**A Sustainable Campus Proposal for Addition/Renovation of the Architecture Building at Lawrence Technological University (LTU)**

ARC4224 Sustainability Studio, Spring 2012.  
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Studio Critics: Ed Orlowski, RA, LEED, M.Arch, Assoc. Prof Ralph Nelson, M.Arch Assit. Dean  
EcoTech Advisor: Janice Grant,

“The concept behind the new wave of living laboratories is to create high-performance educational buildings that are immersive learning environments for sustainable technology and strategies.”

**Michael Cockram**

**Problem Description:** In order to address the problem of a lack of exhibition space, inadequate space for student project archive storage, and the lack of restroom space on the man level and lack of handicapped access to the lower level of the original architecture building on the LTU campus a new addition/renovation strategy is proposed. The faculty member met with the University Architect and discussed possible campus projects suitable for the studio class. A new gallery/storage space is proposed as an infill of the exiting courtyard space at the entry. It will abut the existing building on three sides and therefore reduce the extensive thermal loss through the old glass curtain walls facing the courtyard which have poor thermal performance and thus improve the thermal performance of the existing building by reducing the extent of the exterior perimeter enclosure.
Green Building organizations USGBC and ASHRAE have also advocated adaptive reuse and renovation as a sustainable model for buildings due to the reduction of materials and systems by reusing existing buildings. The new enclosure will be designed using ASHRAE’s high performance building code and increase energy conservation while allowing for ample daylight. The design should account for the need for indirect or controlled natural light. The advantages and system and general behavior of the system should be evident in design. This new architectural element will serve as a new entry element for the existing architecture building and add a significant new identity to the building.

The Mid century Modernist attributes of the existing building should be considered in the design of the addition. The existing glass exterior walls are proposed to be retained to allow for daylight to flow into adjacent spaces and provide a visible connection to the gallery space from the adjacent spaces.
Program Spatial Summary:
Main Level Exhibit Space: 6,000 SF.
This space is used for exhibits and should have flexible and portable/movable partitions and lighting.
Conference room/crit space: 800-1,000 sq.
This could be on the main level or elevated above on a mezzanine level approx. 10-12' above the main level. One public stair min. and a possible catwalk. The space should be flexible to accommodate a class review or a conference room seating for 12-13 for a meeting or seating for 18 for a crit session.

Subgrade level.
Exhibition storage archive: 5,700 sf.
Secured space for student work and external artists and their exhibits. The space should be open with storage rack/shelves and a digital file archive of work. The space should be adequately illuminated.
Mechanical Electrical room for addition.
A space for new equipment 300 sf.

The existing A210 Architecture gallery space needs to be reconfigured for new uses. The space should be studied for new uses including the following, new classrooms, crit space, new faculty or admin. offices, and corridor circulation connecting the building wings. As a sustainable characteristic when possible the space design and the fitments and fixtures should be flexible with movable partitions to accommodate a variety of configurations. Through out the existing building new day lighting solutions should be considered, skylights or light tubes. The design should account for the need for indirect or controlled natural light with daylight shared from the new gallery space.
Students:

Jesse Brown, Jason D’ Agnolo, Megan Enzer, Anthony Garbarino, Nathan Jemison, Michal Lomaszkiewicz, Michael, Mollica, Theodore Politis, and Jacqueline Yamana.

Preamble:

In files attached are the student studio work of their resulting project proposals for the Spring 2012 term at LTU in the College of Architecture and Design. We hope this will encourage others to expand our campus initiatives for green construction and stimulate ideas for new projects on campus. The work documents architecture design studies, energy analysis, daylight analysis, and LEED studies as well as the development of structural HVAC and building construction systems to renovate selected elements of the existing building and the new addition.