



Sustainability Fellowship
Accounting for the “Embodied Carbon”
Developing a Methodology for Tracking the GHG Footprint of
Construction and Demolition on Campus – Lexington, KY

The impacts of construction and demolition on organizations’ carbon footprints are significant; however, it is rare for them to be accounted for in campus greenhouse gas (GHG) inventory reports. Likewise, there are few if any examples of organizations reporting the historical “carbon debt” of their campuses. Since the embodied carbon of campus buildings is currently invisible, it’s impossible for decision makers to adequately take them into account (or for campus stakeholders to ask them to).

UNH is interested, however, in adding it to the Campus Carbon Calculator™ and CarbonMAP tools—the most-used tools for campus carbon accounting—in order to support and encourage institutions across North America to incorporate these considerations into their climate action plans and strategies. The University of Kentucky (UK), a leader and innovator in campus sustainability, has agreed to serve as a test-bed/case study for this analysis. Additionally, experts from the Unlimited Carbon Assistance Network (U-CAN) will lend their experience to the development of a standard methodology.

Together, UCAN, UK and UNH seek a UNHSI Sustainability Fellow to spend the summer of 2016 working with them to develop a robust, scientifically credible, and replicable methodology for doing this analysis

Specific deliverables will include:

- A documented methodology for accounting for GHG emission’s related to building construction and demolition, including all references and assumptions;
- A report outlining the carbon “debt” footprint—including building construction—for UK; and
- Potentially: a prototype of a version of the Campus Carbon Calculator that includes construction and demolition emissions from campus buildings.

At the end of the summer this Fellow will have gained an in-depth expertise in institutional carbon accounting, produced a well-developed body of research that could be presented or written about/published in multiple academic and/or professional settings, and made a meaningful contribution to campus sustainability as a whole.

Location: Lexington, Kentucky

Time commitment: 40 hours per week, June 6-August 19, 2016

Compensation: \$6,000 stipend

Desired Qualifications:

- Enrollment in an undergraduate or graduate degree program: mechanical engineering, architecture, or a related field.
- A working knowledge of the process for designing and constructing buildings.
- A working knowledge of campus master planning.
- Familiarity with existing carbon accounting and/or life-cycle analysis protocols and methods.
- Familiarity and comfort with Microsoft Excel.
- Creativity, self-reliance, and a passion for new concepts.
- Previously published research desirable, but not required.

UNHSI Sustainability program eligibility:

Graduate students, exceptional undergraduate students, and recent graduates are eligible. We will encourage, but not require, an academic sponsor or reference for each fellow, and where possible we will ask that course credits are awarded.

Supervision, Training, Mentoring and Evaluation

This fellow will receive supervision from Jason Delmabre of U-CAN and Shane Tedder of UK, as well as mentoring and professional development offerings from UNHSI.

Fellows will be expected to participate in three MANDATORY events:

- A three-day, two-night orientation in Durham, NH, June 1-3rd. Lodging and food are provided; Fellows are responsible for any associated travel costs.
- Midterm project presentations to UNHSI staff, faculty and relevant project partners (can be done remotely).
- A summative evaluation and feedback session at the end of their placement.

Apply by February 23rd at <http://www.sustainableunh.unh.edu/sustainability-fellows>