Building Ecology

ARCH 575 (ET Elective, Fall 2023)

Credit: 3 semester hours
Instructor: Jong-Jin Kim 734-763-3518 (office) daylight@umich.edu
Time: Wed 8:30 – 11:30 am
Room: Room 3146 Art and Architecture Building (Old Wing 3rd Floor)
Office Hour: Wed 11:30 – 12:30 pm @ Room 1205B (By Appointment)

DESCRIPTION

This course introduces ecological principles in building design, and explores strategies and methods for designing biophilic and sustainable buildings. The concepts of building ecosystems and resource self-sustainability are introduced. The principles of the economy of resources, lifecycle design, and humane design are discussed, and the ecological factors associated with these principles are examined. Design strategies, methods and processes for meeting the people's biophilic need in built environments and increasing resource efficiency and self-sustainability of built environments are investigated. Methods of enhancing buildings' energy, water and food self-sufficiency are examined. Building on the design concepts and methods introduced in the lectures, a semester-long project of designing an ecological building and its subsystems will be conducted. As an outcome of the course, at the end of semester each student will propose one's own definition of "ecological building" and a design scheme that manifest it in a physical form.

INSTRUCTIONAL METHODOLOGY

A lecture will be given on a specific topic each week. All classes will be offered in person. The lecture presentation files will be uploaded on Canvas. Student-driven projects and case studies of recent designs of sustainable artifacts (artworks, public works, buildings or communities) that analyze their philosophies, concepts and strategies for sustainability comprise important pedagogy of the course.