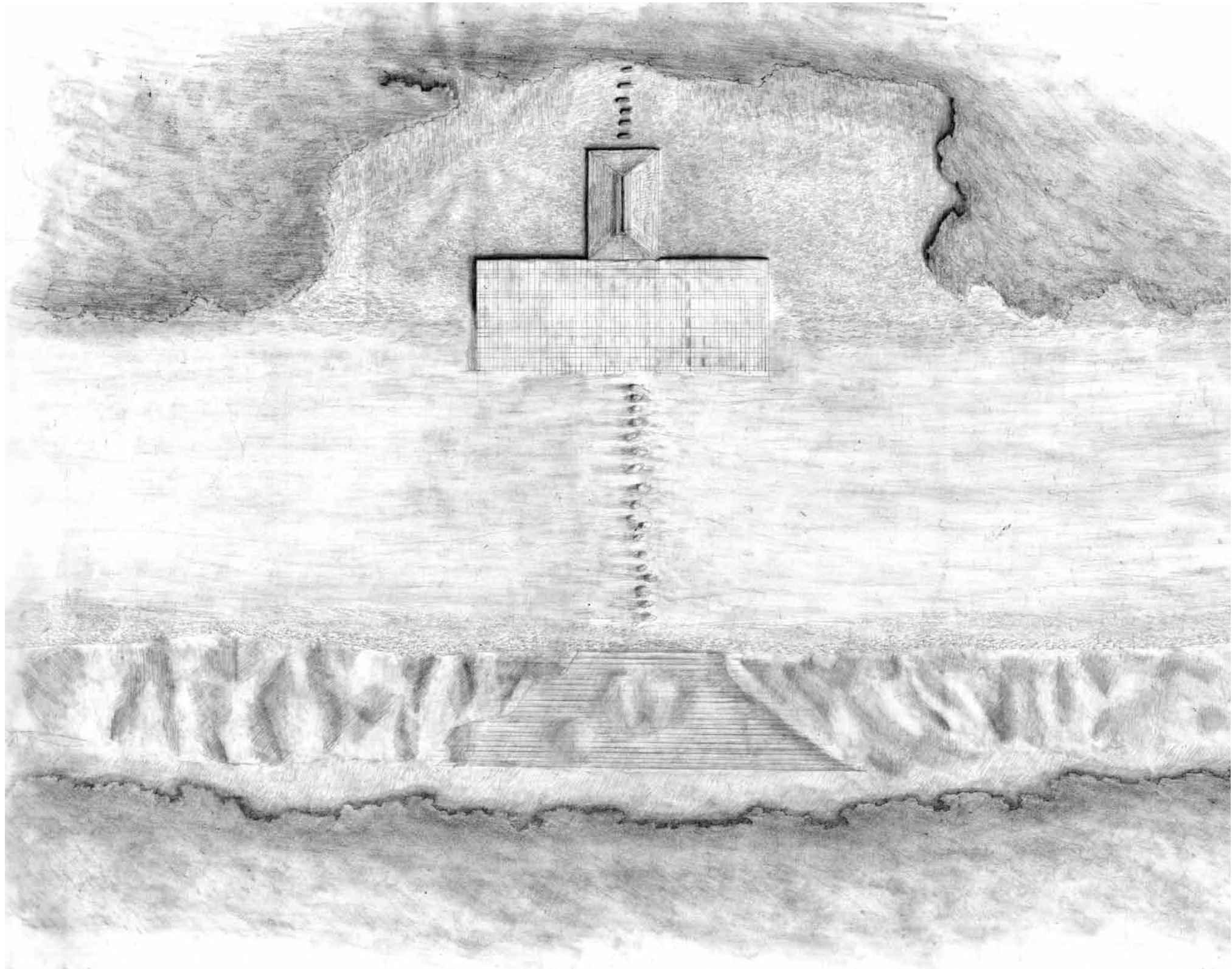
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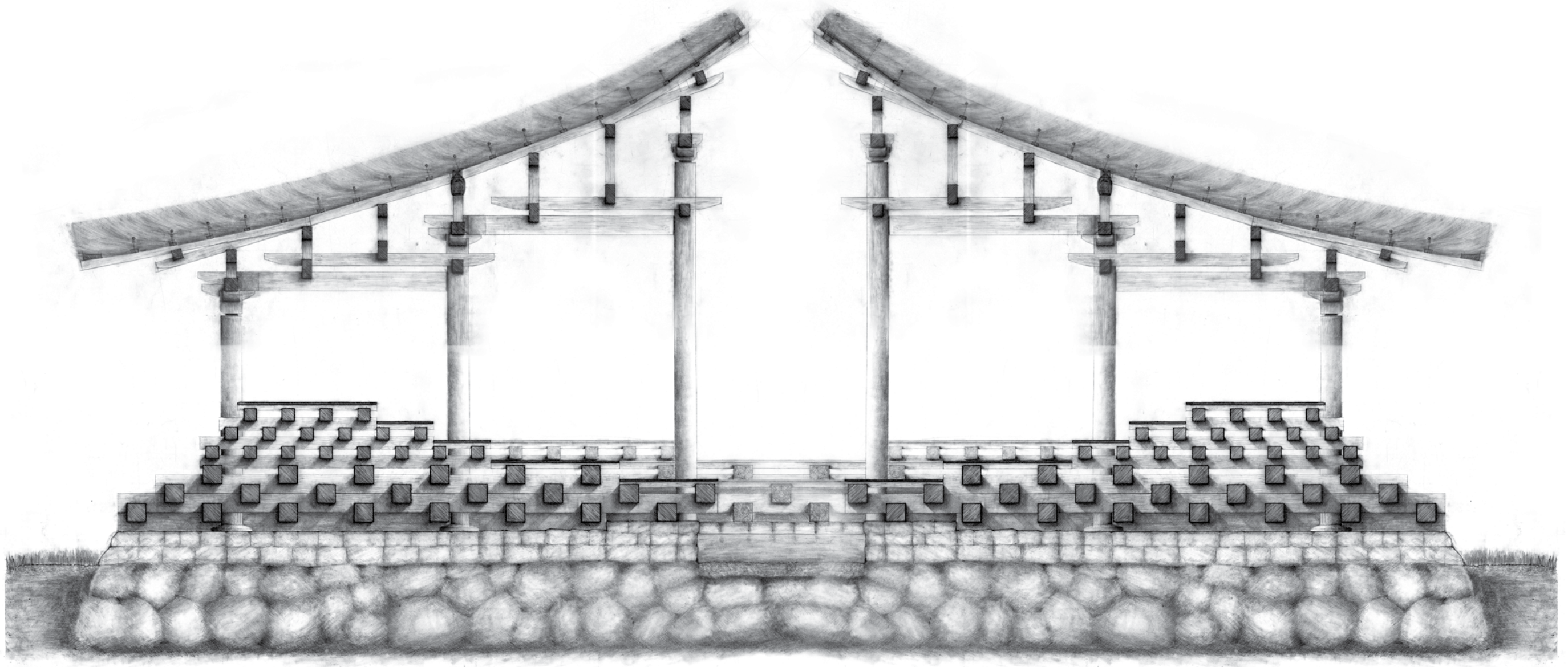
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All images and photographs are provided by author.





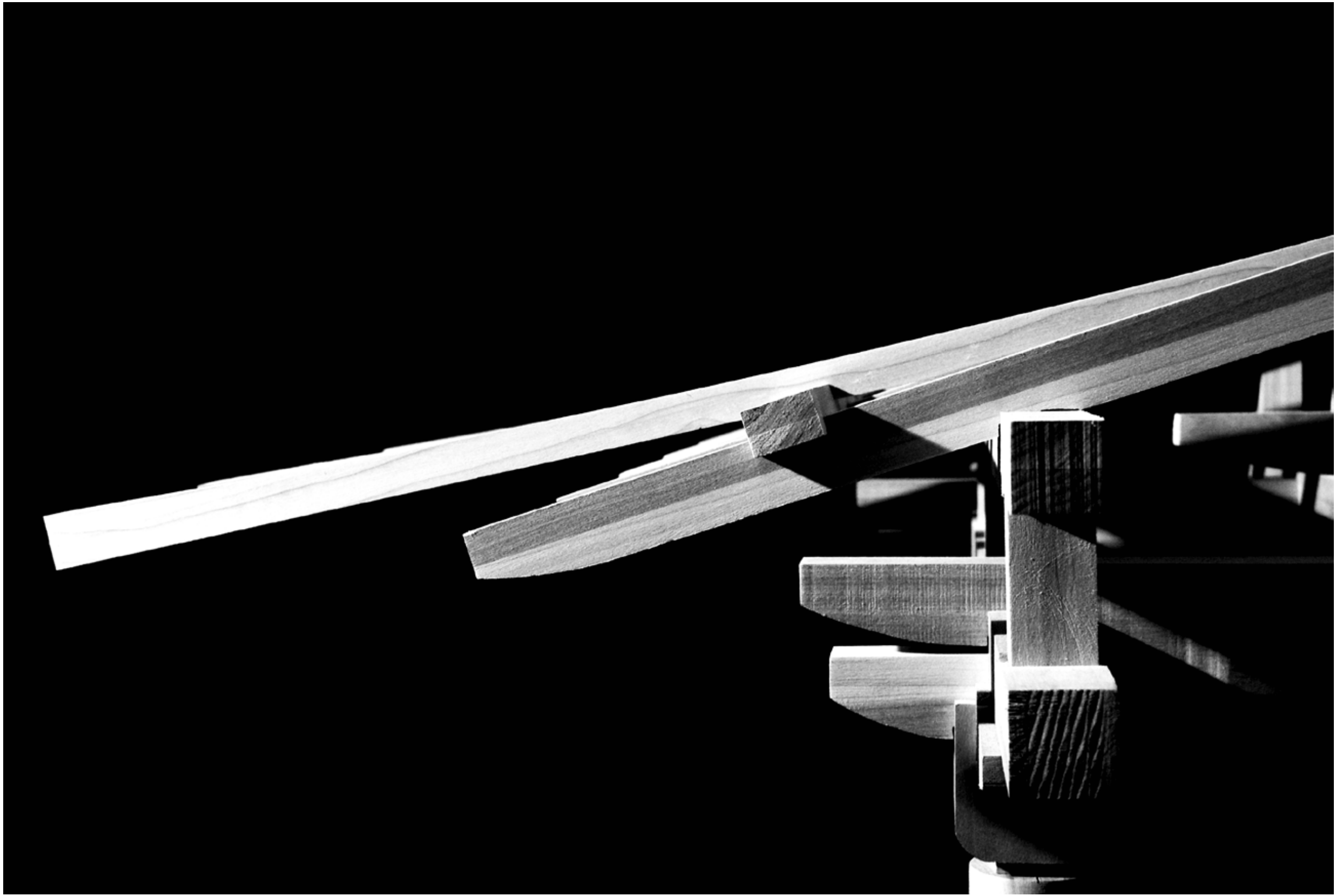


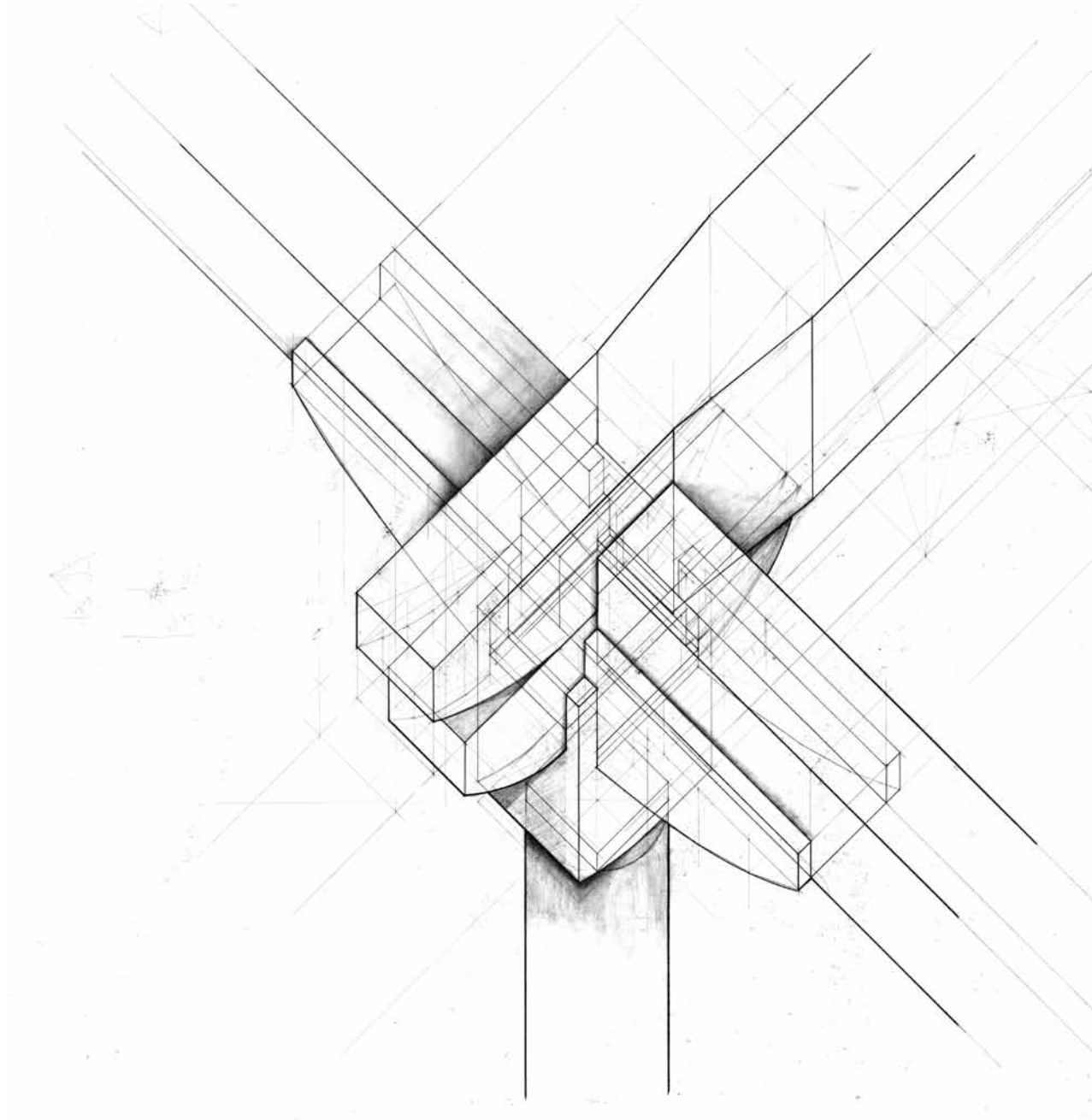


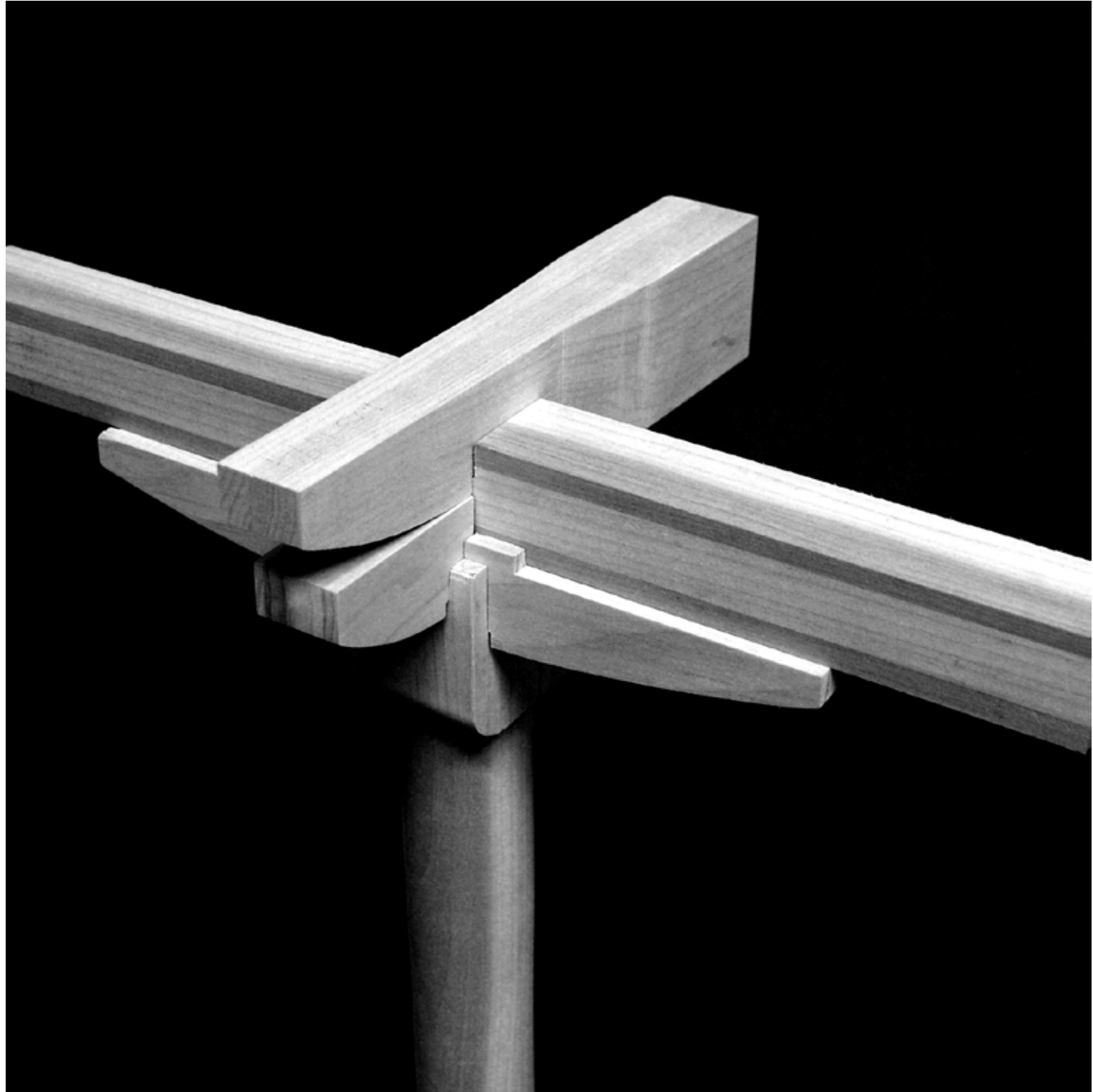
ศาลา : [sala];

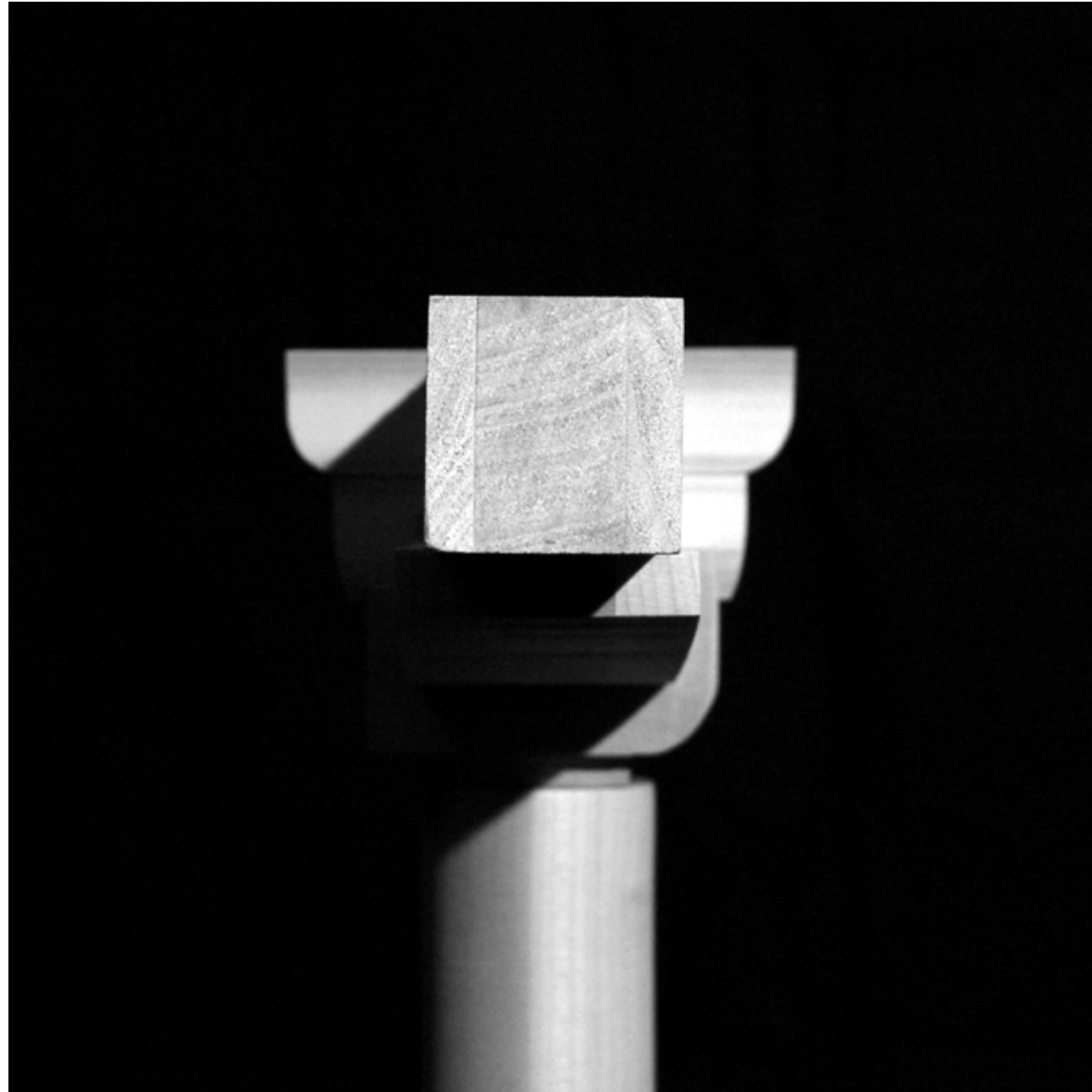
Sala (ศาลา) is an open pavilion, a meeting place, a place to protect people from sun and rain. They are found throughout Thailand, especially in Buddhist temple areas. In rural areas, they are frequently found along the roadside, where travelers use them to rest and reflect. Sala is typically found on a riverbank or *klong* (คลอง: canal) as a landing-place for watercraft, the traditional mode of transportation in Thailand.

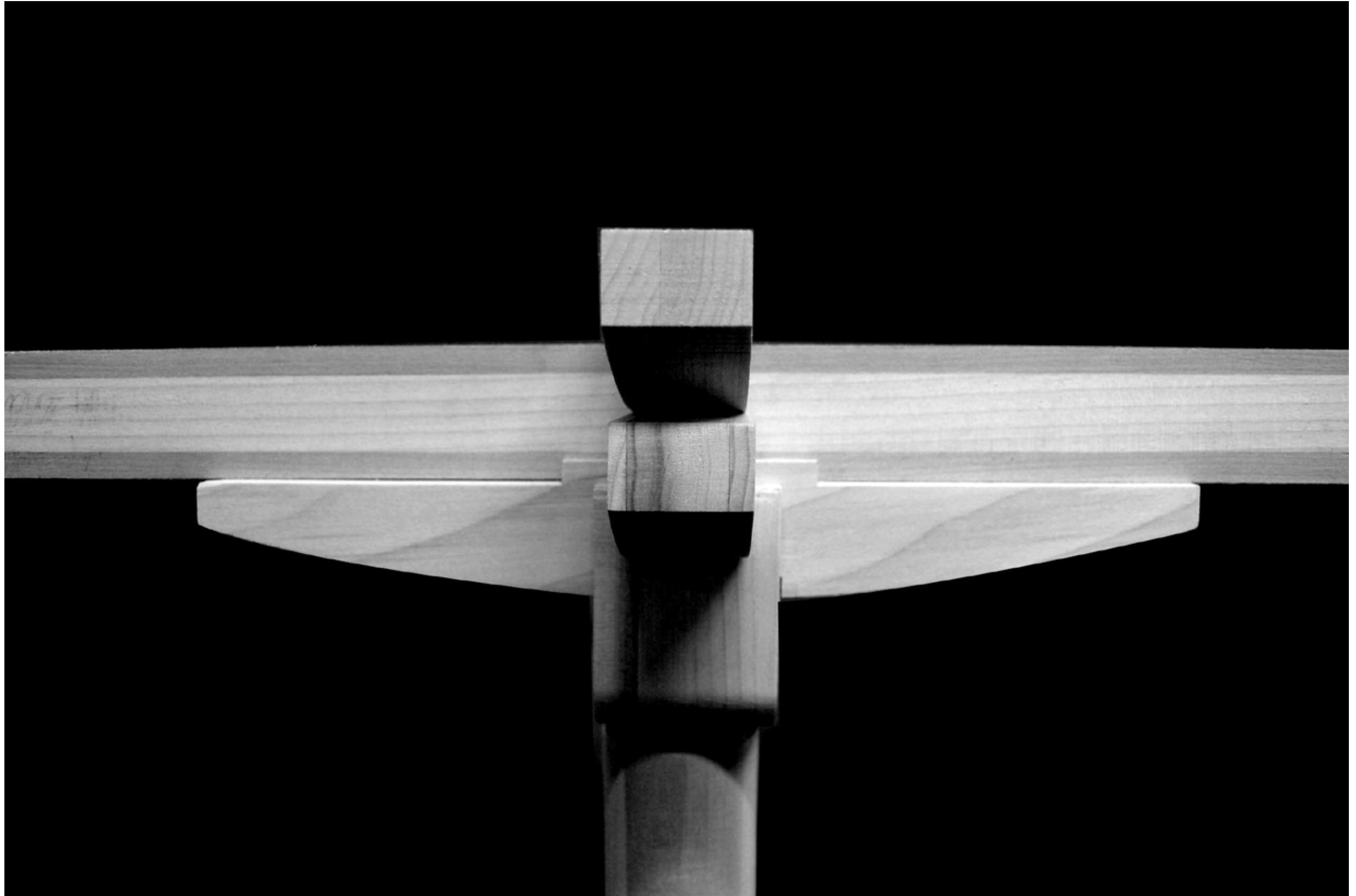
ศาลาเป็นที่พบปะ นั่งเล่น หลบแดดหลบฝน พบได้ในได้ตามวัด ในบ้าน สถานที่สาธารณะ ศาลาในวัดยังเป็นที่พึ่งเทศนาหรือประกอบพิธีทางศาสนา ศาลายังใช้เป็นศาลาริมทาง สำหรับให้นักเดินทางพักผ่อน หย่อนใจ บางแห่งยังเป็นป้ายรถเมล์ ริมถนน หรืออาจเป็นท่าเรือ สำหรับจอดเรือ รือเรือ



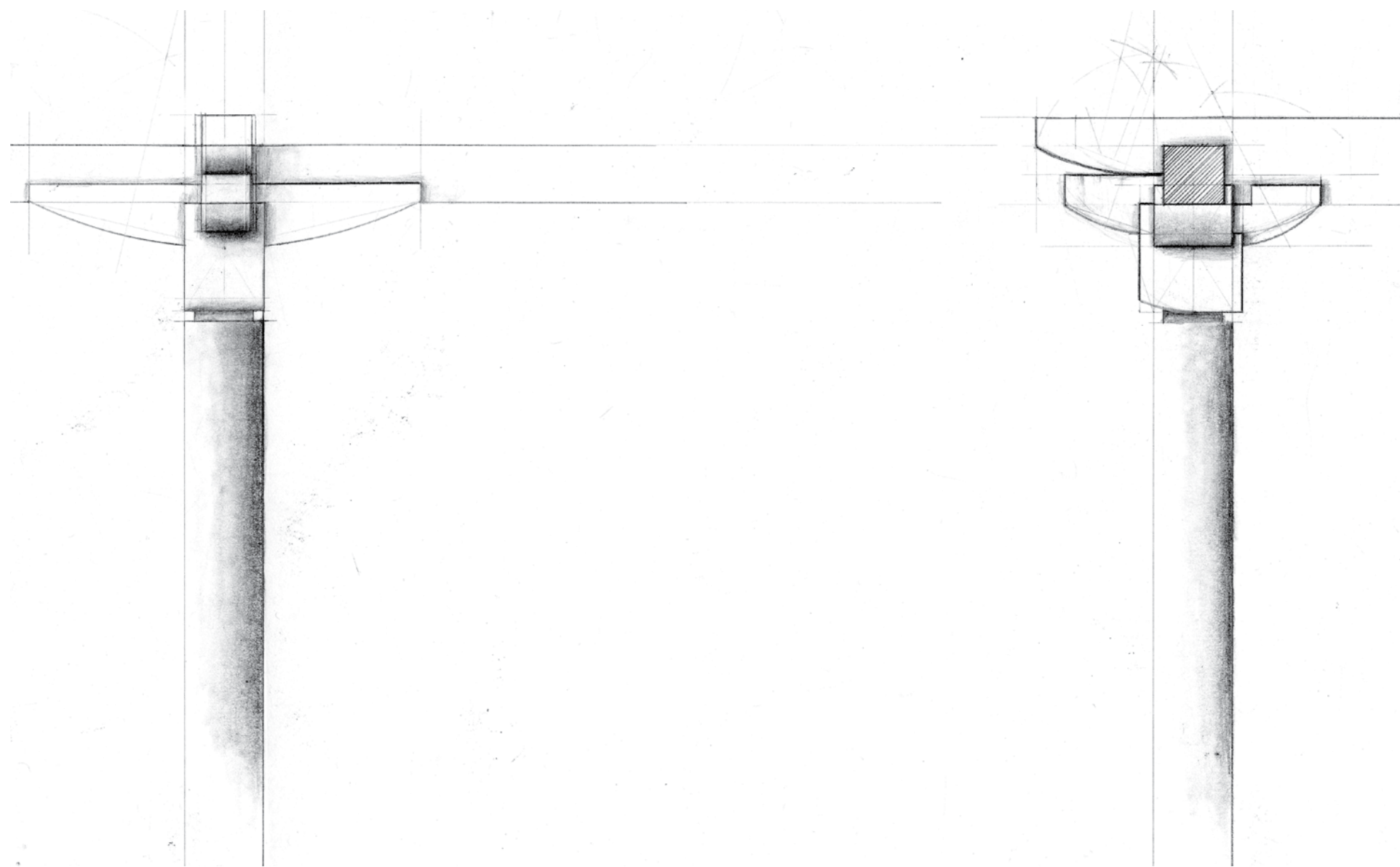


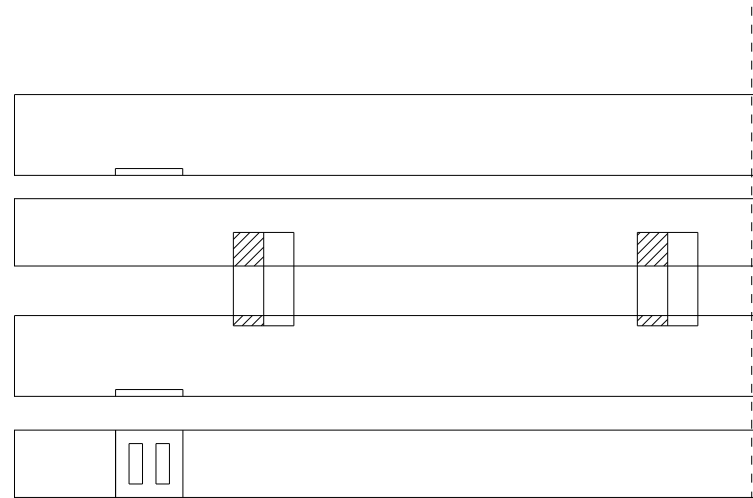
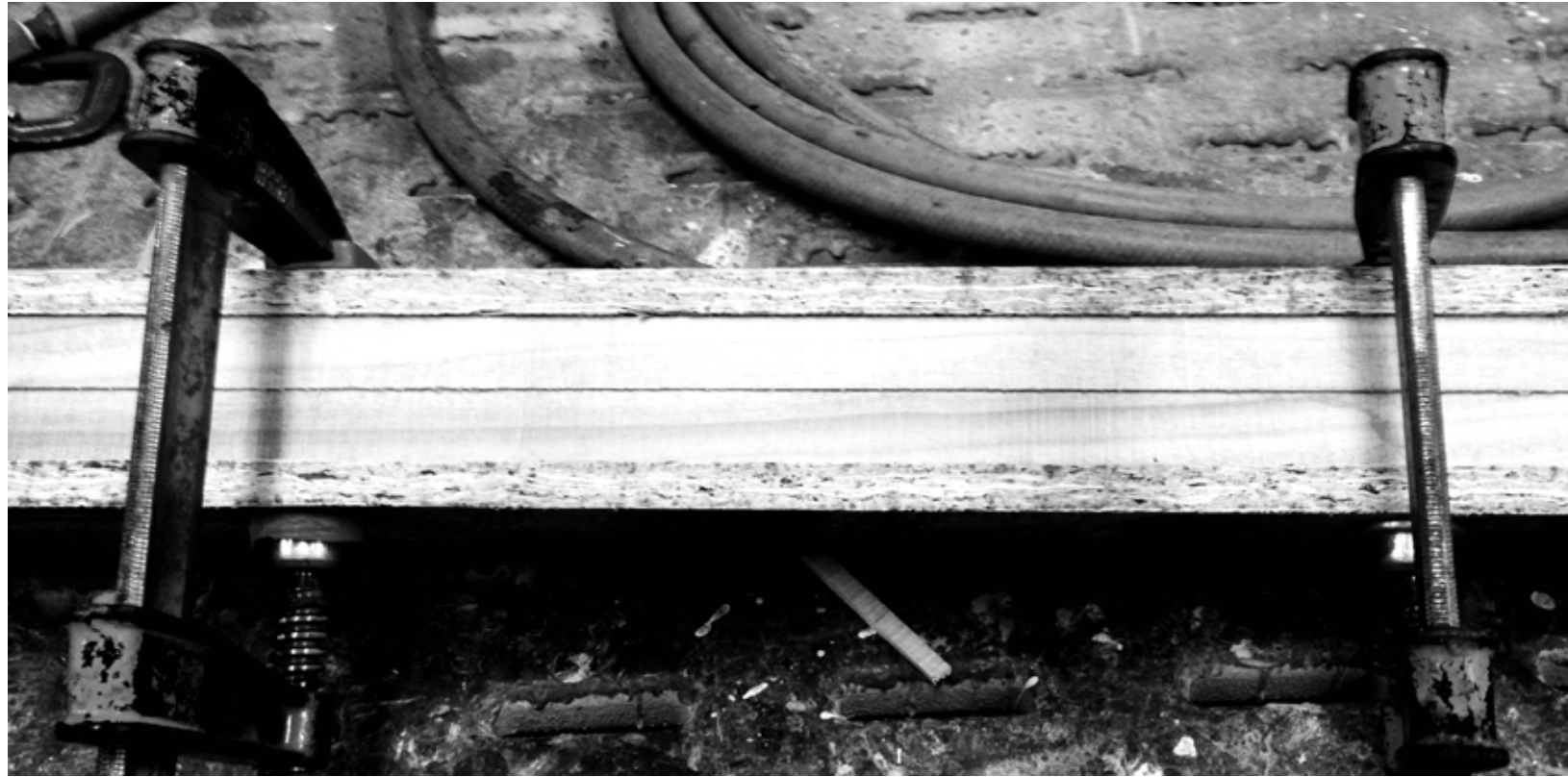


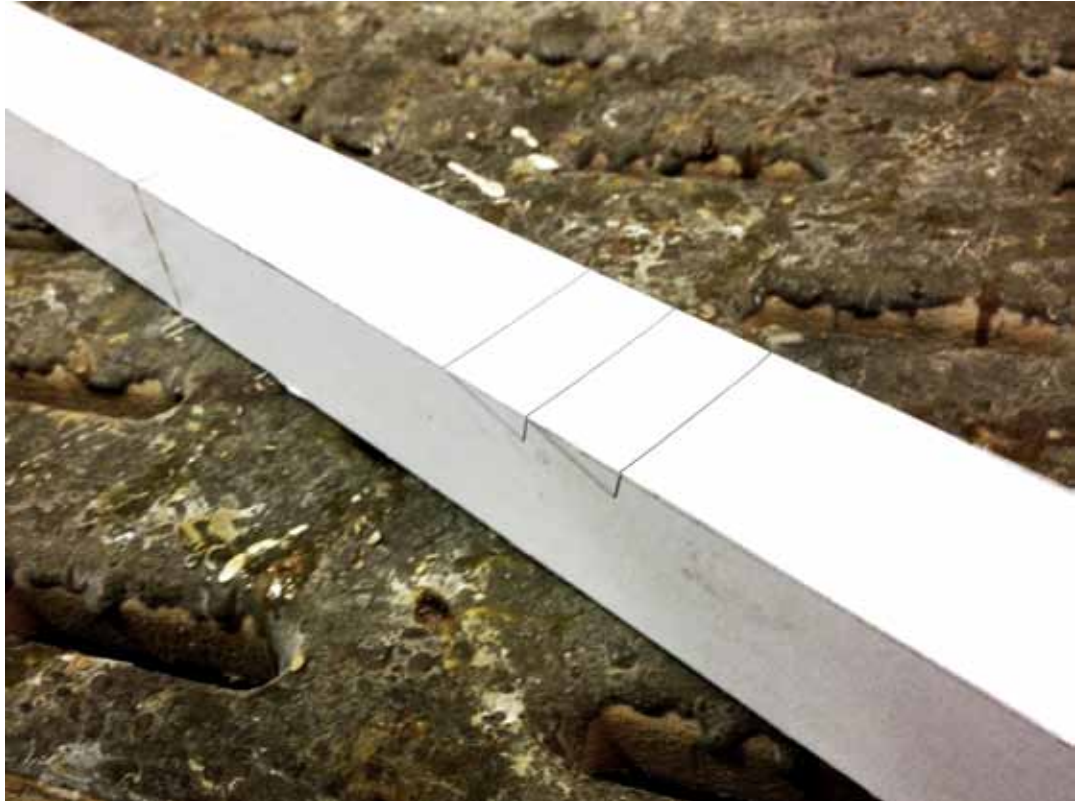
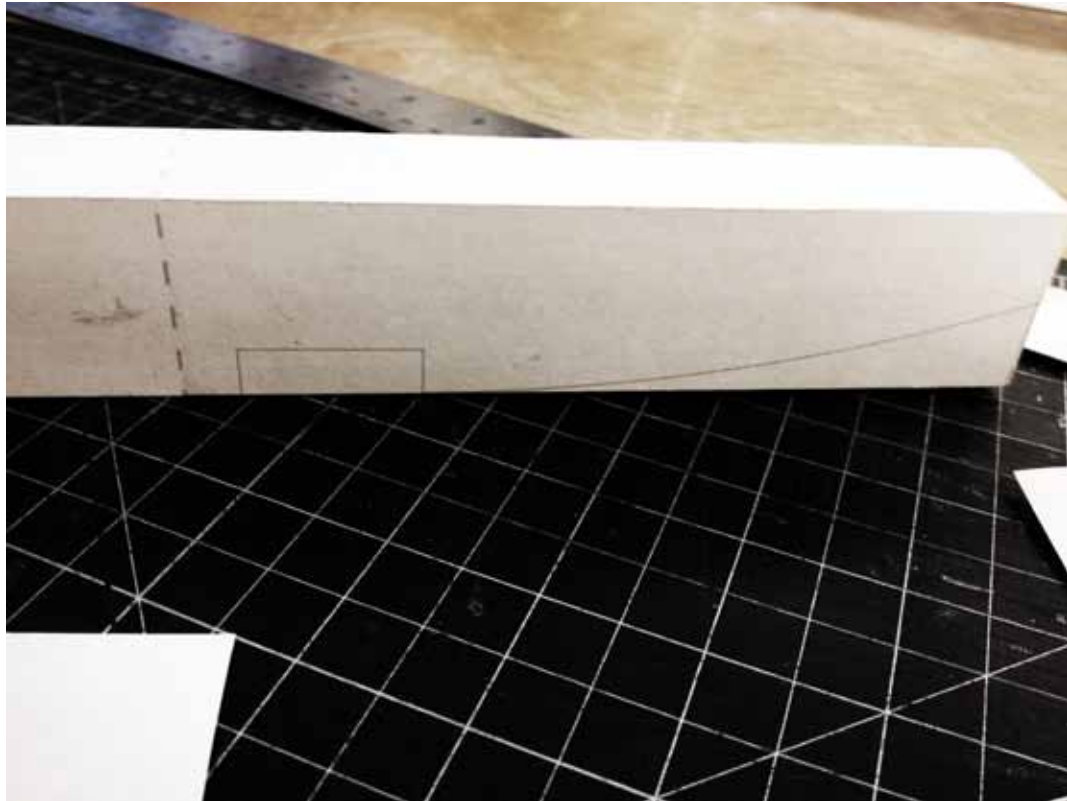


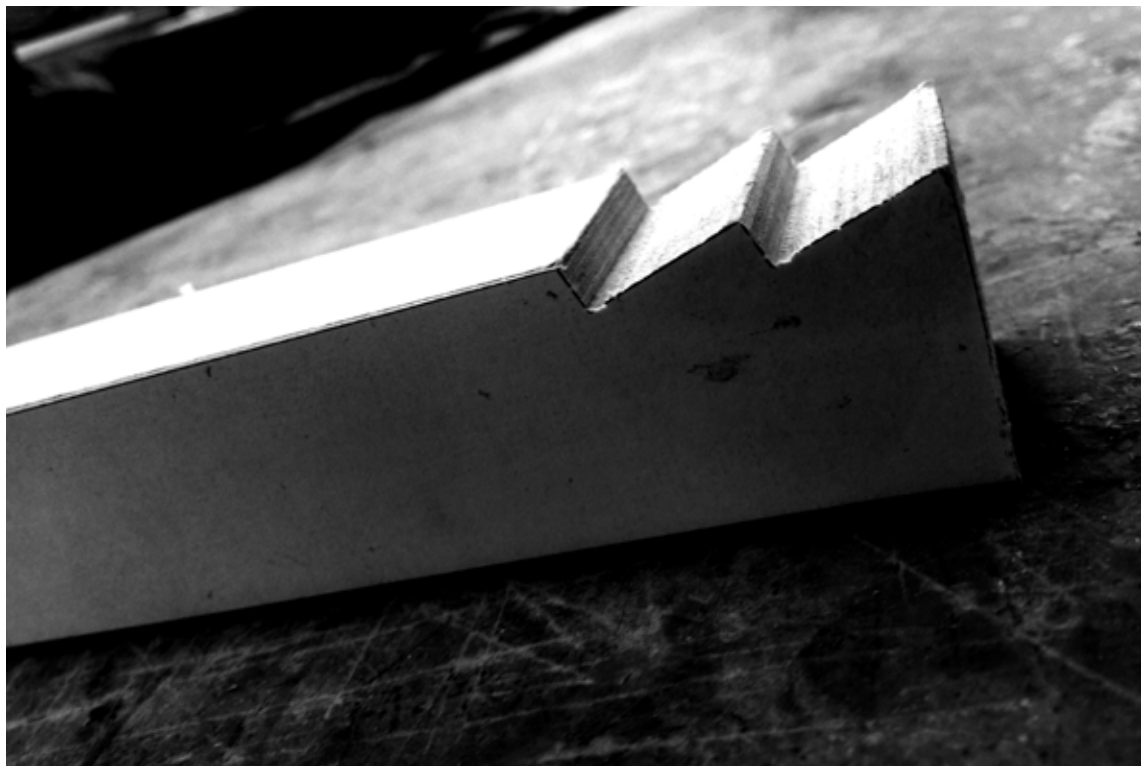
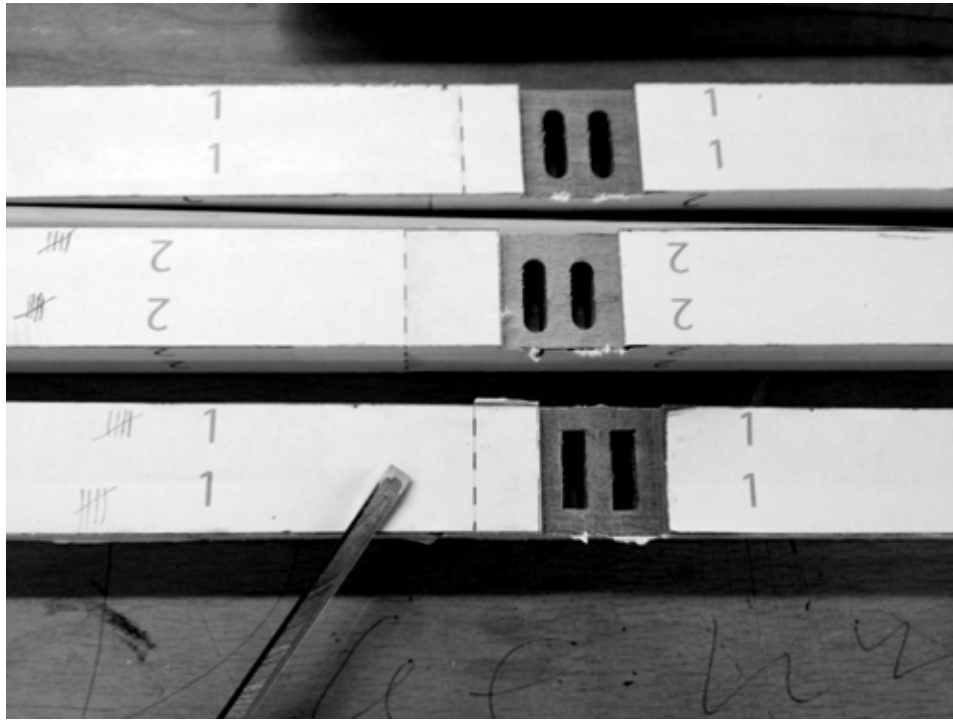


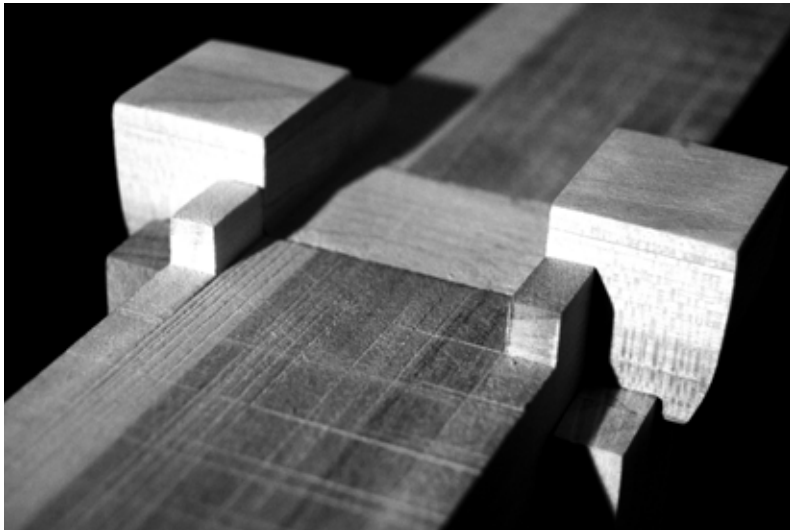
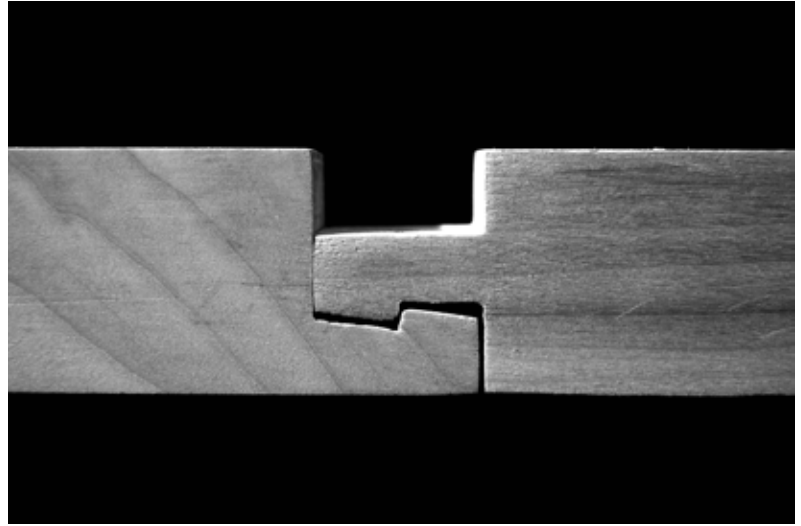
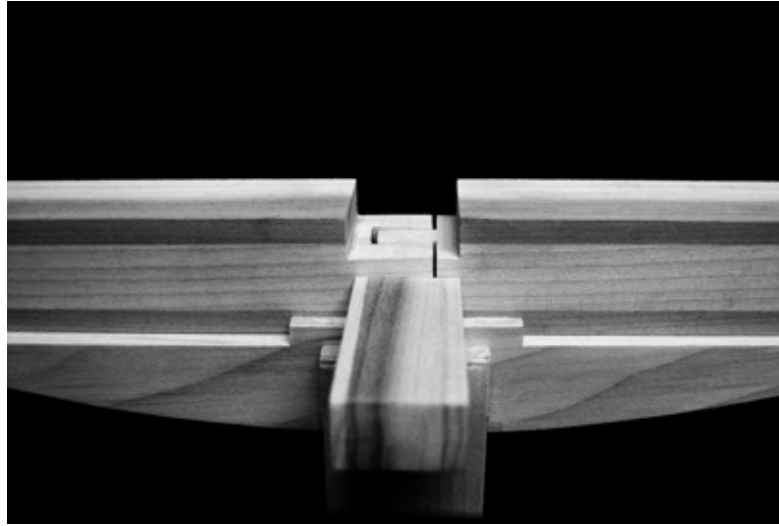




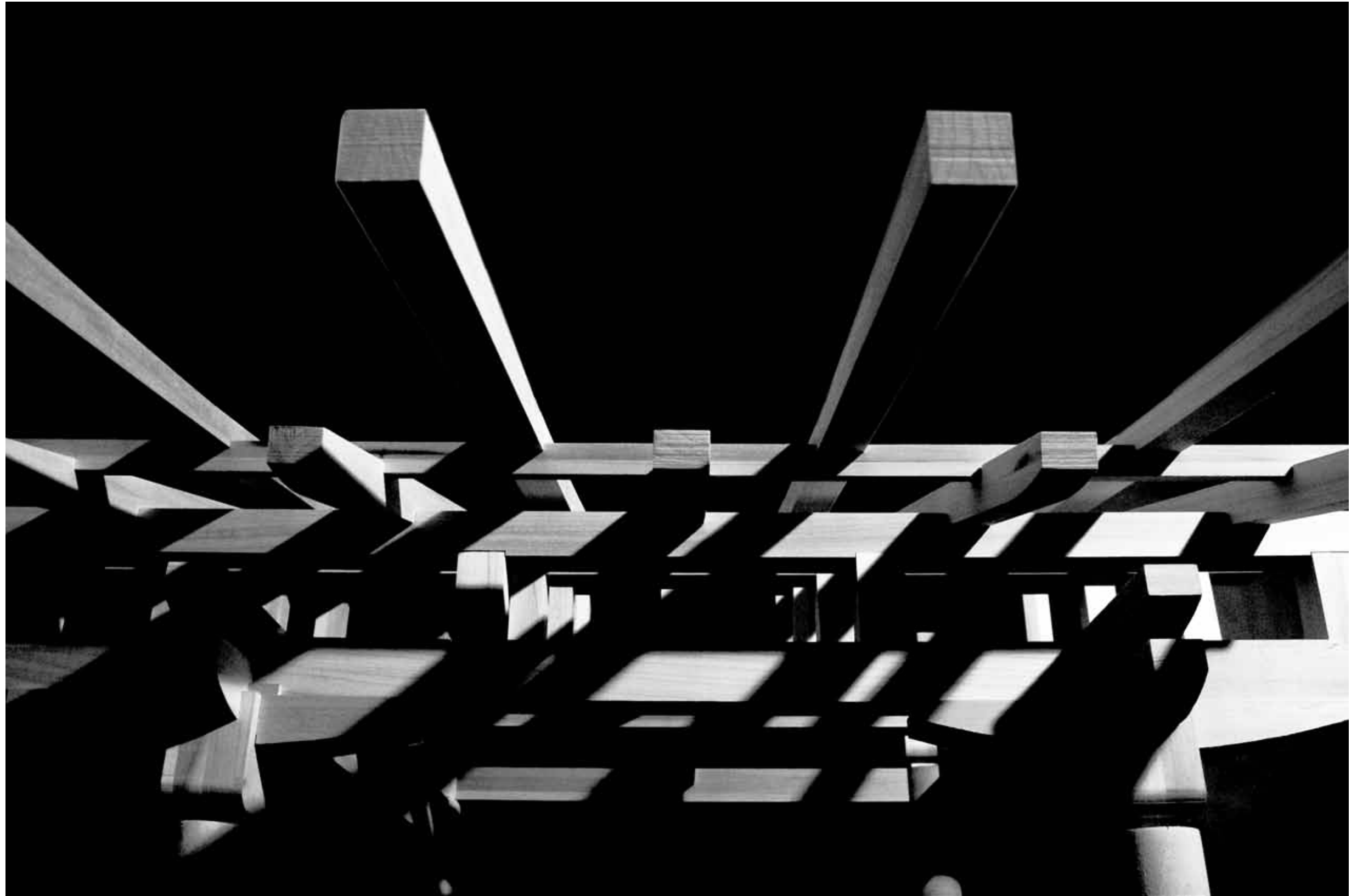








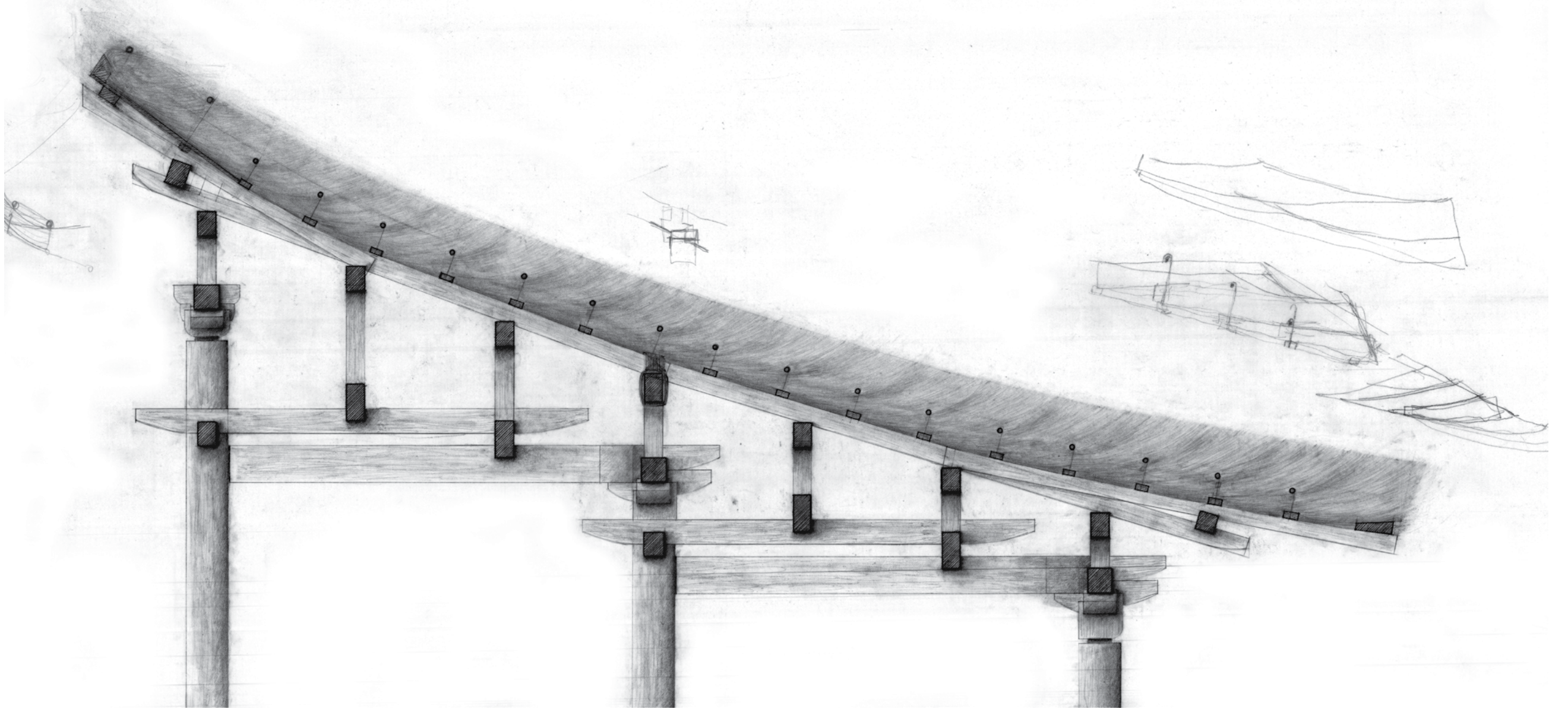




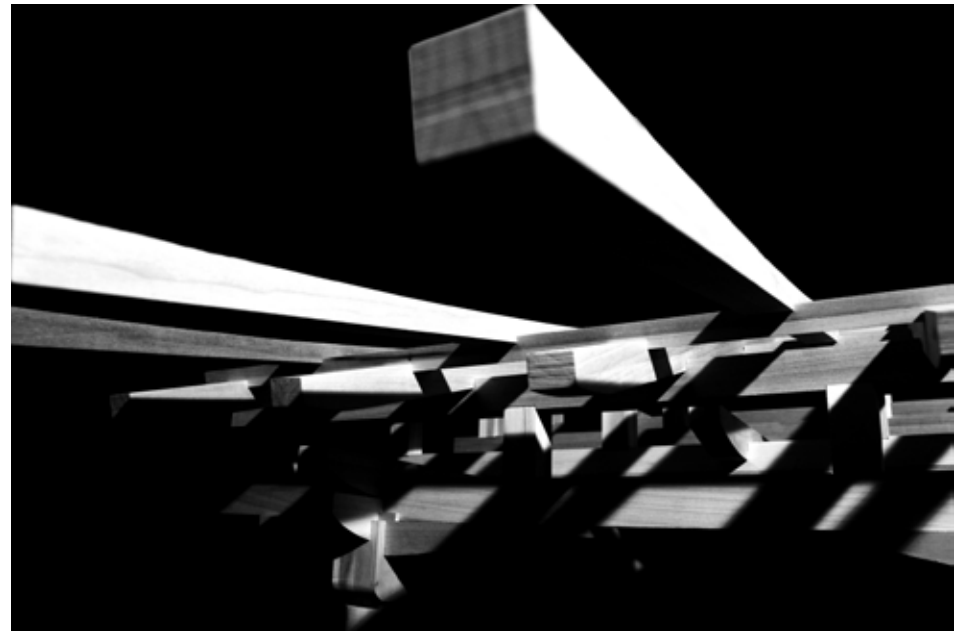
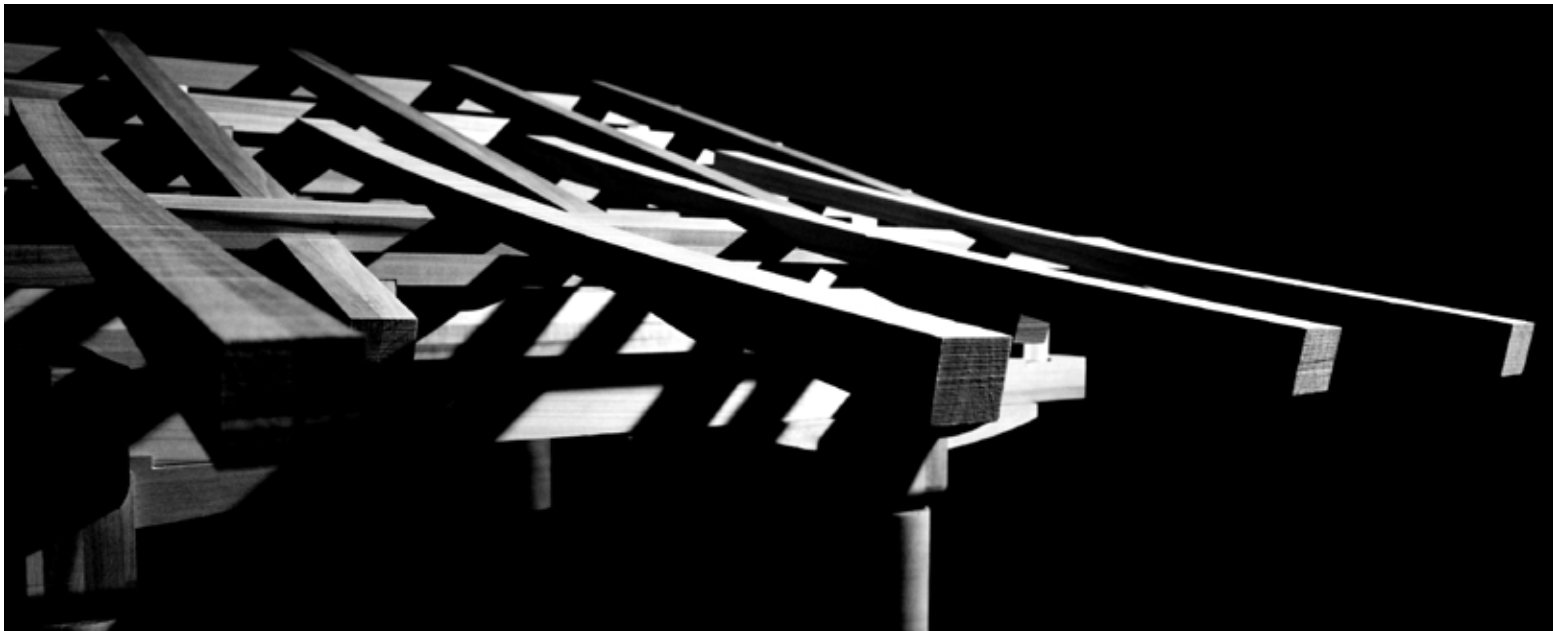


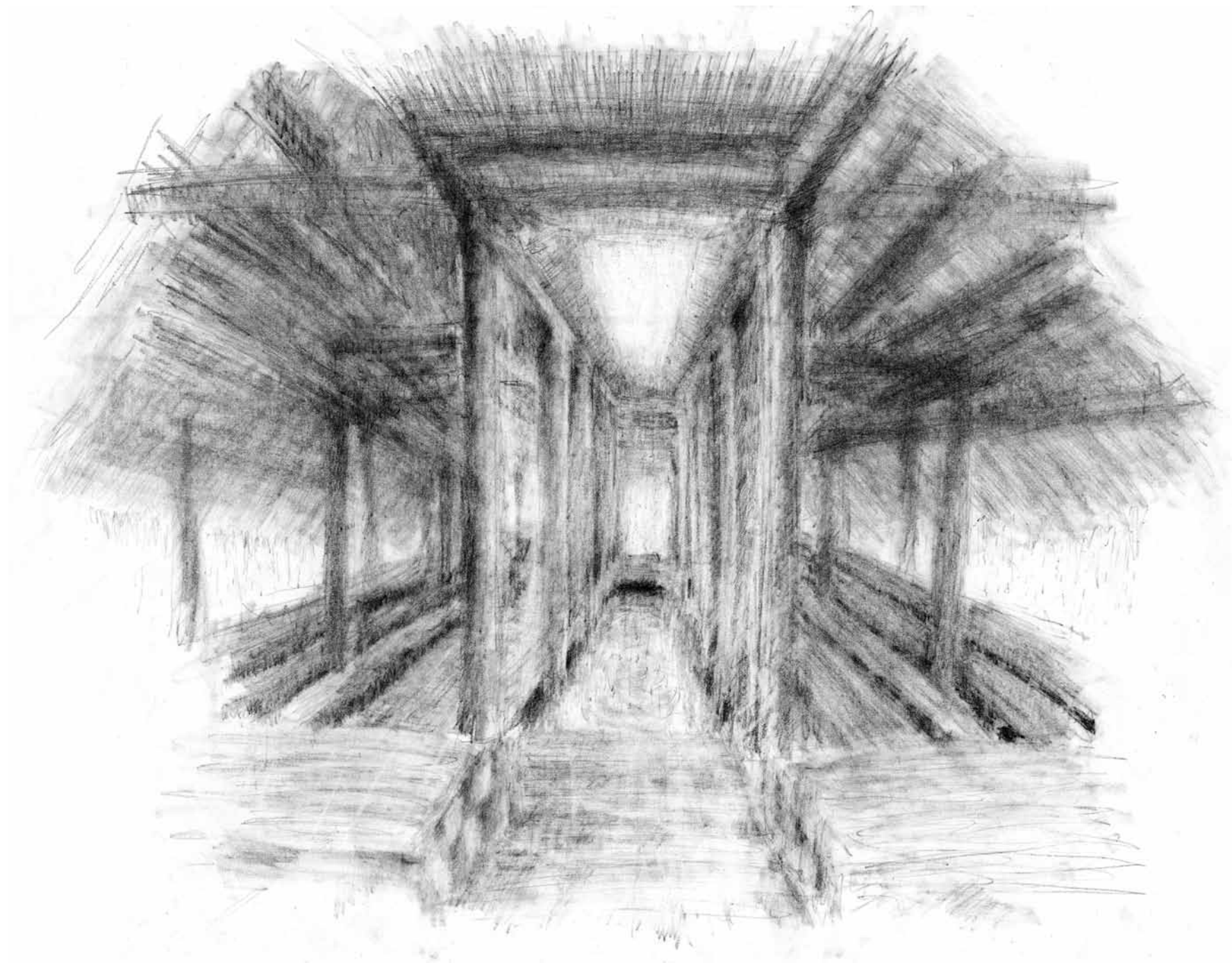


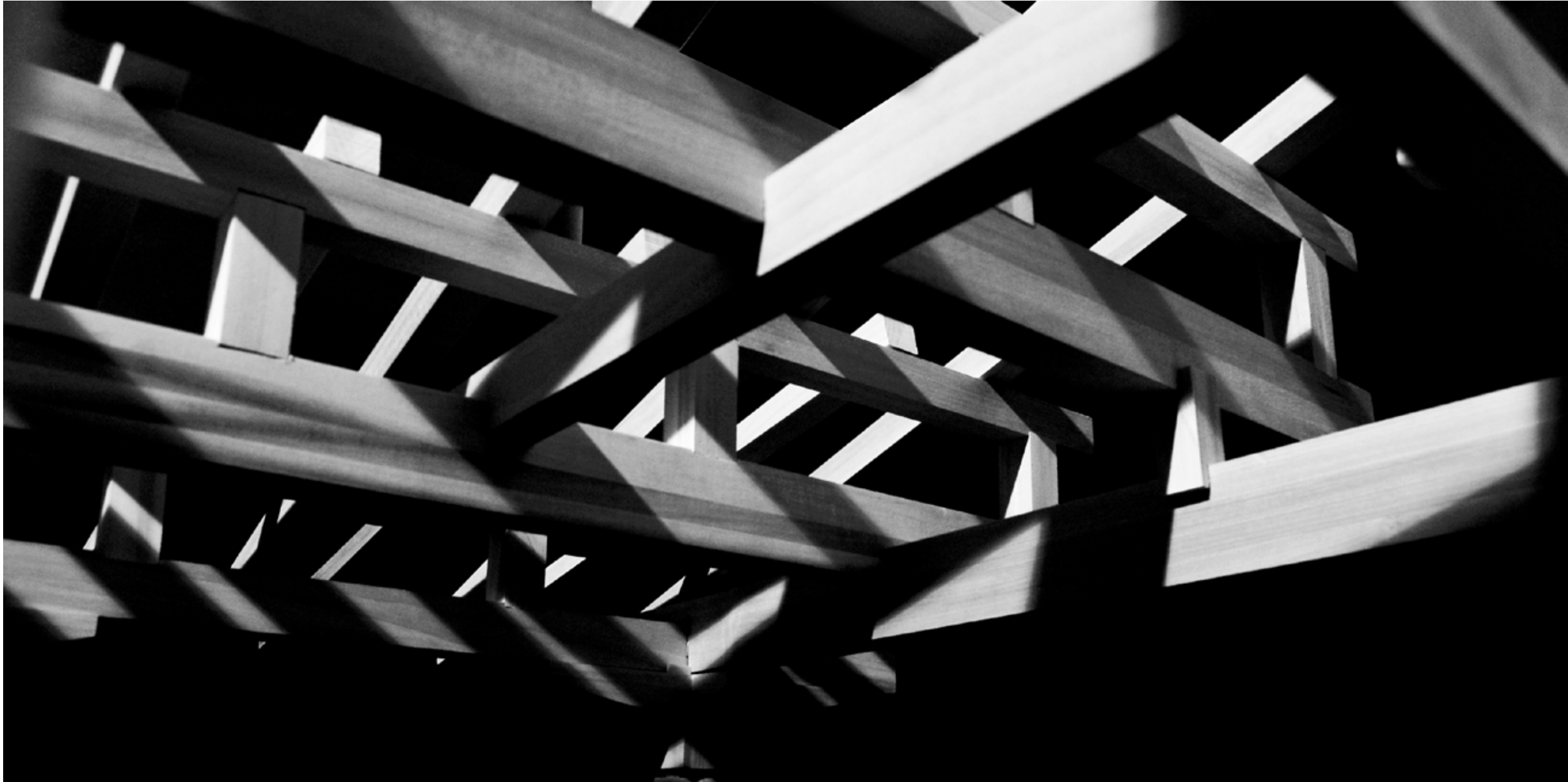




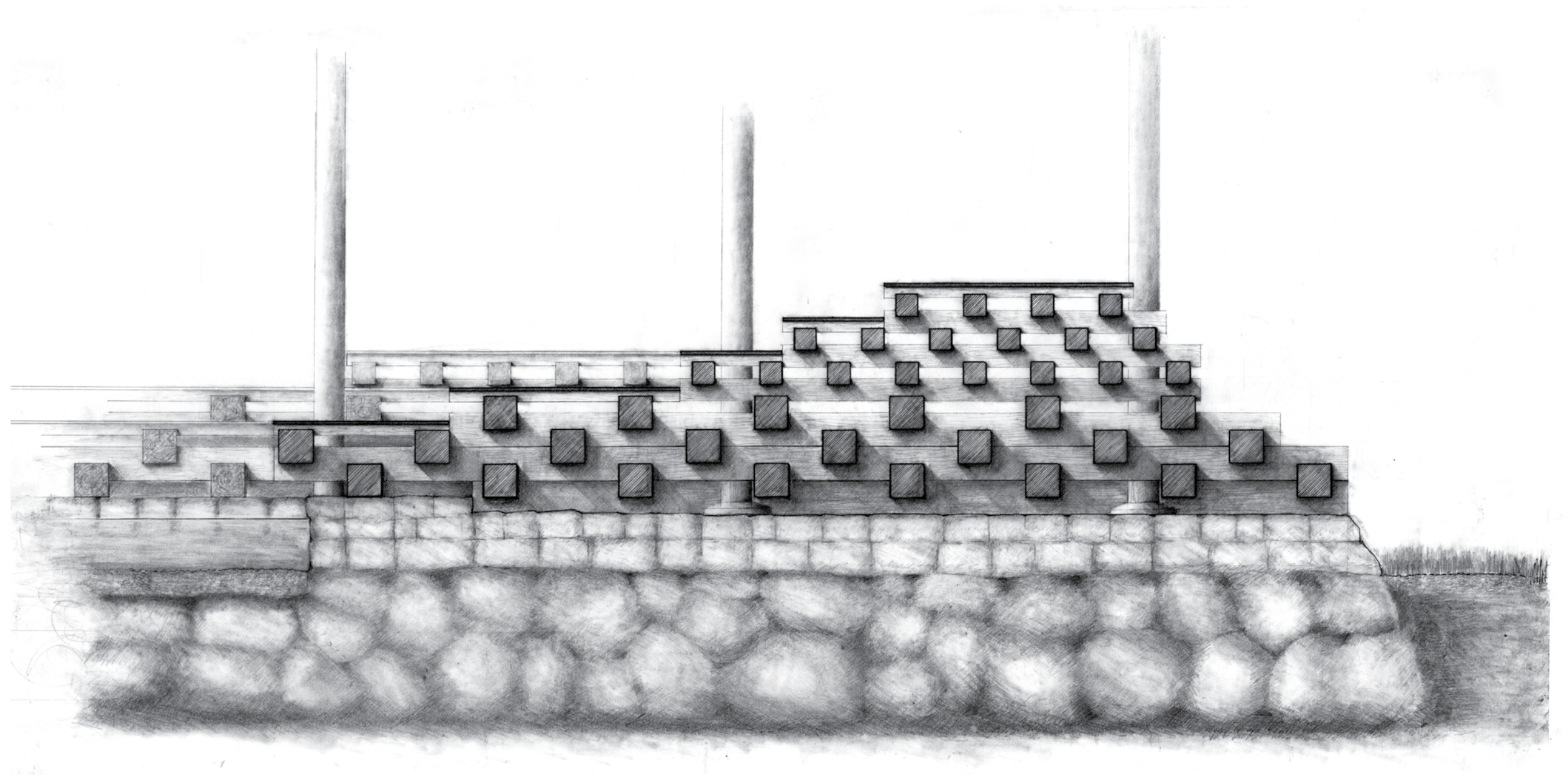




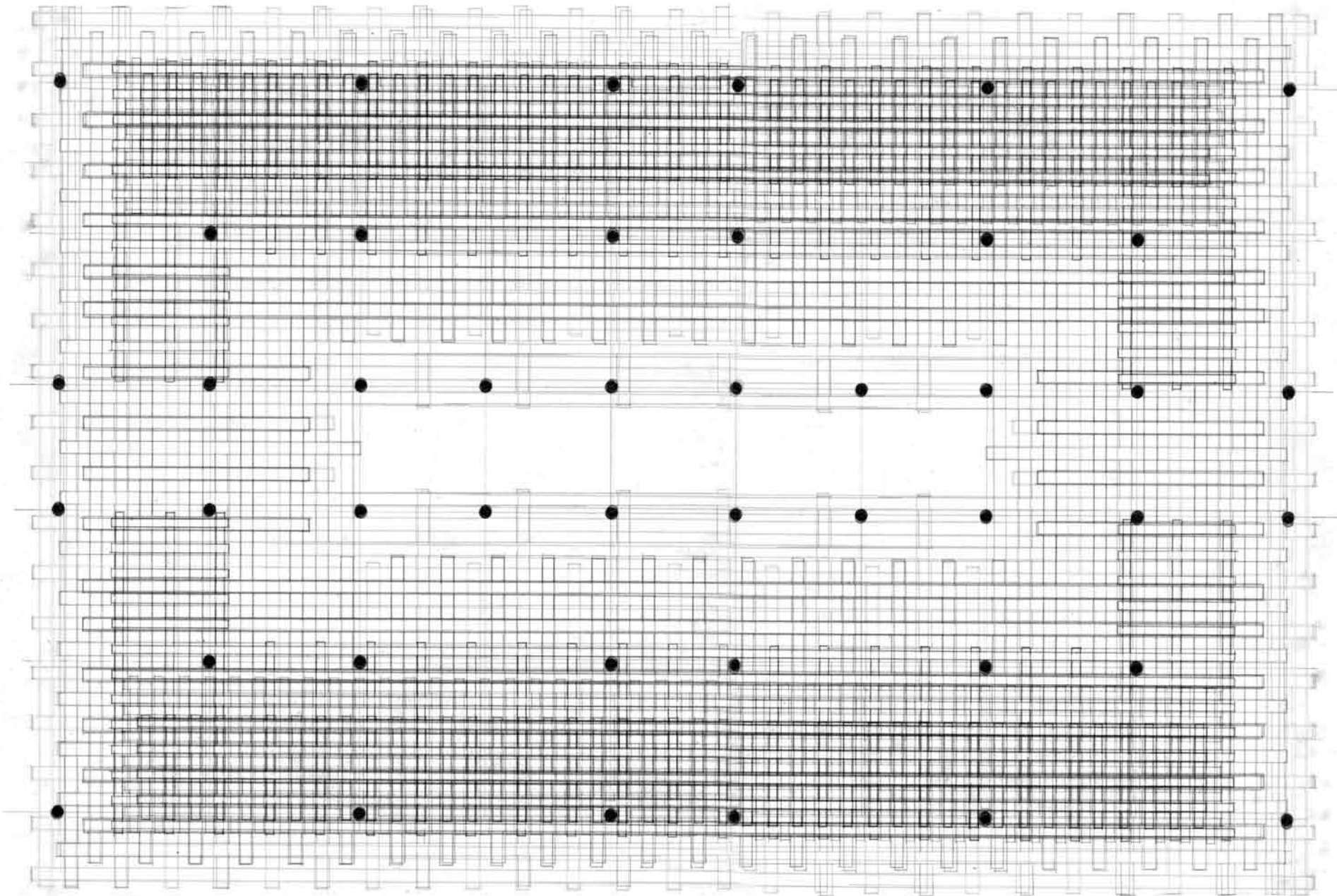


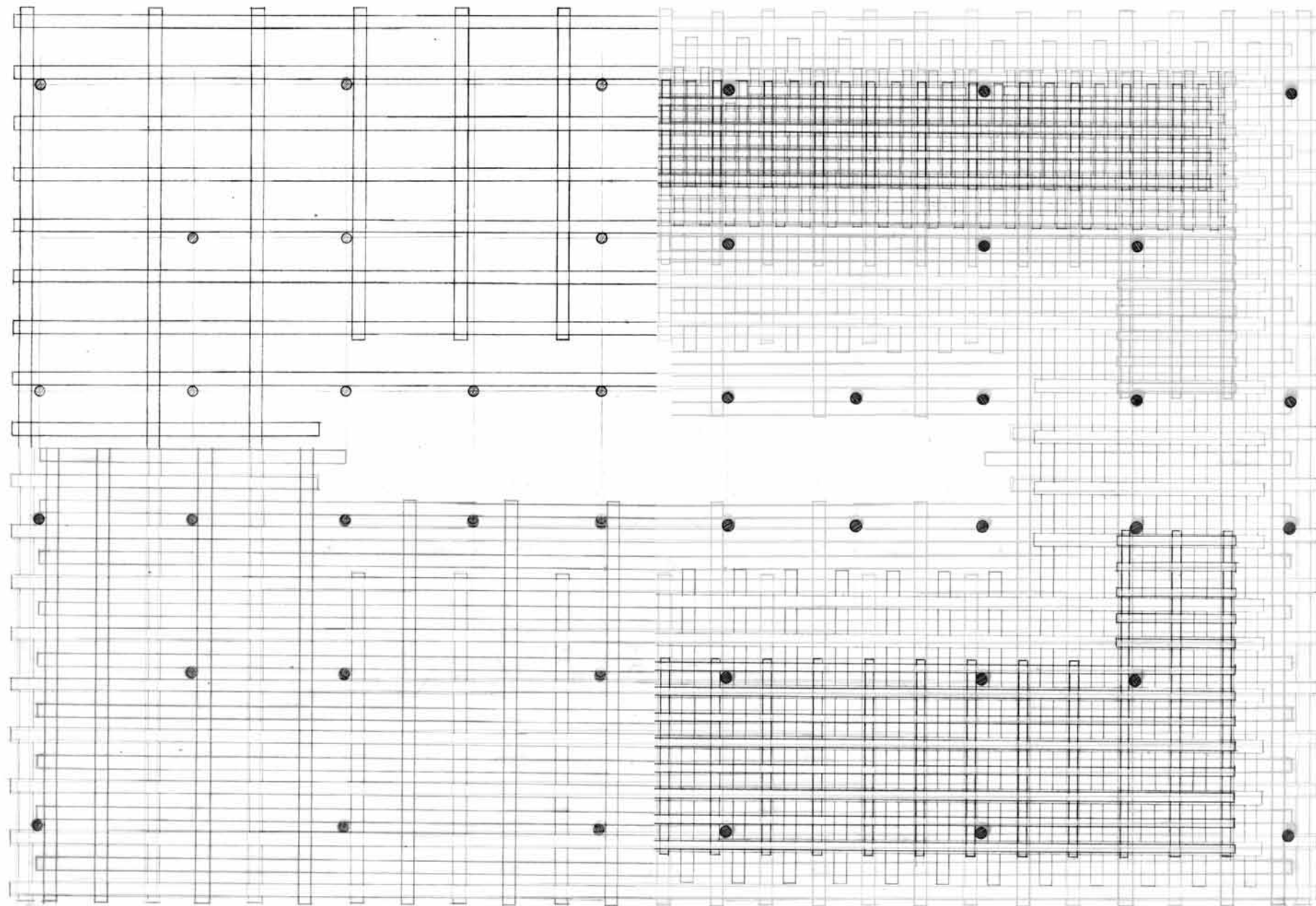


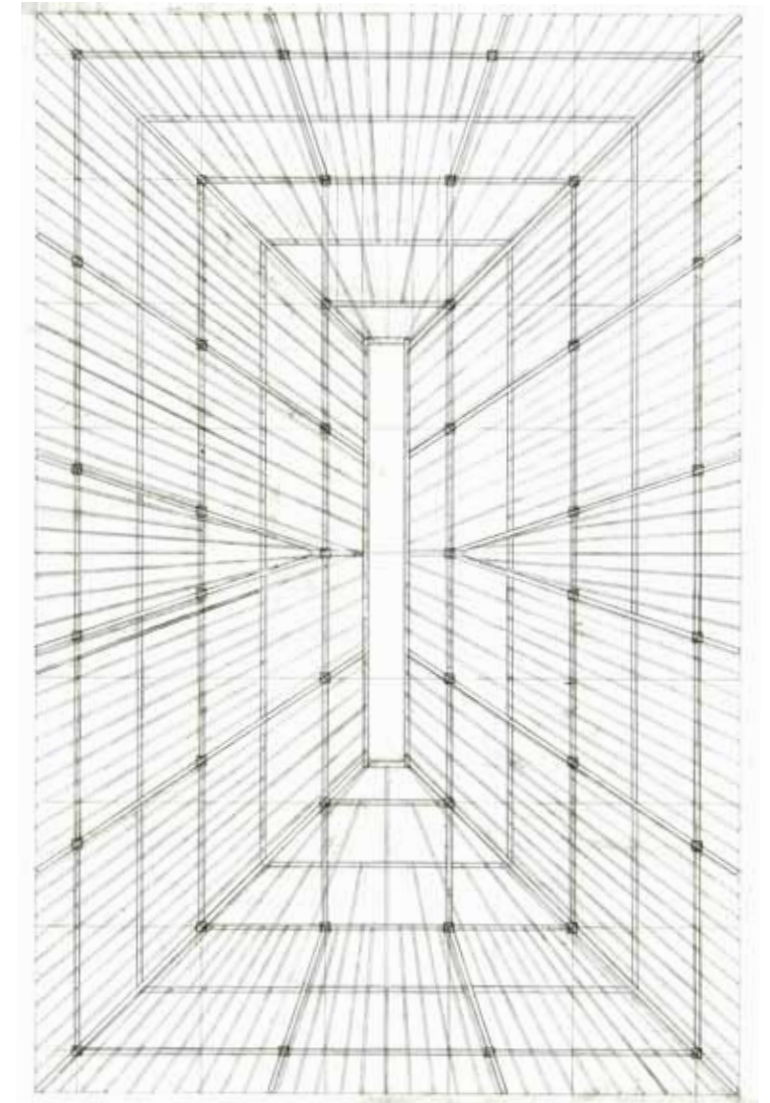
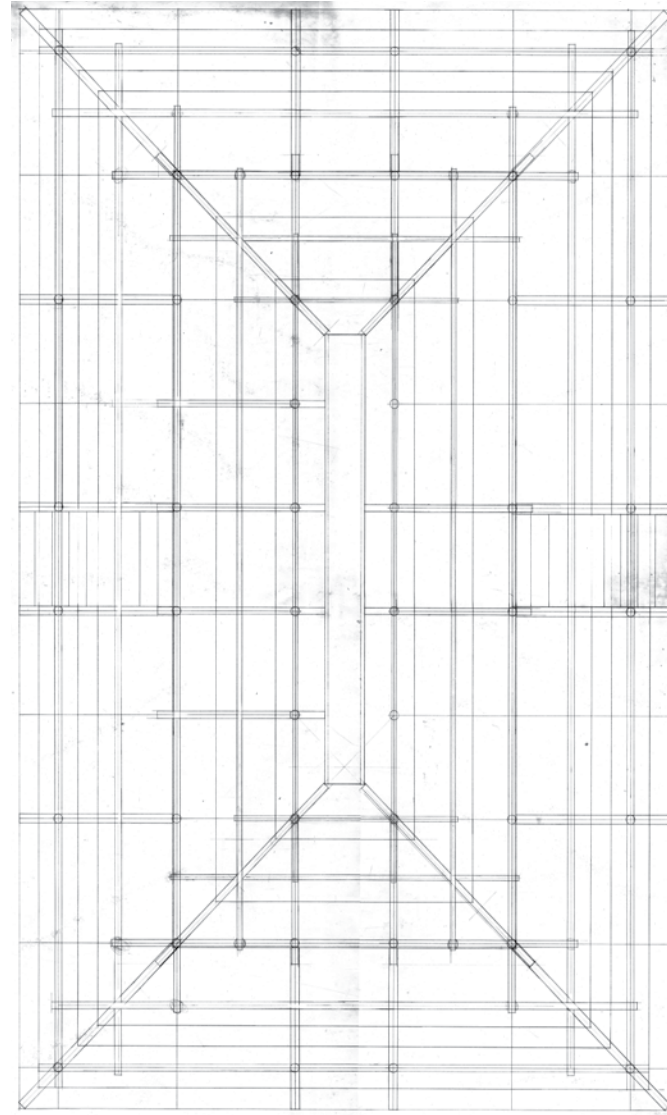
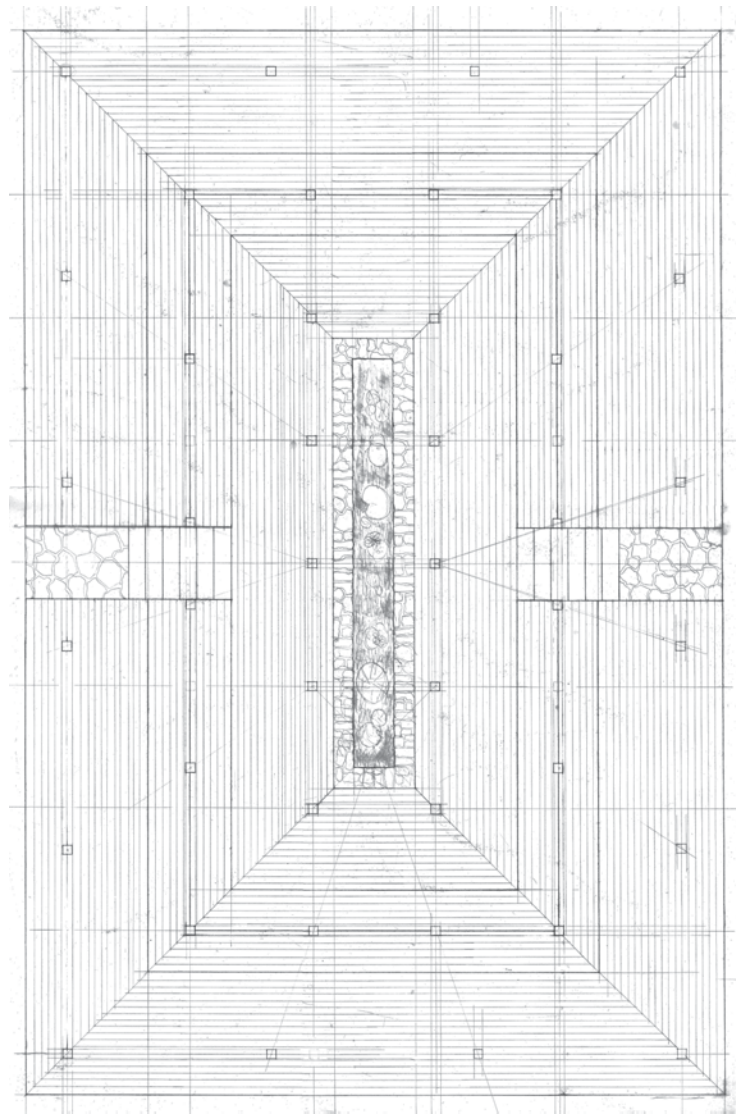


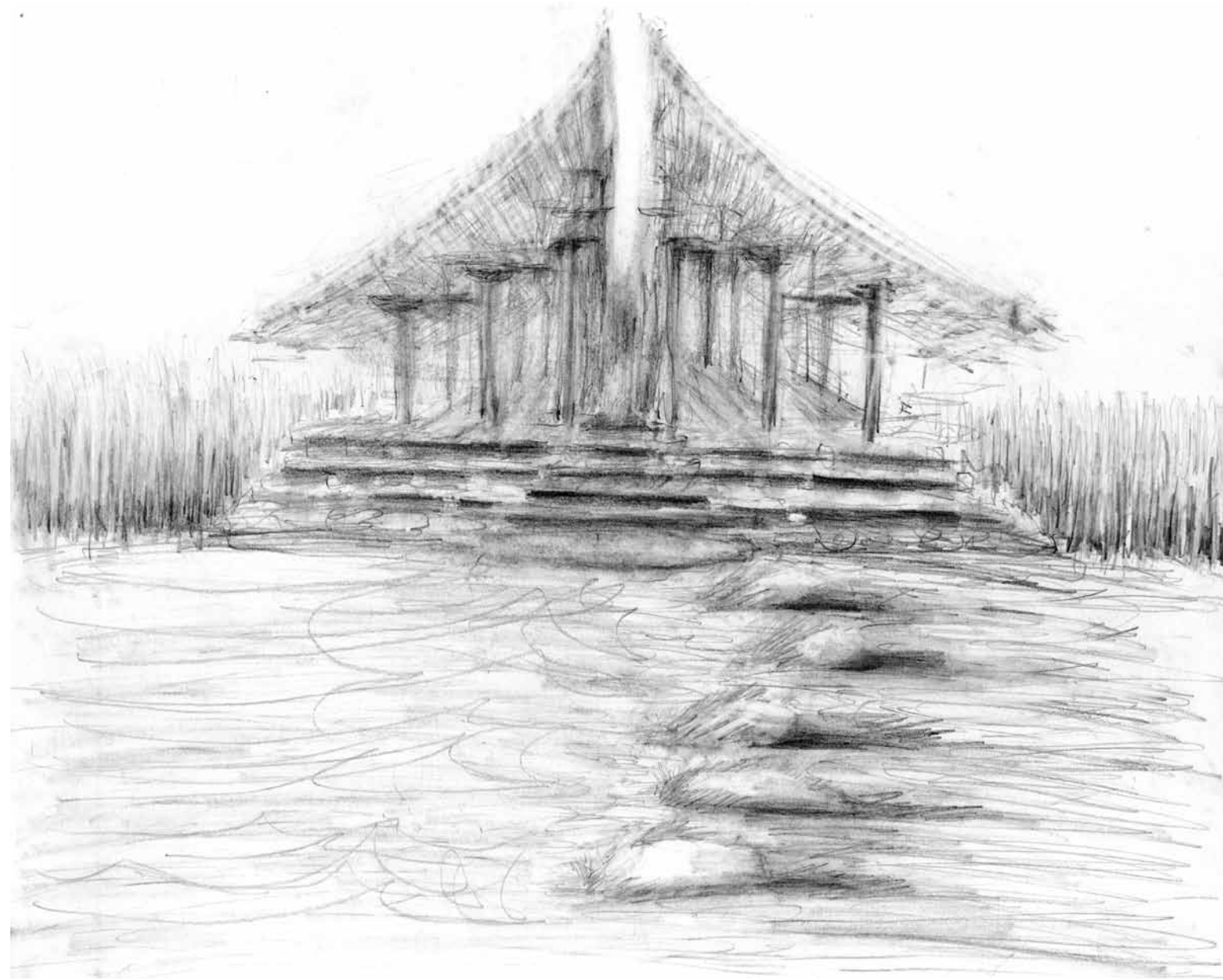


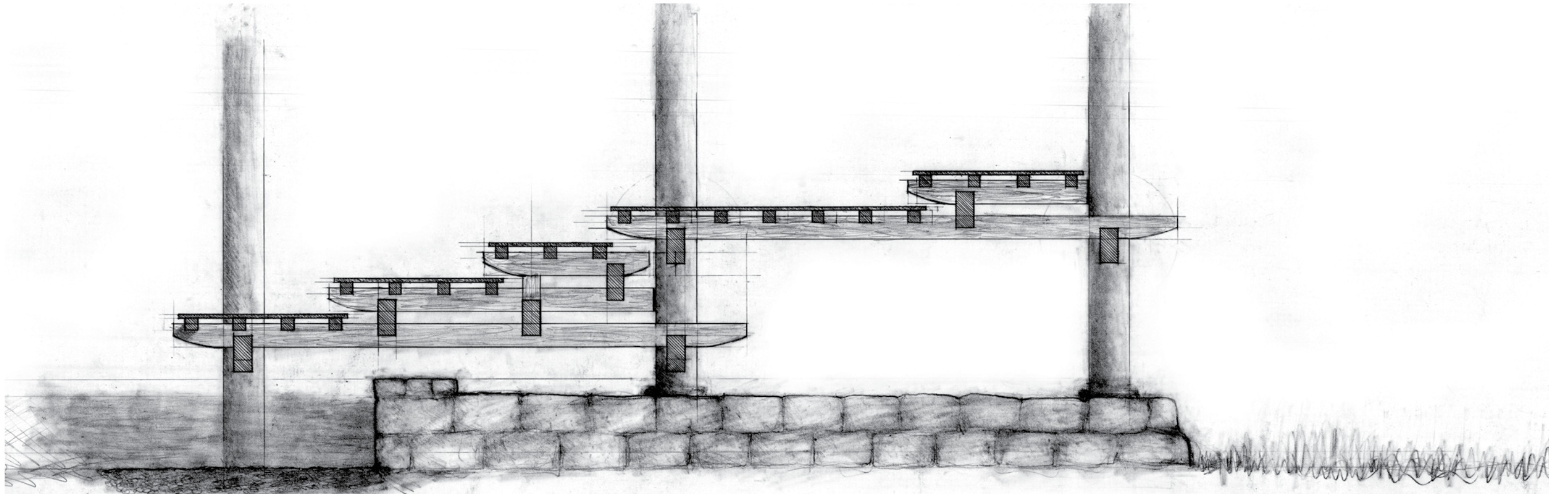


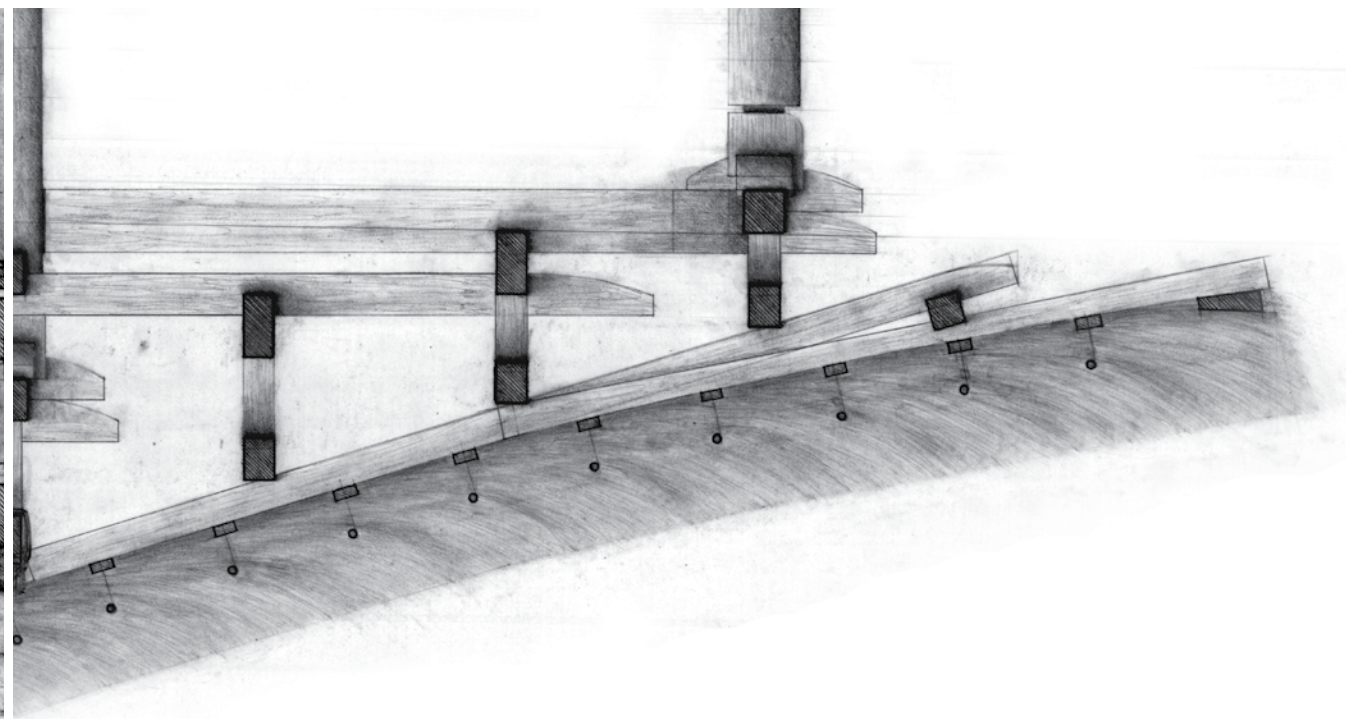
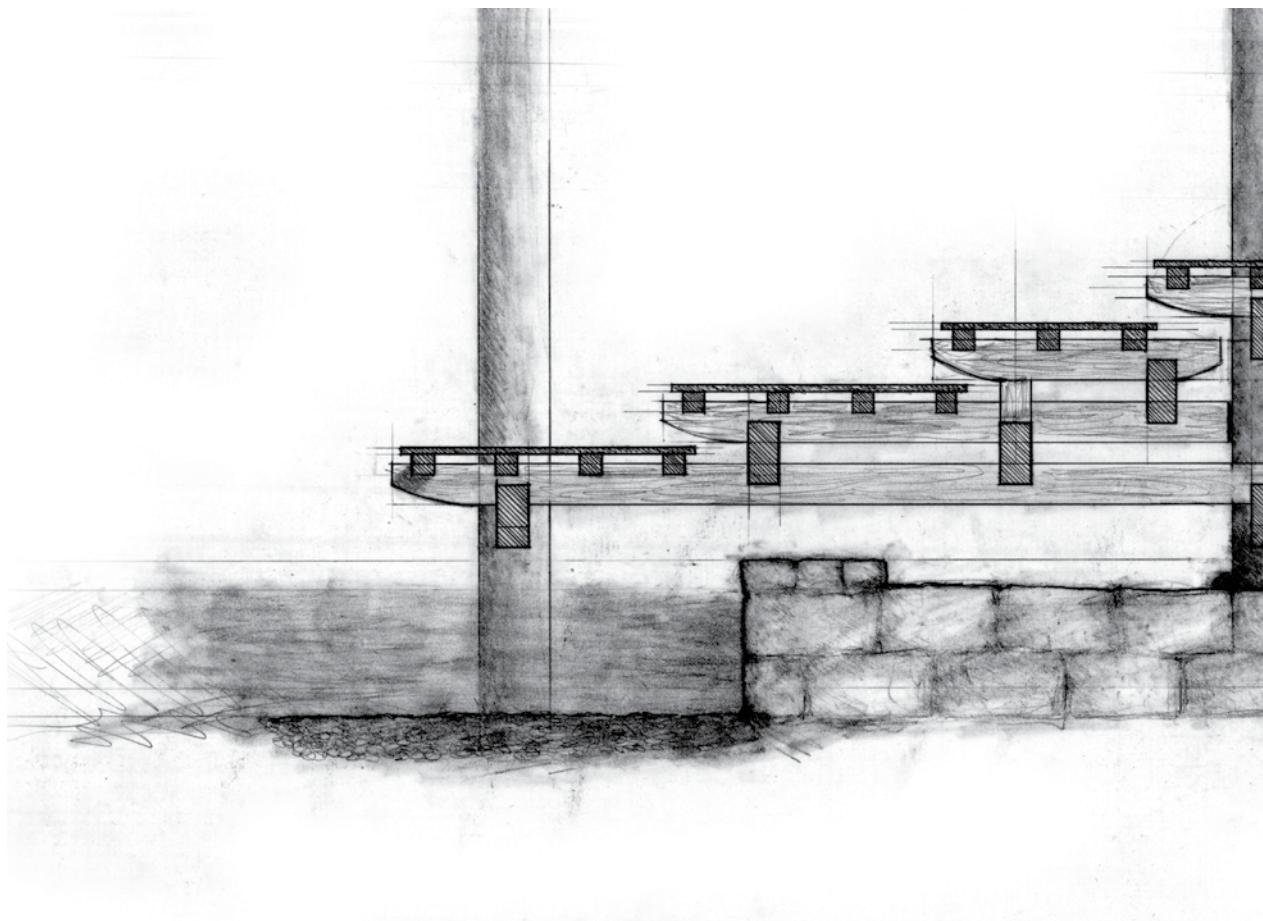


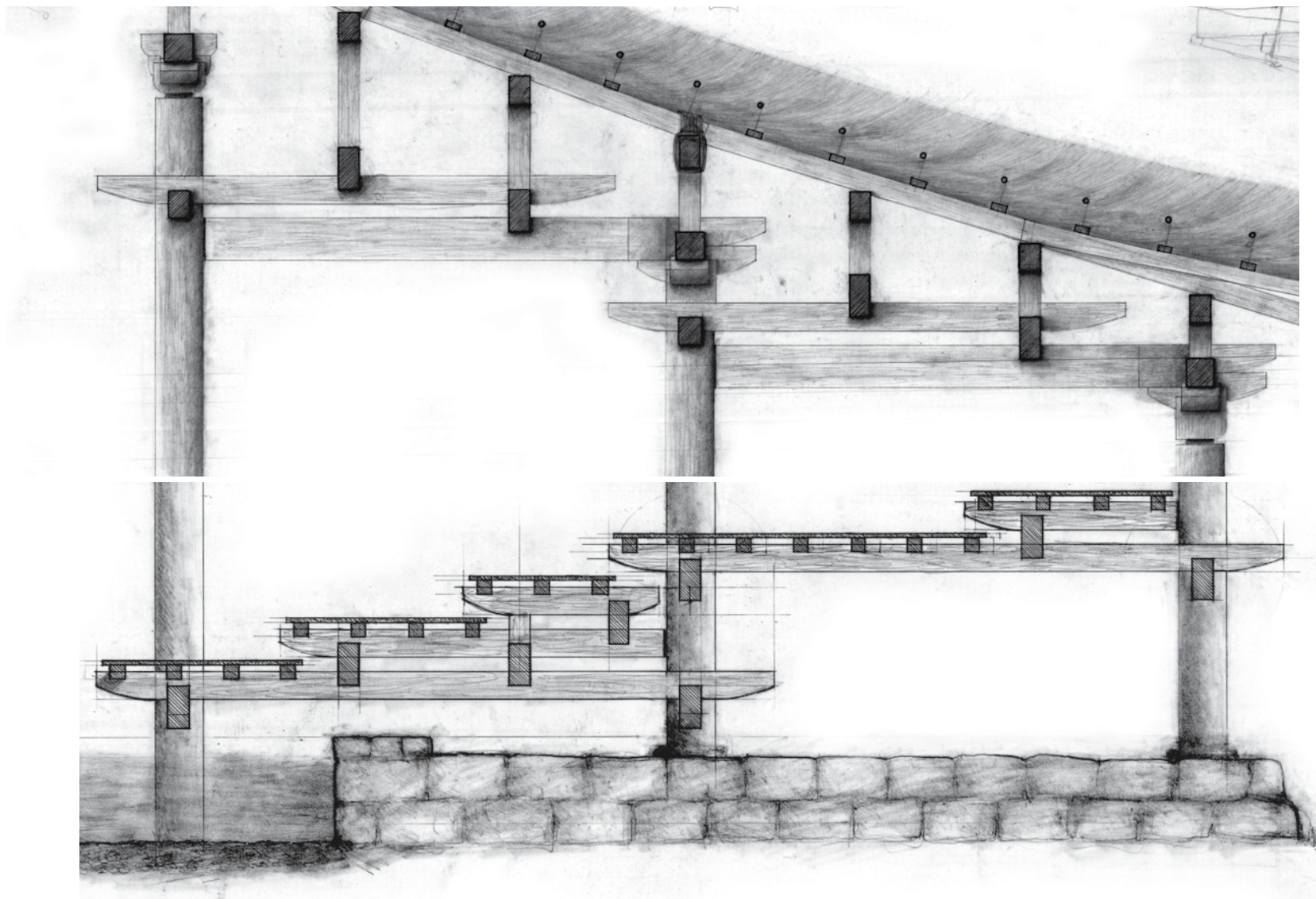


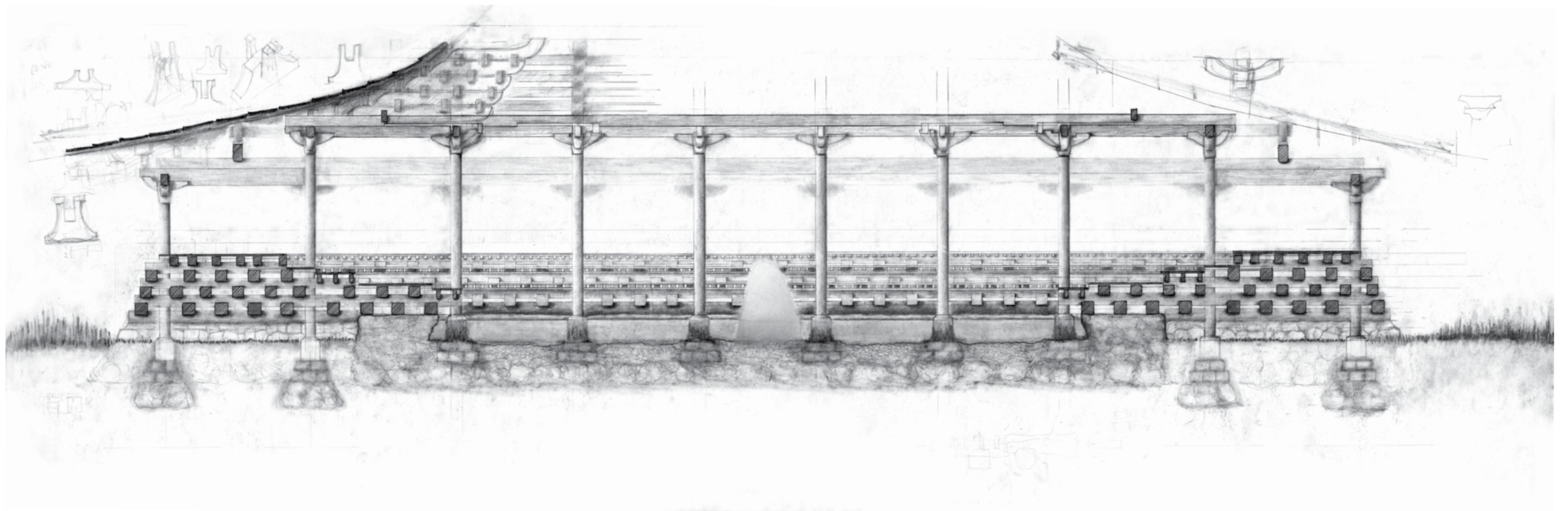


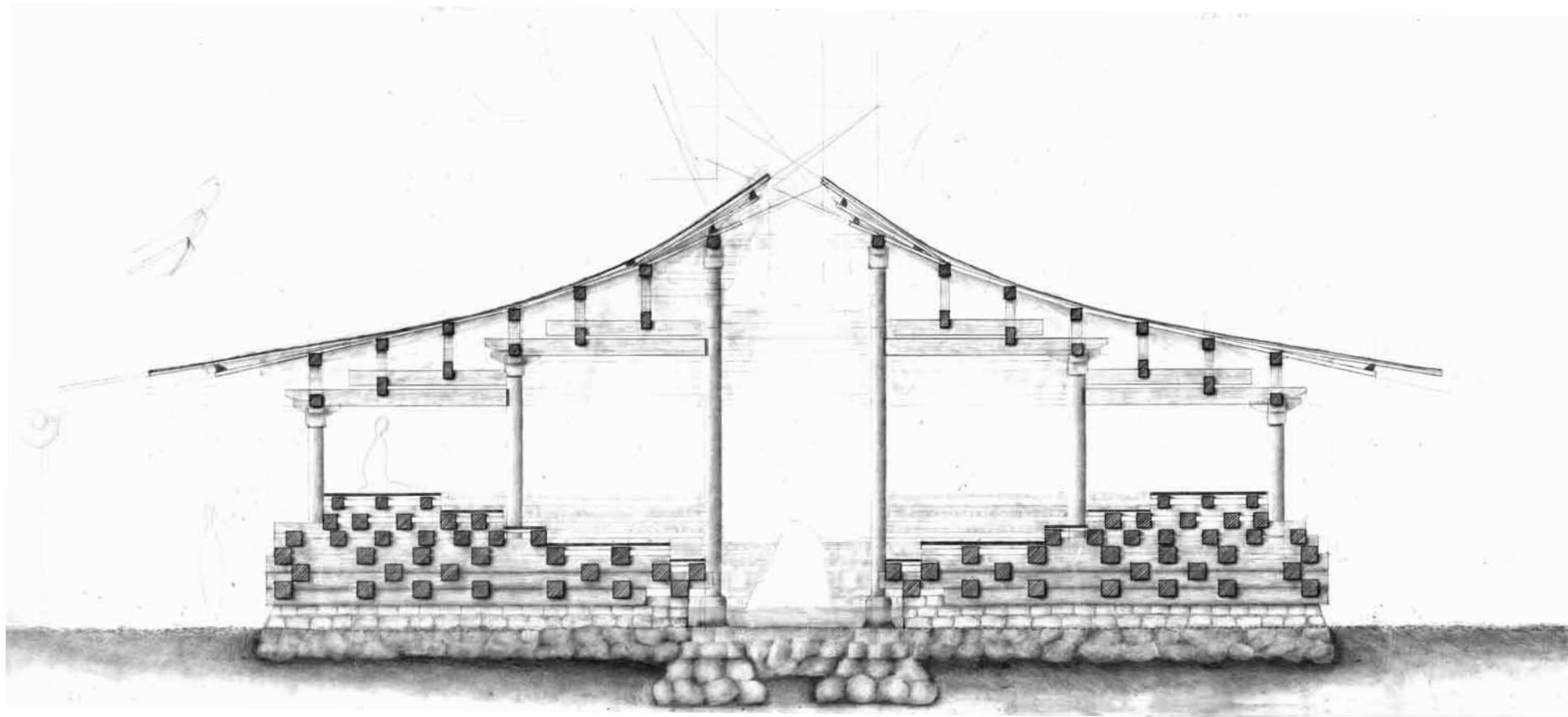












From the sky

The Rain came.

At that moment, the sky touched the ground.

It rained until we barely stood on the ground,

Barely saw the sky.

To the ground

The remnant of the rain stilled.

We sat by the pool, looked down to the sky,

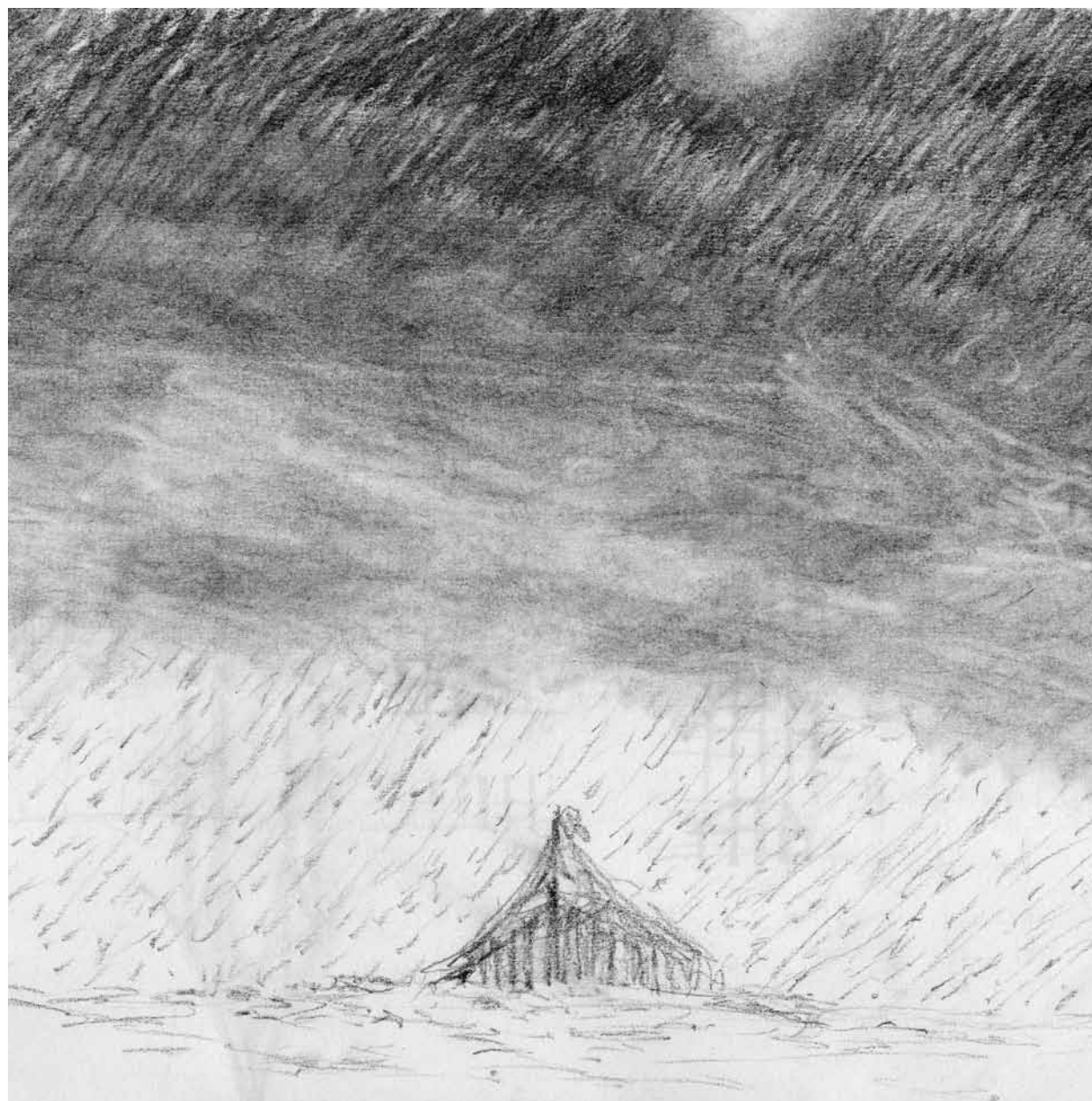
As if it captured the sky,

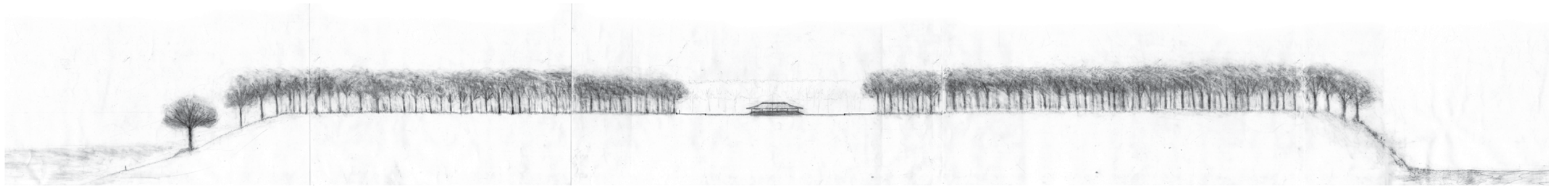
Reflected on the rain.

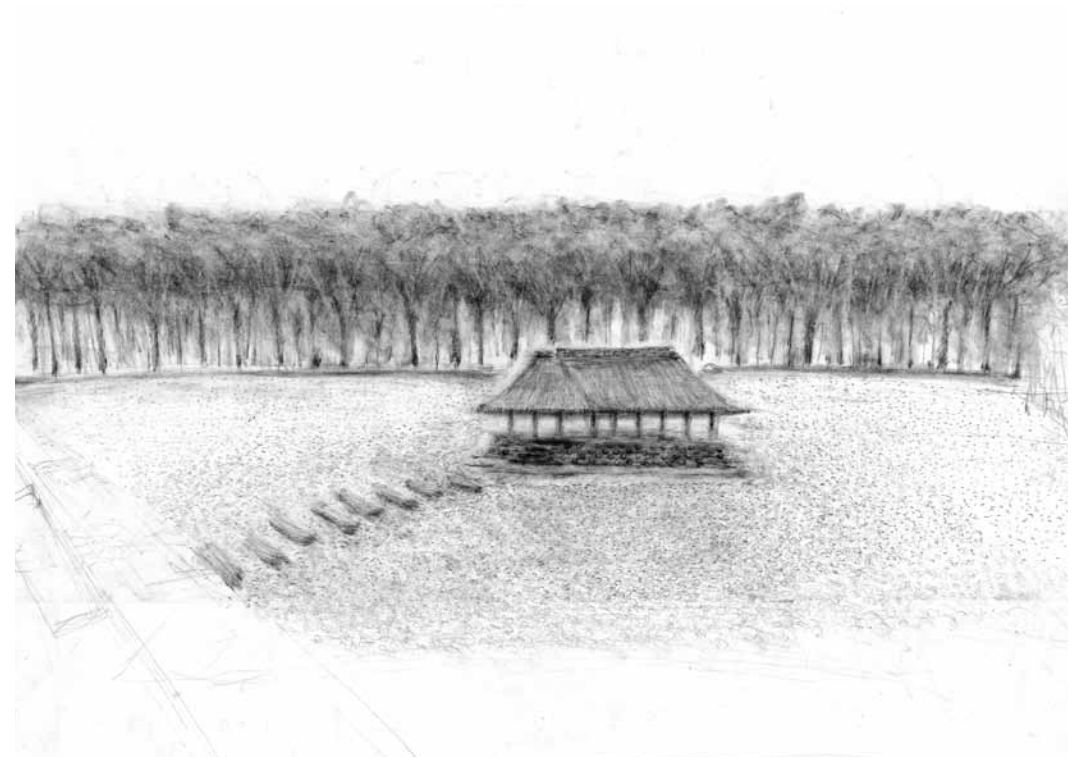


Elaborated shed
Spiritual shelter
Hermit's castle
Temple of the sky

Poetry of the rain



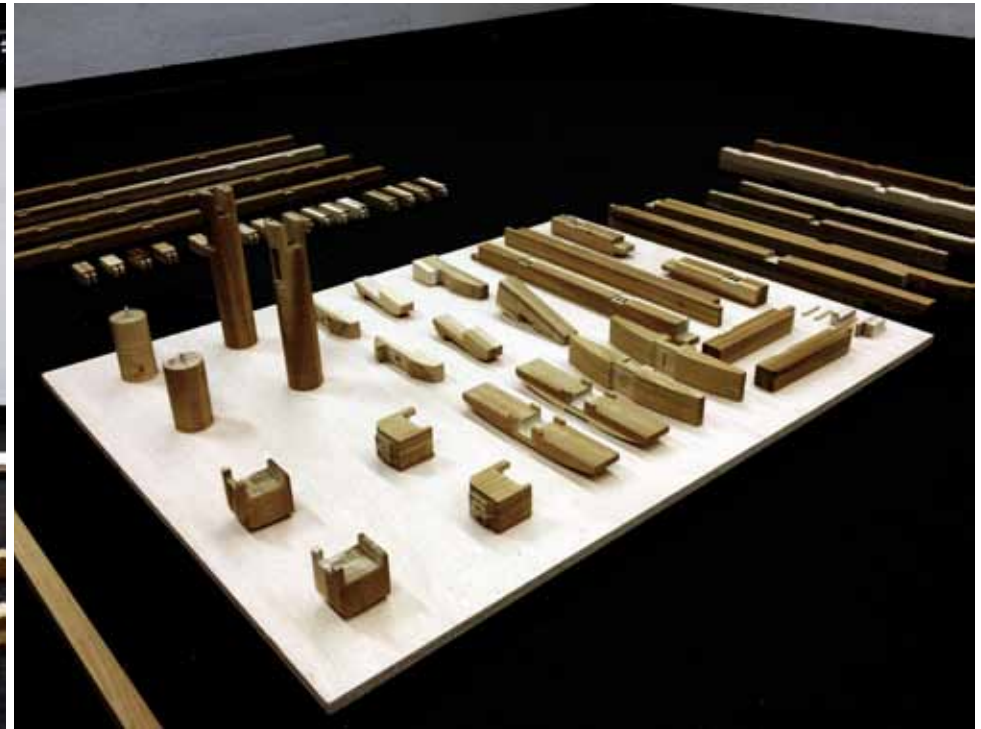


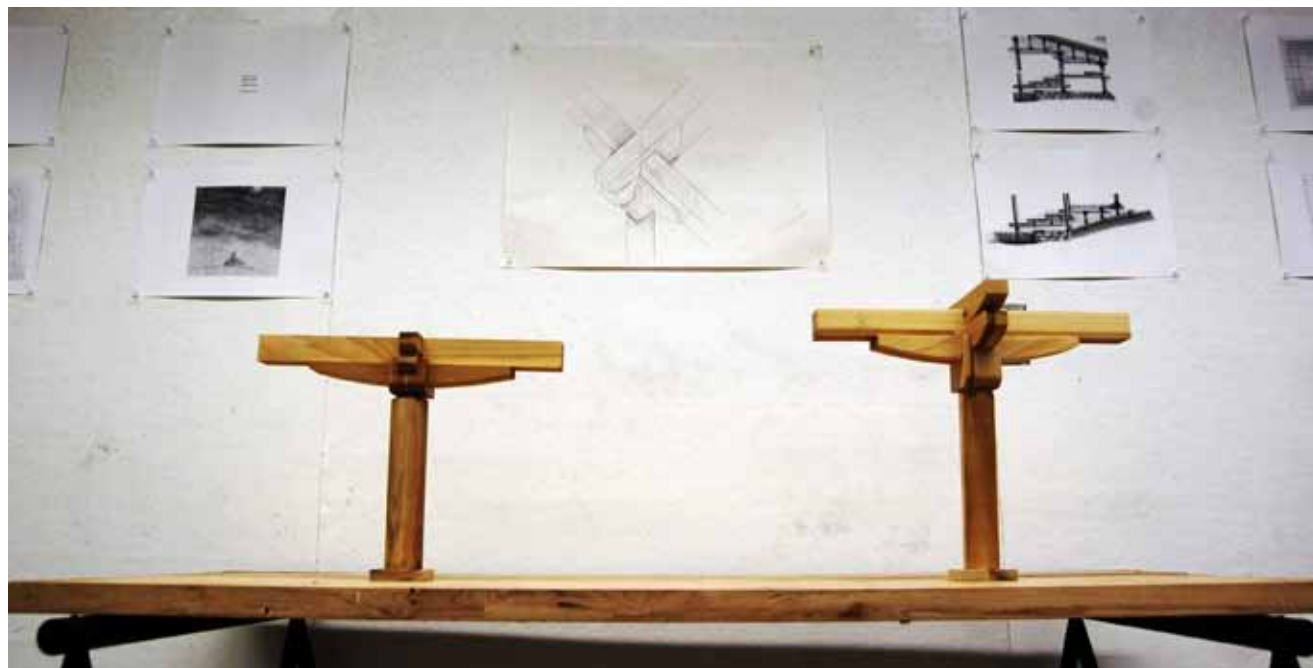




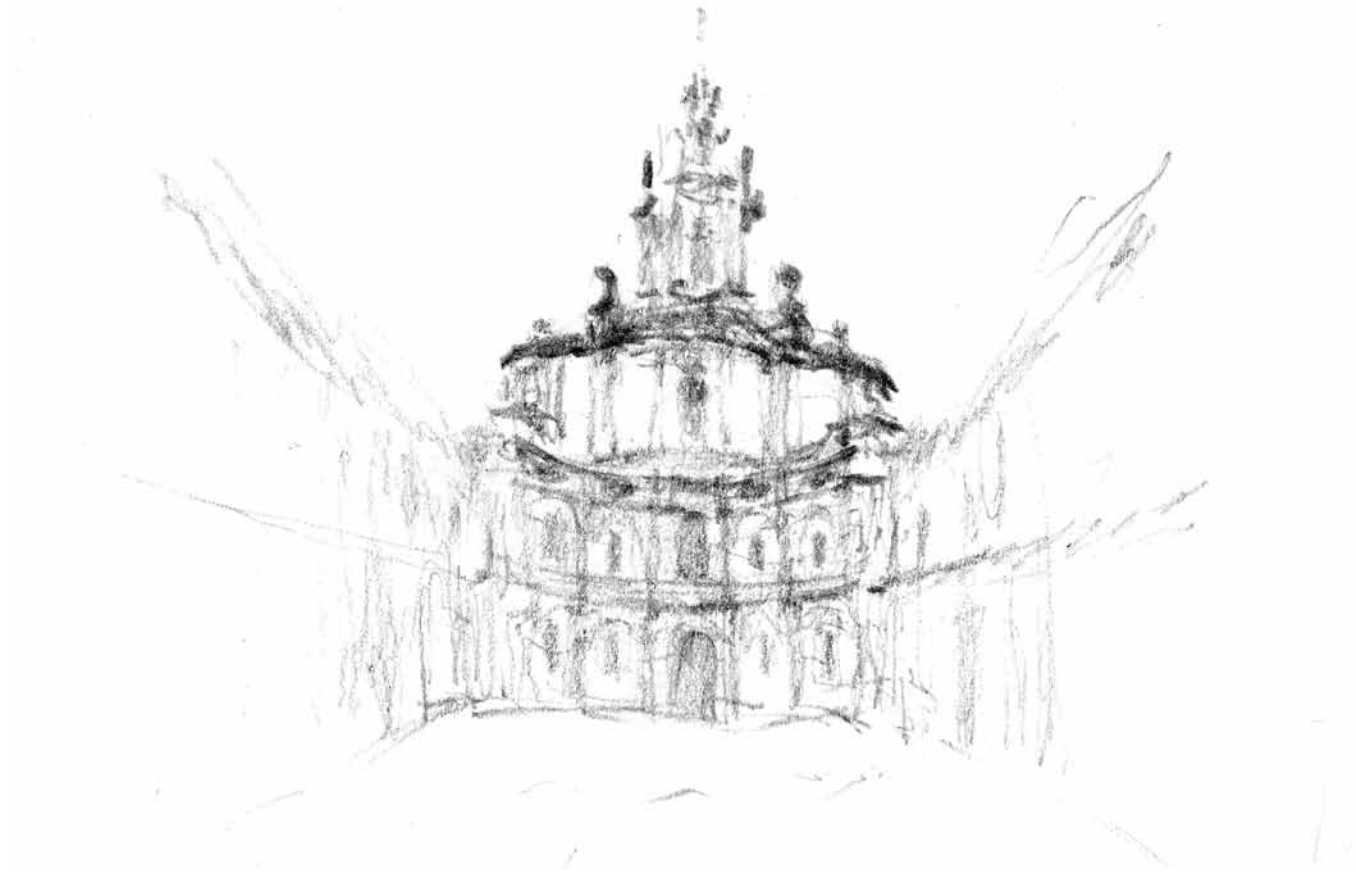
Appendix: Thesis Exhibition



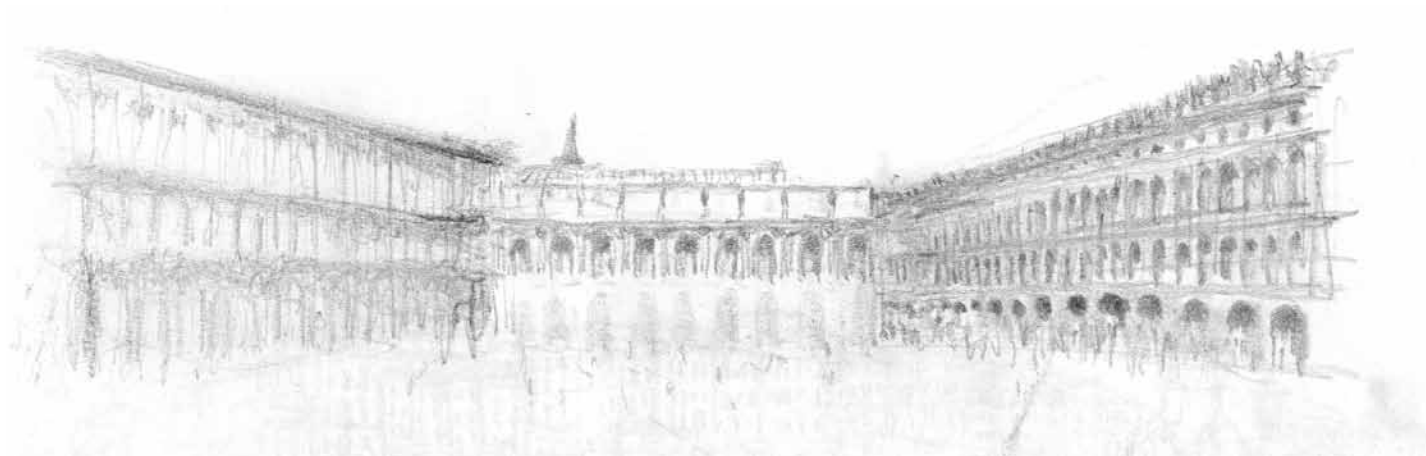




Appendix: Travel Sketches



Sant'Ivo alla Sapienza, Rome



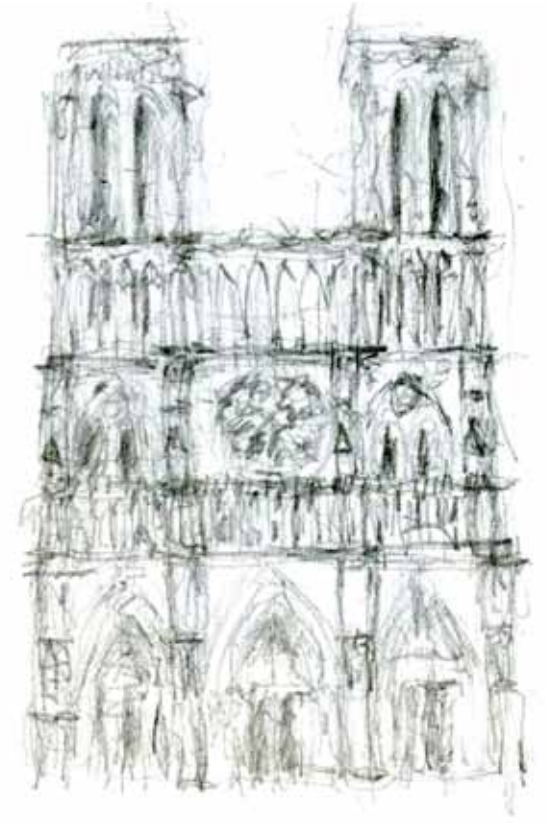
Piazza San Marco, Venice



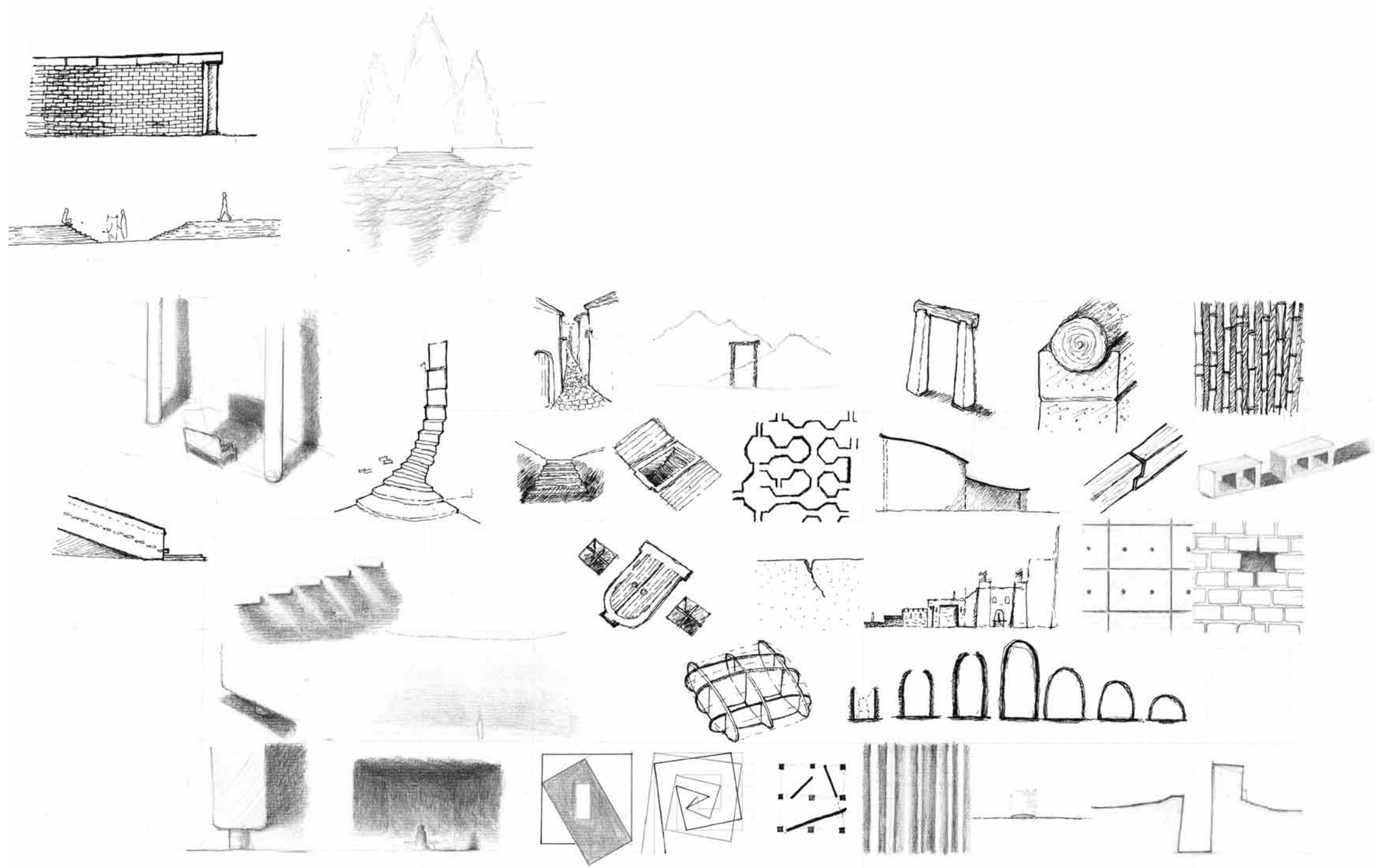
Bramante's Tower, Vigevano



Basilica di Santa Maria del Fiore, Florence



Notre Dame, Paris



100 theses: Riva san Vitale, Fall 2013

Bibliography

Brown, S. Azby. *The Genius of Japanese Carpentry: An Account of a Temple's Construction*. Tokyo: Kodansha International, 1989. Print.

Li, Jie. *Li Ming-chung ying tsao fa shih*. Taipei: Lien ching chu pan shih yeh kung sz, 1974. Print.

Tagore, Rabindranath. *Sadhana: The Realization of Life*. Kessinger Publishing, 1942. Print.