A Community Internet Center:
Designing Physical Space to Address Digital Inequity

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ARCH 573 Course Catalog Description:

Design studio investigations 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. 6 credit hours. Prerequisite: Graduate standing in Architecture.

Studio Premise:

The United Nations has recognized **internet access** as a basic **human right**,[1] and for many people, internet connectivity is ubiquitous, seamlessly integrated into their daily life. However, more than 40% of the world's population lacks online access, and UNICEF estimates that 2/3 of the world's school-age children have no internet access in the home.[2] This "digital divide," between those with easy access and those without, is perpetuating social inequities across the world. A lack of internet access, and a resultant lack of digital literacy, equates to a lack of access to information, education, and job opportunities.

The project for this studio is to design a **Community Internet Center**: a public facility that provides local community members of all ages with easy access to digital resources, including the internet and computer hardware and software, offering educational, economic, and recreational opportunities for the local community. The building will serve as *information infrastructure*, with a program including classrooms, meeting spaces, tutoring spaces, offices, study carrels, and informal Wi-Fi lounges and gathering spaces, both interior and exterior. Given the intensity of electricity usage in such a facility, projects will incorporate building-integrated photovoltaic systems to offset building operational energy and reduce the overall carbon footprint.

The Community Internet Center will be designed as a **high-performance building** in two senses, quantitative and qualitative. While a *quantitative* approach is essential to ensure the architecture operates in efficient and environmentally-responsive ways over the lifespan of the building, we must also be concerned with *qualitative* performance: that is, how architecture affects people's daily lives, how buildings can engage and inspire the people who use them.

Studio Parameters:

In order to develop collaboration skills and enable a high level of depth and detail, students will work on the project in **teams of two**.

In consultation with the instructor and based on given parameters, each team will **select a site** for their project, anywhere on earth, and tailor the program to serve the local population. Emphasis will be placed on identifying underserved communities where internet access in the home is currently limited. The project will begin with intensive site analysis to understand the physical, cultural, and climatic contexts of the chosen site, represented in a series of maps and analytical diagrams, from which conceptual design directions will derive.

The Community Internet Center may be designed as a new building or an adaptive re-use of an existing structure. Each team will adjust the given program as appropriate for their site, with the expected range of project scales being from 5,000 to 50,000 square feet (or approximately 500 to 5,000 square meters).

The studio will focus on learning to design for **building performance**, especially energy, daylighting, passive solar principles, and building-integrated solar power. This will involve detailed development of the building envelope systems and attention to building form, materials, and construction details. Students will use energy- and daylighting-analysis software as an integral design tool to inform, test, and verify the development of the project throughout the process (prior knowledge of the software is not required).

[1] https://www.businessinsider.com/un-says-internet-access-is-a-human-right-2016-7
[2] https://www.unicef.org/press-releases/two-thirds-worlds-school-age-children-have-no-internet-access-home-new-unicef-itu