THE NEW NEWBERRY

The Newberry Library has resided in Chicago for 125 years as an independent research library dedicated to the advancement and dissemination of knowledge. Deconstructing and reinterpreting its mission and core activities, while conceptualizing a new home for the Newberry, becomes a starting point for form generation applied to design solutions at many scales: a 21st century constructed object with net zero environmental impact.

Instructor: Dr. Vidar Lerum
Class meets: MWF 1PM-5PM
Credits: 6 hours
Max enrollment: 16 students

“The Newberry acquires and preserves a broad array of special collections research materials relating to civilization of Europe and the Americas. It promotes and provides for their effective use, fostering research, teaching, publication, and life-long learning, as well as civic engagement.”


catalog description
ARCH 573 Technology & Performance: Design of buildings and systems focusing on structure, enclosure, technology and performance. Integration of building materials, components and systems and their impact on the design, construction, and sustainability of buildings and architectural environments at a wide range of scales.

course description
With a focus on energy, materiality, and tectonic expression, students will explore the conditions and potential for environmentally responsible building designs that can make constructed contributions to a sustainable urban landscape. Students will use the Newberry Library as a source of inspiration and as a datum to reference designs of new objects and artifacts. The method is one of exploration through multiple iterations within a framework of four consecutive studio projects. Project one (site) and three (precedence) are group projects lasting two weeks each, with four competing teams. Project two (parts) and four (whole) are individual projects lasting 4-5 weeks each. Project and site to be developed at an urban scale as a linear development along an elevated rail line. Energy performance will be analyzed using a direct computational link established between an energy modeling program and digital three-dimensional models. Each student shall construct 3-4 physical models (tectonic detail, part, whole, site).

precedence
Henri Labrouste; Bibliotheque St Genevieve; Will Bruder: Phoenix Public Library.

texts
Snøhetta, Powerhouse One, 2013.
Our Mission

The Newberry Library, open to the public without charge, is an independent research library dedicated to the advancement and dissemination of knowledge, especially in the humanities.

The Newberry acquires and preserves a broad array of special collections research materials relating to the civilizations of Europe and the Americas. It promotes and provides for their effective use, fostering research, teaching, publication, and life-long learning, as well as civic engagement.

In service to its diverse community, the Newberry encourages intellectual pursuit in an atmosphere of free inquiry and sustains the highest standards of collection preservation, bibliographic access, and reader services.
On an early Monday morning students line up on the sidewalk outside the Saint-Genevieve library to get a seat at a desk in the great reading room. One of the finest public buildings of the nineteenth century, Saint-Genevieve has served the university and the public for 160 years. Writings and books from the Abbey of St Genevieve formed the initial foundation of its collections.

All the major functions of the library: entrance lobby, offices, archives, and reading room, are contained within an elongated massive volume measuring roughly 285 meters in length, with a transverse section 20 meters wide and 20 meters tall. Only the central staircase, including mechanical and other servant spaces, are positioned outside the main building form: to the north-east.

This building was designed from the inside out and the outside in - and that is a very important pair of phrases because most buildings are designed in different ways and for us to be talking about buildings that are compatible with this world, they have to be designed from the outside in without compromising the inside-out. That's quite important.

There was not too much talking about energy and green building or any of that stuff - but again you have to remember in 1990 when we conceived this building green was not the common nomenclature of - you just do it. We made it that.

When we started doing this building, we wanted to design a building that literally would not fit anywhere else. What I mean by not fit anywhere else, a building that was so site specific- to this latitude and this set of conditions and climate, that you could not take it away.

The main definition of a Powerhouse is a building that shall produce at least the same amount of energy from on-site renewables as the energy used for materials, maintenance, demolition and operation exclusive equipment (such as PCs, coffee machines etc.). In addition, the exported energy shall in average not have less quality than the imported energy.

This implies that produced and exported electricity can offset corresponding amount of imported energy for both electricity and thermal purposes, while produced and exported thermal energy can not offset imported electricity. The building shall also as a minimum fulfill all the requirements of the Passive House standard.

For the first Powerhouse projects, a realistic aim is achieving an energy balance including the energy use related to operation and materials, including maintenance. For later projects, the aim is that the energy use related to the construction phase and demolition also shall be included in the balance account.