SE 2050
Embodied Carbon Action Plan
2024

SK&A®
Structural Engineers

Building upon a 64-year legacy of positively impacting the world around us through innovative design, SK&A Structural Engineers is honored to support the SE 2050 Challenge in a coordinated industrywide initiative aimed at reducing embodied carbon in the construction industry.

In early 2022, SK&A identified this initiative as an opportunity to make material contributions in the protection of our environment and launched our in-house Embodied Carbon Committee. This committee's immediate directive was to study the national SE 2050 Commitment Program and communicate its mission and vision to firm leadership. In August 2022, SK&A became a signatory of the program, committing our support of substantive embodied carbon reductions in the built environment, and specifically in the design and construction of structural systems by the collective structural engineering profession.

We embrace the vision of the SE 2050 program and recognize our responsibility to understand the impacts of our work on the environment. Several of our recent projects have achieved sustainability goals, including buildings in Washington, DC's Navy Yard, and at the Pike and Rose development in North Bethesda, MD. Additionally, our Embodied Carbon Committee actively studies embodied carbon in our work and offers resources and learning opportunities to our staff. SK&A continues to research advances in sustainability practices, materials, and methods, as we strive to serve our clients, deliver on design goals, and positively impact the communities where we live and work.

We look forward to collaborating with other firms in the SE 2050 program as we, together, work towards ever-improving industry best practices in the stewardship and protection of our surrounding communities and the natural environment.

Sincerely,
SK&A Structural Engineers

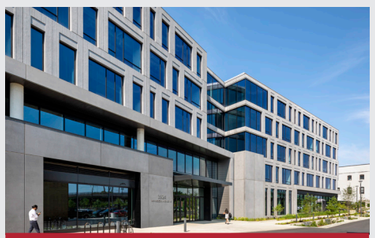
Scott B. Stewart, PE, SE
President and Managing Principal

About SK&A

Established in 1960, SK&A has a long history of delivering superior client-focused engineering services for a diverse array of projects throughout the Washington Metropolitan region, and beyond. With offices in Potomac, Maryland, and Washington, DC, SK&A offers a full suite of structural-related consulting services, including analysis, design, repair, restoration, testing, and inspection, as well as building enclosure and waterproofing consulting.

Our region leads in the international effort to "go green," with Washington, DC having been awarded the first "LEED Platinum City" in the world in 2017. SK&A has also had the privilege of designing over 50 LEED buildings in the last decade.

88 Employees



39 Professional Engineers

50 + LEED Projects

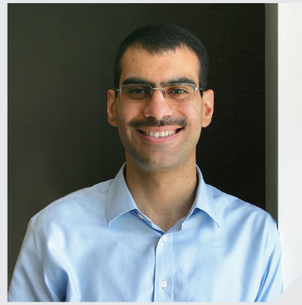
Embodied Carbon Committee

SK&A's Embodied Carbon Committee was formed to study embodied carbon in our work and educate the firm on what we can do to reduce our impact. The members are actively engaged in embodied carbon initiatives, new materials and methods, and broad education that can be used to assist our clients in meeting their goals of reducing embodied carbon in the construction industry.

Sara Zaman, PE
Embodied Carbon Reduction Champion and Project Manager

James Chavin-Grant, PE, SE, CDT
SK&A Committee Lead and Project Manager

Scott Kabat, PE
Associate



Ahmed Al Rahmani, PhD, PE
Assistant Project Manager

Zachary Shugart, EIT
Structural Engineer II

Hakan Onel, PE, SE
Senior Principal

Josh Woolcock, PE, LEED AP
Principal

Education Plan

As structural engineers, our work deeply encompasses embodied carbon. Therefore, it is imperative that we understand our significant part in reducing, and ultimately eliminating, embodied carbon in our structural designs.

During our firm's second year of actively working towards this initiative, education of the fundamentals has been and continues to be our focus. The series of company-wide seminars listed below have been presented to the firm in the last two years and are intended to be repeated and further developed in the coming years to continue to build our collective knowledge and understanding:

- A Lunch-and-Learn meeting to cover our participation in the SE 2050 Commitment Program and the essential details of embodied carbon.
- A seminar to educate the firm on the basics of a life cycle assessment.
- A session covering type IL cement and CarbonCure, with the understanding that these are becoming common in our projects.

These fundamental seminars will continue to be given on an as-needed basis. A library of recorded content is available to all staff and will be periodically updated with fresh content from internal and external resources. Also, onboarding for new hires includes a briefing on our ECAP progress and goals. Lastly, our firm's monthly internal newsletter continues to feature an "Embodied Carbon Corner" – short educational content that provides our staff with resources and reminders related to our embodied carbon goals.

Our firm has used this past year to develop our knowledge base of embodied carbon, learn about impacts on industry standards, and develop and communicate firmwide initiatives and modifications to specifications moving forward. Representatives of our firm have also joined and engaged with our Regional DC Hub of the Carbon Leadership Forum.

Knowledge Sharing

A crucial means of sharing knowledge is through teaching. As such, we aim to provide seminars for external organizations. Our webinar on "The Transition to Net-Zero" for the AIA-DC chapter was well-received. Additionally, we participated in a panel for the Christopher Kelley Leadership Development Program in April of this year to educate young architects on embodied carbon and other sustainable design practices. We will also continue to reach out to a broader audience by sharing pertinent information, such as lessons learned and project highlights, on our company website and LinkedIn page.

Reporting

A baseline for project comparisons is one of the most important tools that the industry is seeking at this time. Some generalized baselines exist but more specificity is needed. To facilitate this effort, SE 2050 developed a central database to collect all pertinent information about completed projects.

SK&A has submitted four projects to this database this year, and an additional two life cycle analyses will be performed internally to augment our internal firm data and to assist in training our staff. A firm-wide database is planned to be produced for local comparison.

Reduction

SK&A intends to take a multi-pronged approach to reducing embodied carbon in our work. Where appropriate, a wood structural system will be encouraged as an option. We will also study the effects of different framing systems and column spacings to give ourselves and clients an idea of where "carbon savings" can be had. We recognizer that it is vital for these discussions to happen early in the design phase.

In an effort to build our internal resources, we will start requiring submissions of environmental product declarations (EPDs) in our specifications. These will be used to develop in-house baseline, standardized embodied carbon quantities for the types of buildings that we typically design.

Advocacy

The movement towards net-zero embodied carbon cannot advance significantly without proactive promotion. The entire design and ownership team must align their efforts toward the shared goal to be able to make the necessary impact.

Part of our efforts will be encouraging our clients to pursue options that inherently have less embodied carbon. Such considerations will include designing with smaller and more consistent column bays, recommending wood framing, and advocating for adaptive reuse, renovations, and strengthening in lieu of complete building demolition where possible. Going forward, our project proposals and communications with our Architect and Owner clients will provide options such as the above where possible to encourage selections with lower embodied carbon potential.

Since announcing our acceptance of the SE 2050 challenge, we have presented at the AIA-DC DesignDC symposium. We also plan to coordinate other presentations, when possible, to both architects and other structural engineers.

Lessons Learned

This past year, we have been drawn to our community of professionals dedicated to this important cause and have been reminded that each of us is capable of seeking out guidance and taking effective steps to advance and fulfill our goals. While we appreciate that we have much to learn, we are optimistic about our contributions as we meaningfully discuss the future. We look forward to building upon our knowledge base and pushing forward the movement to eliminate embodied carbon from our work.

Contact Us

Amidst the global concern about climate change, structural engineers have an opportunity to be part of the solution. At SK&A, we are pleased to positively contribute to the protection of our natural environment through our ongoing commitment to SE 2050, diligent efforts within our Embodied Carbon Committee, and plans to further educate ourselves on this topic. We are also dedicated to providing valuable resources to our clients and working collaboratively to ensure a sustainable future for generations to come.

The SK&A team members assisting with the SE 2050 initiative include Sara Zaman, James Chavin-Grant, Hakan Onel, and Josh Woolcock. Please do not hesitate to reach out.

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