



STRUCTURAL
ENGINEERING
INSTITUTE



EMBODIED CARBON ACTION PLAN



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ENGINEERS



COMMITMENT LETTER

October 21, 2022

KAI Hawaii, Inc., a 40 person firm located in Honolulu, HI, 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.

Our firm's mission is to apply and develop the science/art of structural engineering to contribute to the health, safety, and well being of society. This mission is made tangible daily through the application of structural materials to build, maintain, and repair buildings and infrastructure in our community. However, the embodied carbon of these materials particularly the greenhouse gas emissions associated with producing them has come into focus recently as a major contributor to global warming. As stewards of both our local and global environment, we take seriously our responsibility to understand the impacts of our designs and help steer our industry toward solutions that will help stabilize the global climate and preserve the rich biodiversity of our shared home.

We therefore commit KAI Hawaii to take the following steps which are part of the SE 2050 Commitment Program:

- Within six months and 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.**
- 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.

Sincerely,

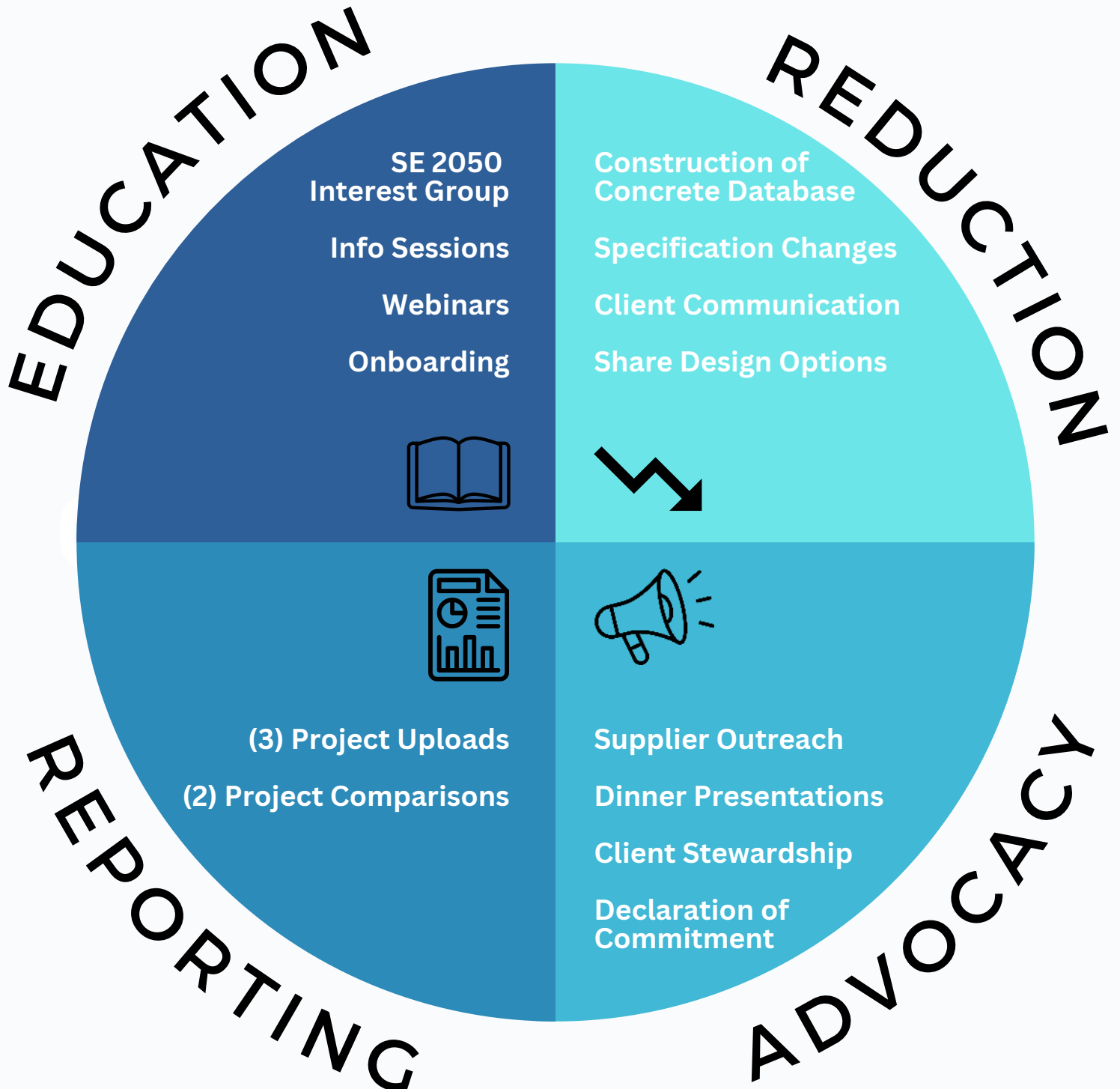
A handwritten signature in black ink, appearing to read "Ken K. Hayashida".

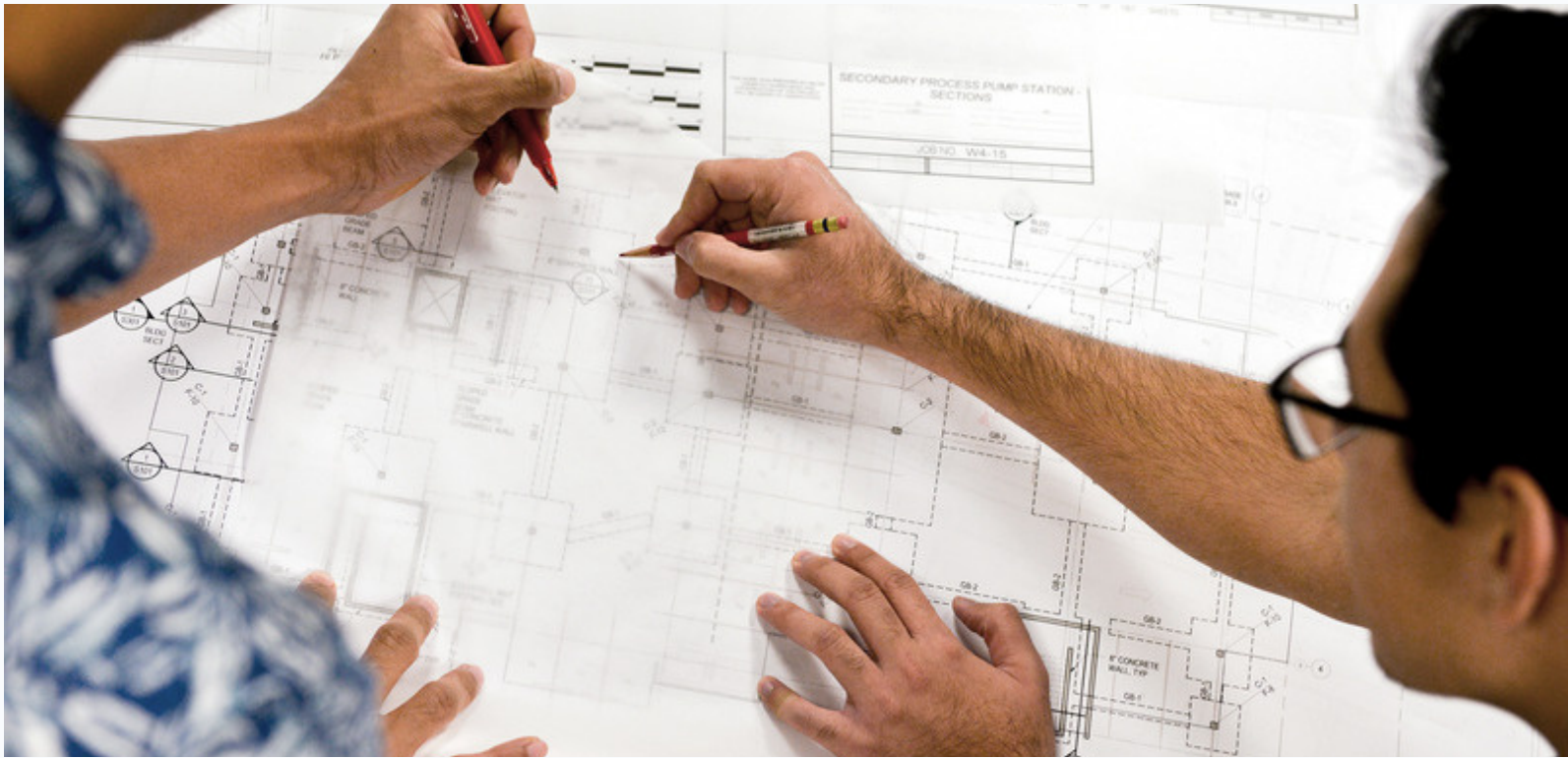
**Ken K. Hayashida, President
KAI Hawaii, Inc.**



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ACTION SUMMARY





EMBODIED CARBON INTEREST GROUP

The KAI SE 2050 Committee meets biweekly to develop and achieve the goals of this ECAP. Where appropriate, committee members collaborate with co workers outside of the group.

FIRM WIDE PRESENTATIONS

Firm wide presentations on embodied carbon were given in December 2022 and April 2023. At least two firm wide presentations will be made each year going forward.

EMBODIED CARBON WEBINAR

A webinar will be presented, and a recording will be made available to all current and future KAI employees.

ONBOARDING

During onboarding, we will present all new staff with the SE 2050 Commitment Letter and Program. We will also share the ECAP and recorded embodied carbon webinar as introduction material to the topic.

EMBODIED CARBON CHAMPION

Eric Borchers is KAI Hawaii's Embodied Carbon Reduction Champion. He is a member of the SEI Sustainability Committee and SE 2050 Leadership Team and leads KAI's internal SE 2050 Committee.

SPECIFICATIONS

We will review our standard specifications for concrete and update them to include embodied carbon performance goals. We will do this for both public sector and private sector standard specifications.

CONCRETE DATABASE

We have created a database of concrete mixes submitted by contractors on KAI-designed projects to inform the specification updates. We will continue to populate the database with newly submitted mixes to reach at least 100 mixes of various strengths and structural uses.

DESIGN OPTIONS

We will present concept-level structural system design options with embodied carbon estimates alongside structural material quantities to our clients for at least one project to bring embodied carbon into the early design conversation.





MATERIAL SUPPLIER ADVOCACY

We have engaged in conversations with local ready mix concrete suppliers and the local concrete organization, Cement and Concrete Products Industry of Hawaii.

PUBLIC DECLARATION OF COMMITMENT

KAI's participation as an SE 2050 Signatory Firm will be shared on the company website, and our ECAP will be shared on social media.

DESCRIBING THE VALUE OF SE 2050 TO CLIENTS

We have shared our status as a Signatory Firm with individual architectural and developer clients and will present to architecture offices on embodied carbon.

LOCAL SEA0H DINNER MEETING

We presented about embodied carbon and concrete at the Structural Engineers Association of Hawaii (SEA0H) March 2023 dinner meeting and prepared a paper on embodied carbon and the local structural material supply chain intended for the SEA0H Convention in September 2023.

PROJECT COMPARISONS AND ANALYSIS

Of the (3) projects submitted to the SE 2050 database at least (2) will be of similar project types so that embodied carbon data can be analyzed and compared.

PROJECT UPLOAD TO THE SE 2050 DATABASE

We will be submitting (3) projects this year to the SE 2050 database. We have also begun a study of the most appropriate LCA Tools to use for our reporting.

