西溪南 Xixinan
Rural Prototypologies

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Rural Prototypologies (Spring 2018)

The studio takes place in Xixinan village, a historic rural village near the Huangshan Mountains in Anhui province. While in the fall semester, students focused on urban analysis, socio-economic mapping, experience design, and programmatic architectural propositions for Xixinan, in this Spring semester, as an independent studio¹, we shift our focus to architectural form, typology, and tectonics to develop vernacular prototypologies in the rural village context.

Combining digital tools with an analysis of vernacular precedents and typologies, students will explore a ‘digital vernacular’ architecture. Vernacular elements and tectonics will be analyzed through the lens of digital insight and capabilities to arrive at new architectural permutations rooted in historic precedents. Utilizing digital form generating processes and feedback loops, students will develop a prototypology of a formal representation of digital vernacular.

Digital tools such as parametric modelling software and performance analysis tools will assist in form generation, refinement and evaluation. Form, material, structure and fabrication constraints are approached as interrelated elements, which are embedded in design through computational processes. More specifically, the projects will evolve in feedback with structural and environmental analysis ranging from solar radiation, to thermal capacities, acoustics, structural efficiency and fabrication. By utilizing generative design methods, we are aiming at the establishment of a rule-based feedback process through which various design solutions can be explored and simultaneously evaluated by how they perform. The design therefore of each intervention will be pursued through intrinsic capacities of the proposed system (typology, geometry, materiality, assembly logics, etc) in response to extrinsic environmental conditions (radiation, wind, pressure, loads).

This in-depth exploration of an architectural resolution for a digital vernacular prototypolgy in rural villages in China, should take into account the material ecology, environmental conditions, structural performance, digital fabrication, off-site and on-site assembly, with a view to possibly realize a 1:1 prototype on site in Xixinan during the Summer of 2018.

¹ Accordingly, this Spring studio will be conducted as an autonomous studio. New students are welcome. The technical, i.e., parametric design workshops (e.g. Grasshopper, Kangaroo, Diva, etc.), will be introduced gradually, and take into consideration the level of knowledge of students, also those without prior experience in parametric software or architectural coding.
Keywords
Digital Vernacular – Vernacular Precedents and Typologies - Parametricism - Morphogenesis - Artificial Design - Prototypologies

Orientation
Forme et type(s)

Language
English

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Website
https://ruralreturn17.wordpress.com/