Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Personal information	
Name	Qianyi Wang
Student number	5100585

Studio		
Name / Theme	Architectural Engineering Graduation Studio	
Main mentor	Mo Smit	Circular neighborhood development and the involvement of communities within the design process
Second mentor	Tanya Tsui	Circular Built Environment
Argumentation of choice of the studio	My curiosity for making processes made me choose this studio. The focus of my undergraduate study is mainly the aesthetic aspect of architecture, therefore in the final year project, I would like to dig deeper into the pragmatical aspect of architecture. From the introduction and previous students' works, I can see the concern of aE studio for urgent questions in the world and the willingness to solve these questions through architectural interventions. That's also what I would like to achieve in this academic year.	

Graduation project	
Title of the graduation project	Sustainable tourism form in villages—Develop a building typology linking tourists and local residents making use of locally harvested bio-based building materials
Goal	
The ultimate goal of the research is to create a synergetic model for the villages through design. Villages eroded heavily by tourism often lose their attraction because of homogenization. In the synergic model, the original industry will not lose from the tourism development. Still, it will benefit from the sustainable development of tourism.	
Location:	Zhejiang, China
The posed problem,	1. Unsustainable cycle of self-built houses in Zhejiang rural area. 2. Pollution and waste caused by rice straw burning in Zhejiang. 3. Newly built houses aren't able to response to the local climate.
research questions and	How could a local material strategy making use of local agricultural residues (rice straw) adopting low-tech building methods contribute to the self-built houses in Zhejiang rural area in terms of construction ease, maintenance ease, affordability, thermal insulation performance, and aesthetic acceptance?

design assignment in which these results.	How could a local material strategy making use of local agricultural residues (rice straw) adopting low-tech building methods contribute to innovating the Zhejiang vernacular architecture?

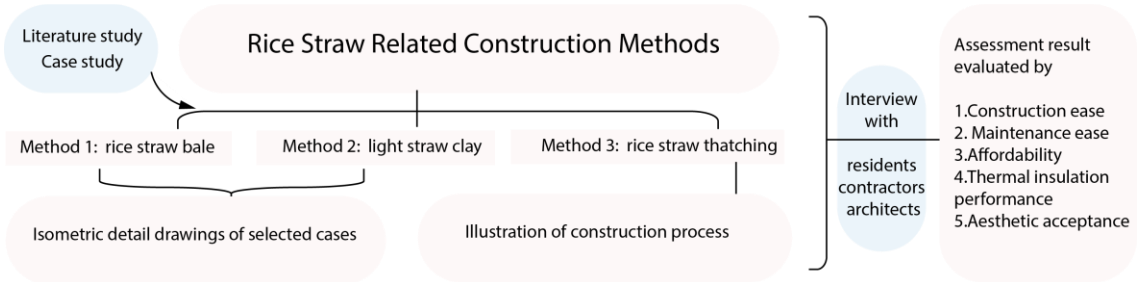
Process

This paper will focus on the possible application of rice straws in the field of residential architecture. It will evaluate the three rice straw related building methods to provide a basic understanding of the advantages and disadvantages of the methods when applied in Zhejiang province according to five criteria: construction ease, maintenance ease, affordability, thermal performance, and aesthetic acceptance.

The result will guide the design in the later phase.

Method description

In the research paper, both qualitative and quantitative research methods will be applied. The process is shown in the diagram below.



Literature and general practical preference

Supply chain of rice industry
Rice straw related construction methods: rice straw bale, light straw clay, rice straw thatching

Reflection

My graduation project closely followed the harvest theme in the studio theme, exploring the application of agricultural waste in the architectural field. In the later design stage, I will integrate harvesting energy and clean water to create a synergetic model that simultaneously develops tourism and agriculture.

Rice is the staple food of more than 50% of the world's population, most of whom are in developing countries. Rice production is expected to increase because of concerns about world food security. The research on reusing waste of the rice industry is beneficial to increase rice's added value. Then it is possible to encourage farmers to expand production and obtain greater economic benefits. On the other hand, the construction industry, which consumes much energy and causes much pollution should find more sustainable construction methods and materials. The architectural application of biobased material, including agricultural waste, can be a research direction.