Global Classroom

Fundamentals of Integrated Building Design

International guest lecturers from industry, the profession and academia

AE T480 CRN 34932 / AE T580 CRN 34933
Spring Term, 9:00-11:50 am, Thursdays URBN 348

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Fundamentals of Integrated Building Design is an introduction to the methodologies and tools used to govern energy, resources and environmental quality decisions for the design and construction of energy-effective buildings that respond to site specific environmental conditions. Techniques covered include preliminary design tools, assessment methods, protocols and good practice guides to provide a conceptual framework for the design of efficient buildings that consider both horizontal (interdisciplinary) and vertical (life cycle-related) integration. Students will work in teams on an innovative, carbon-free, resilient international competition project for Reinventing Cities https://www.c40reinventingcities.org/en/.

Learning Objectives

Students will demonstrate:

- the ability to understand the patterns of energy, light, air and water and their application to the design of a building through the development of integrated design skills;
- an understanding of the basic principles and appropriate application and performance of construction materials, products, components, and assemblies, including their environmental impact and reuse;
- an understanding of building assemblies and the principles of sustainability;
- the ability to assess, select, and conceptually integrate structural systems, building envelope systems, environmental systems and building service systems into building design;
- the ability to demonstrate the principles of environmental system design and the tools used for performance assessment – to include active and passive heating and cooling, solar geometry, daylighting, natural ventilation, indoor air quality, and solar systems.