

SE 2050 COMMITMENT TO NET ZERO
EMBODIED CARBON
ACTION PLAN | 2025



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OUR PLEDGE & COMMITMENT

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Cover Image & Contents Image:

*Ecofibre North American Headquarters
Georgetown, Kentucky
LEED Platinum Certified*



Image:

Boone's Ridge Wildlife Center
Pineville, Kentucky



Brown + Kubican (BK), a 50-person firm located in Lexington & Louisville, Kentucky, is hereby signing on to the SE 2050 Commitment Program. We support the vision that all structural engineers shall understand, reduce, and ultimately eliminate embodied carbon in their projects by 2050.

BK has consistently sought, from its inception in 2000, to elevate structural engineering. We do this by striving for excellent, thoughtful, and leading edge design engineering that serves as empowerment to success for our clients, contractors, owners, and end users.

This constant goal leads us to the next big challenge—reducing and eliminating embodied carbon in our designs. We do this for one simple reason—it's the right thing to do. It is our responsibility in our profession to do our part in elevating design by striving toward the goal of zero embodied carbon.

We therefore commit Brown + Kubican to take the following steps which are part of the SE 2050 Commitment Program:

- Annually henceforth, we commit to reporting an Embodied Carbon Action Plan (ECAP) and permit the ECAP document or form be made public on the SE 2050 website.
- Within one year and annually henceforth, we commit to submit data to the SE 2050 project database in a collaborative effort to understand embodied carbon in structural engineering projects and to set attainable targets for future projects.

We look forward to joining this coalition and industry effort to achieve the goals of the SE 2050 Program.

Best regards,

Adam Ray, PE, SE

Principal | Brown + Kubican, PSC
aray@bkse.net



01 INTRODUCTION

We exist to Empower and Inspire...

Founded in 2000, Brown + Kubican (BK) is the largest structural engineering firm in Kentucky, offering design, analysis, and investigative services with engineers licensed in 30 states and territories. Our mission is to develop creative, forward-thinking solutions that optimize structural performance while maintaining cost and resource efficiency. Driven by our core values—Excellence, Integrity, Responsiveness, Team Empowerment, and Added Value—we ensure these principles guide every aspect of our work. By focusing on quality assurance, seamless coordination, and detailed construction documents, we minimize costly changes and deliver lasting value to our clients, owners, and communities our projects serve.

Leading with Green Innovation...

We are excited to introduce the BK + Green Sustainable Design Committee, a new initiative dedicated to advancing environmentally conscious structural engineering practices. This committee will integrate green technologies and sustainable design principles into every project, furthering our commitment to a more sustainable built environment.



Lisa Vagts, PE

Embodied Carbon Champion
Lexington, KY



Stephen Thompson, EIT

Embodied Carbon Champion
Louisville, KY



Adam Ray, PE, SE

Principal
Lexington, KY



Spencer Price, PE

Project Engineer
Lexington, KY



Auburn Mattingly, EIT

Project Engineer
Lexington, KY



George Stanley, EIT

Design Engineer
Lexington, KY

02 EDUCATION PLAN

Brown + Kubican (BK) has a strong tradition of fostering learning opportunities for our young engineers through regular in-house sessions. Our BK Tech Sessions and BK University webinars provide a platform for continuous growth, bringing together employees from our Louisville and Lexington offices to collaborate, share knowledge, and enhance their technical expertise. These sessions are recorded and made accessible to all engineers across our firm through our computer network.

Our goal is to integrate embodied carbon topics into these sessions, offering valuable resources and best practices to help employees understand its impact on our work. We will incorporate key concepts, policies, and

strategies for reducing the carbon footprint in projects. Additionally, these recorded sessions will become a core part of our onboarding program, ensuring that future employees are equipped with the knowledge to make sustainable decisions from day one.

GOALS	IMPLEMENTATION	STATUS
Create an internal embodied carbon interest group within our firm	We have created the BK + Green Sustainable Design Committee to implement our SE 2050 commitment goals.	Complete <input checked="" type="checkbox"/>
Create Embodied Carbon specific BK University Sessions	To educate our employees on embodied carbon, our commitment to SE 2050, and our company's goals and objectives. Our BK University sessions are recorded and made available for current and future employees to watch at any time.	Ongoing <input type="checkbox"/>
Distribute our annual ECAP to all employees	Every year the BK + Green Sustainable Design Committee will create and distribute our annual ECAP to the firm so that all employees will know and understand our upcoming goals and progress.	Ongoing <input checked="" type="checkbox"/>
Attend continuing education webinars and workshops on carbon footprint reduction	Resources available include the sustainability session track at the NASCC Steel Conference held in Louisville, KY this year, SE 2050, Carbon Leadership Forum (CLF), and others.	Ongoing <input type="checkbox"/>
Make additional learning resources available to all employees	Created a Sustainability folder on our firm's computer network to fill with articles and information.	Complete <input checked="" type="checkbox"/>

03 ADVOCACY

Brown + Kubican (BK) is committed to transparently communicating our efforts to reduce embodied carbon. We have publicly declared our membership in the SE 2050 Commitment, reinforcing our dedication to sustainable structural design. By actively engaging with material suppliers, we aim to drive low-carbon solutions and innovation. Additionally, we will educate clients on the benefits of reducing embodied carbon in our projects, highlighting how sustainable practices can reduce environmental impact. Through advocacy with external organizations, we will champion broader industry adoption of sustainability measures, driving meaningful change beyond our firm.

GOALS	IMPLEMENTATION	STATUS
Publicly declare our firm as a member of the SE 2050 Commitment	We have designed a logo for our internal BK + Green Sustainable Design Committee and proudly announced our SE 2050 commitment across all social media platforms and our company website.	Complete <input checked="" type="checkbox"/>
Engage with structural material suppliers	Meet with local concrete manufacturers to assess their current carbon footprint and explore collaborative strategies for improvement, integrating sustainable solutions into our mix designs.	Ongoing <input checked="" type="checkbox"/>
Describe the value of SE 2050 to clients	We will educate and engage our clients on the importance of reducing embodied carbon in our projects. By offering material comparisons and recommending more sustainable alternatives, we can help integrate lower-carbon solutions into the building system during the proposal and schematic design phases.	Ongoing <input type="checkbox"/>
Advocate for sustainability measures with external organizations	Our employees actively engage with the community through various volunteer roles across diverse organizations. We are dedicated to raising awareness about embodied carbon within these groups, helping to educate university students, professional organizations, building code councils, architects, and fellow structural engineering firms throughout our region.	Ongoing <input type="checkbox"/>

03 ADVOCACY



brownkubican Brown + Kubican is proud to announce our commitment to SE 2050: Net Zero Embodied Carbon by 2050! To support this initiative, we have established the BK+Green Sustainable Design Committee, dedicated to driving sustainable solutions in our projects. Participating in SE 2050 is another way we uphold our core values—Excellence, Integrity, Responsiveness, Team Empowerment, and Added Value—in every aspect of our work.

#BKGreen #Sustainability #SE2050
#CommittmenttoNetZero #ECAP



BK + Green Sustainable Design Committee

Brown + Kubican is proud to announce our commitment to SE 2050: Net Zero Embodied Carbon by 2050! Leading this initiative at BK are our Embodied Carbon Champions, Lisa Vagts and Stephen Thompson, alongside the BK + Green Sustainable Design Committee, dedicated to driving sustainable solutions in our projects. Participating in SE 2050 is another way we uphold our core values—Excellence, Integrity, Responsiveness, Team Empowerment, and Added Value—in every aspect of our work.



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04 REPORTING PLAN

Brown + Kubican (BK) is committed to advancing sustainability by beginning to calculate embodied carbon and reporting two projects, one from each office, to the SE 2050 database in our first year. We will utilize the Embodied Carbon Order of Magnitude (ECOM) tool available on the SE 2050 website to estimate the embodied carbon of the structural materials in our projects. Our primary goal this year is to develop a standardized methodology for calculating material quantities and embodied carbon at each project submittal phase for Life Cycle Assessment (LCA) stages A1-A3. Additionally, we plan to explore various LCA software tools to identify the most effective solution for our firm's needs.

GOALS	IMPLEMENTATION	STATUS
Create a plan to measure and report embodied carbon in our projects	We will utilize the Embodied Carbon Order of Magnitude (ECOM) tool to estimate the embodied carbon and assess the Global Warming Potential (GWP).	Ongoing <input checked="" type="checkbox"/>
Submit 2 projects to the SE 2050 database	We will submit one project from our Lexington office and one project from our Louisville office.	Ongoing <input checked="" type="checkbox"/>
Research Life Cycle Assessment (LCA) software	The BK + Green committee will research several embodied carbon estimation programs to see which fit best into our firm's needs.	Ongoing <input checked="" type="checkbox"/>

05 REDUCTION STRATEGY

Brown + Kubican is committed to systematically reducing embodied carbon by setting clear short-term (<1 year) and long-term reduction goals. Our initial efforts will establish a strong baseline for a more comprehensive strategy, positioning us as industry leaders in driving meaningful reductions. We aim to integrate embodied carbon considerations throughout the entire project lifecycle—from design to construction to the building’s lasting performance. By continuously refining our methodologies, collaborating with local industry representatives, and using resources from SE 2050 and other industry initiatives, we strive to set impactful reduction goals.

TIMELINE	GOALS	IMPLEMENTATION	STATUS
Short Term (<1 year)	Update Specifications	We will update our specifications to include embodied carbon performance criteria to establish an understanding of the local performance in today’s industry.	Ongoing <input checked="" type="checkbox"/>
	Talk to Manufacturers	We plan to meet with local concrete manufactures and steel mills, discussing their carbon reduction goals and how its impacted by our structural designs.	Ongoing <input checked="" type="checkbox"/>
	Require EPD’s	By requiring EPD’s, we can systematically begin to prioritize low-carbon materials.	Ongoing <input checked="" type="checkbox"/>
Long Term	Schematic Design Material Feasibility Studies	Introducing a material comparison at the schematic phase can be a straightforward addition to design discussions without requiring major changes while upholding the client’s needs.	Ongoing <input checked="" type="checkbox"/>
	Embodied Carbon Assessments	Building a preliminary carbon footprint assessment into our project fees during early design and revisiting the actual carbon impact will allow us to determine where we stand as a firm in accuracy and refine our strategies for more sustainable structural solutions.	Ongoing <input checked="" type="checkbox"/>
	Conscious Design Choices	We will make conscious design choices, avoiding over-conservatism or selecting unfavorable sustainability choices for the sake of convenience, and instead strive to balance safety, resilience, and sustainability with mindful optimal designs.	Ongoing Forever <input checked="" type="checkbox"/>

06 INTEGRITY

Built on a Foundation of Integrity...

As we continue to make strides in sustainability and climate action, Brown + Kubican is proud to highlight one of our core values—Integrity—through our Embodied Carbon Action Plan. We understand that our work directly impacts the safety, health, and welfare of the public. Our commitment to integrity ensures that every project we undertake is executed with the highest standards of honesty, fairness, and ethical responsibility. Each member of our team is expected to uphold these principles, ensuring that we consistently act as faithful agents to our clients, employers, and the profession.

Integrity is not just a core value; it is the foundation upon which we build trust—both with our clients and the public. We are dedicated to performing our work with professionalism, within our areas of expertise, and in strict adherence to legal and industry standards. Our responsibility to the public is paramount, and we will not compromise on our ethical principles, even in the face of external pressures or conflicting interests. By holding ourselves accountable, educating our clients and partners, and advising them with objectivity, we will continue to uphold the trust that has been built over the years and ensure that we are always working toward a sustainable and ethically responsible future.



Image:

*UK Gray Design Building
Lexington, Kentucky
Featuring a Structural Canopy*



LEXINGTON

546 E. Main Street
Suite 100
Lexington, KY 40508

(859) 543-0933

LOUISVILLE

8900 Greenway Commons Pl.
Suite 201
Louisville, KY 40220

(502) 749-2061

www.brownkubican.com

Image:

*Boone County Public Library
Walton, Kentucky
Featuring Solar Panels*