



EMBODIED CARBON ACTION PLAN 2025



UH West Oahu
Creative Media Facility

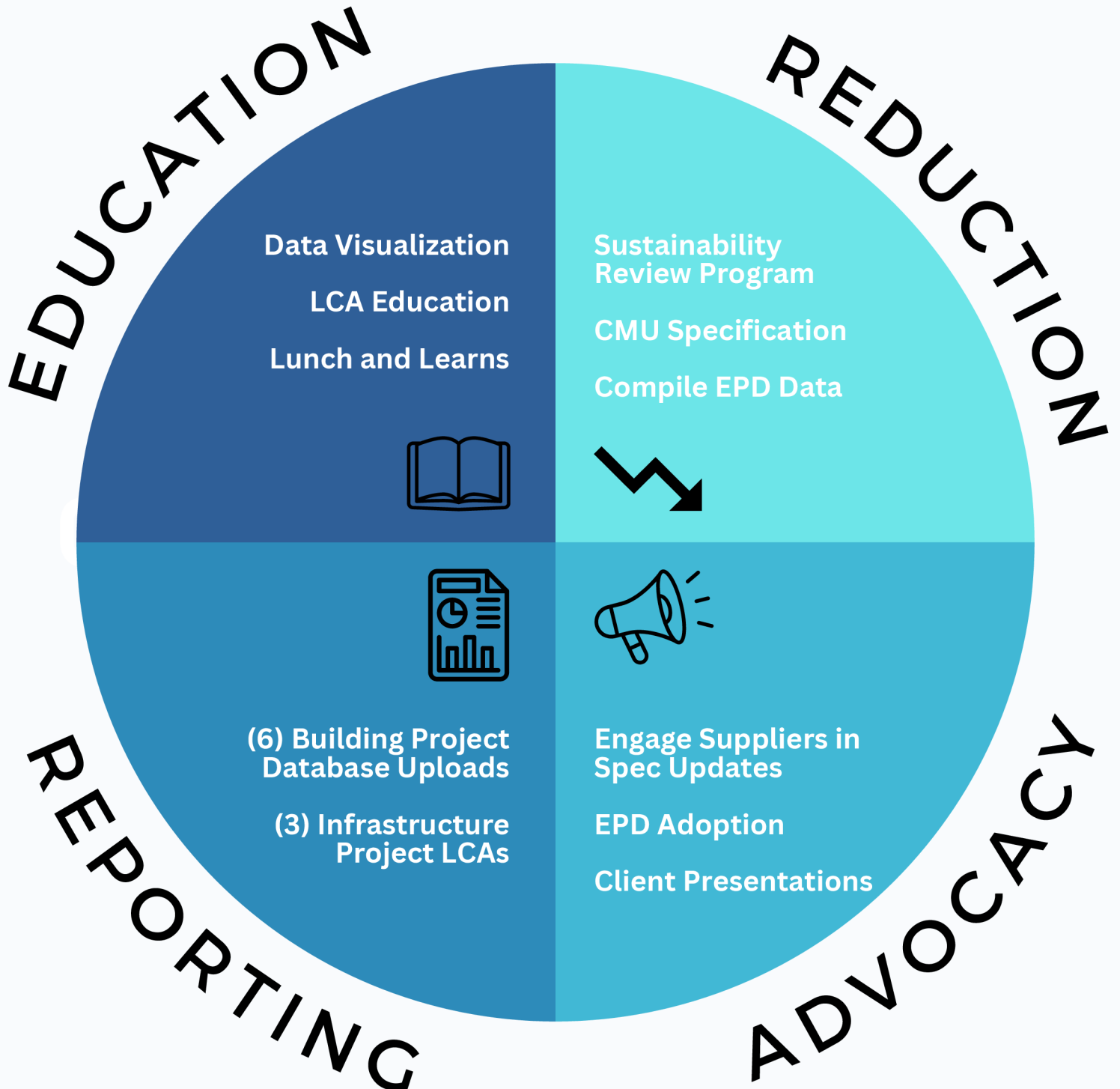


STRUCTURAL
& FORENSIC
ENGINEERS



STRUCTURAL
& FORENSIC
ENGINEERS

ACTION SUMMARY





Campbell High School, HI

EMBODIED CARBON CHAMPION

Ryan Hobson is KAI Hawaii's Embodied Carbon Champion in 2024.

2024 YEAR IN REVIEW

✓ **DATA VISUALIZATION**

Graphs and figures from Concrete Database have been started and will be continued this year

✓ **LCA EDUCATION**

Presented in-house training session for Tally, but was not recorded

✓ **FIRM WIDE PRESENTATIONS**

Hosted (2) In-office presentations

DATA VISUALIZATION

Present updated facts and figures related to SE2050 database and KAI uploaded projects

LCA EDUCATION

Record tutorial on Life Cycle Assessment (LCA) using Tally and method for implementing Hawaii-specific embodied carbon intensities for concrete.

LUNCH AND LEARN

Host (1) in office lunch and learn summarizing year in review Host (1) in office technical session for engineers



Mendel Elementary School, Japan



Wo Fat - Adaptive Reuse, Honolulu HI

SUSTAINABILITY REVIEW PROGRAM

Continue efforts this year to develop guidelines based on ACI 323 for in-house sustainability analysis based on building square footage.

CMU SPECIFICATIONS

Update specifications and general notes to aid consistent and efficient use of CMU assemblies.

COMPILE EPD DATA

Gather EPD data from representative material producers in the island for concrete, steel, and CFS

2024 YEAR IN REVIEW

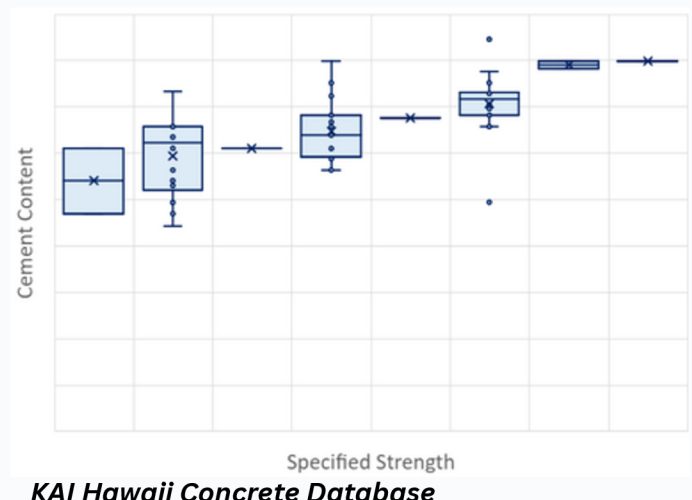
✓ SUSTAINABILITY REVIEW PROGRAM

Review program was not implemented, but will be moved to 2025 goal based on ACI 323

SPECIFICATIONS

CMU specifications were not worked on, but will be worked on in 2025

Partially complete; to be implemented in 2024





Kaimuki Gateway - office building, HI

ENGAGE SUPPLIERS IN SPEC UPDATES

Meet with concrete mix designers to discuss methods of improving mix designs and reducing cement content.

EPD ADOPTION

In our specifications for primary structural materials, require EPDs or a GWP calculation based on parameters we provide.

CLIENT PRESENTATIONS

Present on embodied carbon findings to (1) architecture firms and (1) state or county department or agency.

2024 YEAR IN REVIEW

✓ SEAOH SUSTAINABLE DESIGN COMMITTEE

Established inaugural SEAOH committee lead by Eric Borchers and Michelle Goo.

✓ ENGAGE SUPPLIERS IN SPEC UPDATES

Hosted presentation in office by HC&D to discuss producer recommendations for specifications

✓ CLIENT PRESENTATIONS

Presented LCA software tutorial to architectural client about using Tally for embodied carbon studies. Also presented to DOT about concrete material selection.

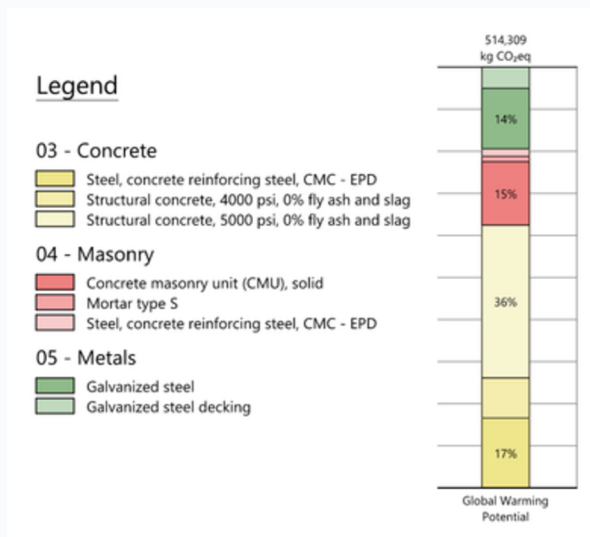


SEAOH Convention paper



STRUCTURAL
& FORENSIC
ENGINEERS

REPORTING



Example Project Life Cycle Assessment

PROJECT UPLOADS TO THE SE 2050 DATABASE

Submit (6) building projects to the SE 2050 database, with LCA completed by (3) different KAI Hawaii staff.

INFRASTRUCTURE

Complete LCA of 3 infrastructure projects and report at least one case study internally.

Although not included in SE 2050 project reporting, infrastructure projects are a significant share of KAI Hawaii's work, and we are equally committed to collaborating with public agencies to pursue net zero embodied carbon on upcoming projects.

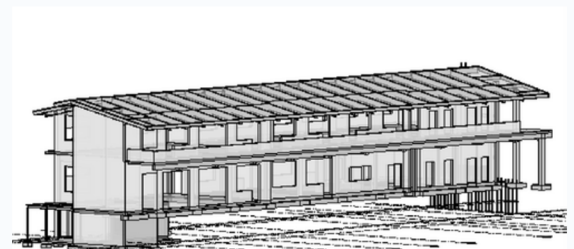
2024 YEAR IN REVIEW

✓ PROJECT UPLOADS

Submitted 6 projects to the SE 2050 Database

✓ INFRASTRUCTURE REPORTING

Created a tool for assessment of embodied carbon for building and infrastructure projects with Hawaii-specific embodied carbon intensities for structural materials and completed LCA study of 2 projects



Example Project Life Cycle Assessment