

UNIVERSITY of NOTRE DAME
School of Architecture

DESIGN VI/ ARCH 41121 (& AME 47431)

BUCCELLATO STUDIO SPRING 2016
Environmental Stewardship through Interdisciplinary Research and Design

**PROJECT 3:
THE NOTRE DAME LINKED EXPERIMENTAL ECOSYSTEM FACILITY (ND-LEEF)
PHASE 2 ENVIRONMENTAL RESEARCH & EDUCATION CAMPUS**

A COMPREHENSIVE MASTER PLAN REVISITED

PROJECT 3 - PARTS:

1. Understanding Context: Site Analysis and Precedent Research (Project 3a)
2. **New Campus Master Plan & Comprehensive Building Design** (Project 3b)

Through your rigorous analysis of the site, the project brief, and project program, along with initial precedent analyses, you are well prepared to commence the design of a master plan for a **model sustainable research, education, and outreach campus** for ND LEEF at St. Patrick's County Park. Your Master Plan is expected to consider all primary stakeholder goals and values in the context of recent "development" above the current Phase I research watersheds, and your broader vision for the future of ND LEEF, including the incorporation of any additional, necessary infrastructure to support and enhance research, outreach, and education at this unique facility. Once you have established a guiding Master Plan for the Research and Education campus, you will undertake the *comprehensive design* of a single building on your campus; in this case, the building that incorporates both public and private functions and serves as a symbolic structure for the larger campus and its architecture.

Per the course abstract, the primary objective of this project (which is meaningfully related to the projects you have recently undertaken this semester) is to **consider the critical relationship between performance and place**; and meanwhile continue to advance our understanding and appreciation for the many different ways that our buildings must perform.

Using your knowledge of the specific ways that climate and context – the simultaneous consideration of locality, function, resources, program, and culture – influence building design *and* performance, you are expected to integrate and promote durable and sustainable principles of architecture and urbanism at every opportunity. From the guiding Master Plan and the treatment of the site, to the design of the buildings and the materials and methods employed in their construction and operation, the buildings that you propose must meaningfully acknowledge both the surrounding site, context, and primary user groups, and meanwhile become enduring and didactic examples of next-generation, high performance academic research and education buildings.

Approaching the design of 'high performance buildings' (see project brief for expanded list):

1. Identify dominant issues and influential circumstances, both cultural/ practical and physical
2. Assess ways that stakeholder concerns, traditions, and customs can be meaningfully maintained and incorporated into a new series of structures located at ND-LEEF/ St. Patrick's Park.
3. Establish criteria for measuring success – what are our 'performance' criteria:
 - a) Physical building performance (energy consumption)
 - b) Materials and methods (durability and long-term cultural and physical sustainability)
 - c) Site impact, land use strategies
 - d) Novel infrastructure and sustainable technologies (renewable energy) solutions

4. Site evaluation/ high-level building optimization analysis (location, orientation, influences)

Once again, you will continue to advance our knowledge of high performance building design through collaboration with your engineering studio-mates. Together, you will work in pairs to incorporate feedback from prevailing building energy analysis tools into your building design process, *from the very beginning stages of design (i.e., Master Planning)*. Through on-going collaboration, the project teams will arrive at an optimal building design, one that performs exceptionally well in its context, for its purpose (client/cultural) and that exceeds industry-standard energy performance goals (total annual energy consumption) for the building type. This tight, iterative process is meant to encourage the design teams to consider, from the outset of the design process, the impact of building orientation, massing, materiality, etc., on operating energy use, and enable informed decision-making about design compromises and trade-offs.

Please refer back to page 2 of the Course Syllabus for overarching project objectives and pedagogical goals.

Your successful completion and presentation of Project 3b requires the following (at minimum):

Campus Master Plan (1:100) & Area Plan (incl. relationship to Park proper)

Primary Building Site Plan

Primary Building Plans and Elevations

Site and Building Section(s)

Typical Wall Section and “Bay” Detail

Predicted Energy Performance for Comprehensive Building Design (Campus Administration & Outreach Building)

Quantitative Predicted Energy Usage from Renewable Resources

Process and Technical Documentation of Collaborative Iterative Design (see below)

Your final presentation should include drawings (i.e., site elevations and sections, perspectives, vignettes, etc.) that can support – or substantiate – your comprehensive building design solution within the broader proposed campus design. You will need to be able to describe how well your proposal advances the vision of the primary stakeholders and furthermore, how your campus is a model of high performance, environmentally sensitive and sensible design.

Additional drawings that can be used to enhance our understanding of your particular approach to the design and character of the campus, architectural character, construction methods, sustainable land use and infrastructure strategies, additional amenities, and so forth are *strongly* encouraged. **You are expected to include explicit evidence of your design development with your engineering collaborator in your final presentation.**

**** ALL presentation drawings must be delineated by hand and *skillfully rendered*** as part of a single, thoughtful and carefully conceived composition. Other presentation modes and media may be proposed and pursued with the *advance* approval of the instructor.

MASTER PLAN (ARCH Lead)

MONDAY, FEBRUARY 29 at 1:30 pm

MID PROJECT REVIEW (ARCH Lead):

WEDNESDAY, MARCH 16 at 2:00 pm

TECHNICAL DESIGN MEMO (ENG Lead):

FRIDAY, MARCH 18 at 2:00 pm

TECHNICAL DESIGN MEMO (ENG Lead):

FRIDAY, APRIL 01 at 2:00 pm

FINAL PROJECT REVIEW (ARCH Lead):

WEDNESDAY, APRIL 21 at 2:00 pm