
Education in the Ecotone
Bucknell University – New Academic Quadrangle

(ek'tōm): Transitional zone between two biological communities or ecologies

As STEM education develops, its place within the educational biome is shifting. Other educational communities, much like ecologies, must contend with a growing neighbor. Is STEM an adversary, entirely disparate, or a potential symbiote? These ecologies will inevitably impact one another, but the outcome does not need to be left to nature. If they have designs for STEM's future in their ecosystem, institutions must set the stage accordingly. Bucknell University is one such institution that sees valuable synergy between STEM and the social sciences. In order to capitalize on that synergy, Bucknell created the ecotone between these communities.



The educational mission of Bucknell University holds interdisciplinary research approaches in high regard, and STEM integration is on the frontier of this pursuit. Within the New Academic Quadrangle Bucknell and Stantec have physically brought together the Departments of Engineering and Education in the Academic East building, and the Social Sciences Department in the Academic West building. This proximity will enhance existing relationships and foster emergent education-engineering collaborations.

The relationships between interior and exterior public space, classroom and laboratory, were designed for fluid interaction of users. The exterior court and main level functions of each building act as a conduit for multiple streams of pedestrians, while strategically placed entrances encourage cross-traffic. The vision for Bucknell was to create an interdisciplinary, collaborative, biophilic learning environment that exemplifies Bucknell's Human Health and Wellbeing Initiative. Through the interconnections of educational, research and communal spaces, both inside and out, this goal is achieved.



Interior public spaces based on the Bucknell typology “the hearth” (informal learning lounges supportive of social and educational networking) are interspersed throughout the building. Classrooms and laboratories open to wide “mixing areas” instead of corridors and are

juxtaposed with hearth spaces to further facilitate collaboration and dialogue amongst faculty and students. Extensive use of glass partitions and expansive exterior windows blur the line between academic and physical ecologies, fostering a heightened level of curiosity between departments.



Through site response and interior planning, the New Academic quadrangle symbolizes increased focus on team and project-based learning while integrating the theme of human health and wellbeing across research activities and curriculum. By implementing flexible designs each classroom can meet the needs of various departments, promoting cross-disciplinary interaction. Laboratories and classrooms are easily adapted between teaching or research functions and encourage enhanced exploration by

allowing a wide range of programming options. Through these design strategies, interior and exterior spaces enhance the interconnecting relationships between each discipline through overlapping shared spaces.

For Bucknell, the move out of the isolated classrooms and laboratories and into the space of the ecotone is significant. In the words of a Bucknell researcher, "We hope to establish 'communities of transformation', where faculty from departments across departments across the University will collaborate to create more integrative curricula.", and this hope is coming to fruition. Recently, Bucknell was awarded a \$2 million NSF grant for the Department of Engineering to seek innovative ways to create curricula that coalesce the Engineering and Liberal Arts programs.



WHAT WORKS

- Shaping a metaphorical language that signals a new way to think about what spaces are, how they serve the community. *Ecotone. Biome. Symbiotic. Ecosystem. Hearth.*
- Blurring and dissolving actual and mental boundaries about how and where learning happens: setting the stage for synergy; enabling fluid interaction of users; fostering emergent relationships.
- Designing for the future, for an interdisciplinary, collaborative, biophilic learning environment and for communities of transformation.