



Embodied Carbon Action Plan



City of Santa Monica, City Hall East, Living Building Challenge Certified, Net Zero Water & Energy

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[Mission Statement]

JAMA is committed to championing and engineering designs that reduce embodied carbon to net zero by 2050.



01/ Executive Summary

The built environment is responsible for approximately 40% of global carbon emissions. For buildings, the greenhouse gases emitted from extraction of raw materials, transportation, manufacturing, construction, maintenance, renovation, and end-of-life deconstruction, commonly known as embodied carbon, is responsible for 13% of the total.

With the world's building floor area projected to double by 2060,² structural engineers have a unique role to play in helping to minimize greenhouse gases emitted as part of the construction process. We are proud to be a member of SE 2050 and to bring our expertise to innovate designs that will reduce the negative impact of the built environment.¹

LA Biomed Research Facility, LEED Silver

1. "Why The Built Environment." Architecture 2030, [architecture2030.org/why-the-building-sector/#:~:text=The%20built%20environment%20generates%2040,for%20an%20additional%2013%25%20annually](https://www.architecture2030.org/why-the-building-sector/#:~:text=The%20built%20environment%20generates%2040,for%20an%20additional%2013%25%20annually).
2. Ibid.

02/ Education

JAMA's commitment to SE 2050 was launched with an in-house presentation on embodied carbon and the distribution of our ECAP report. Garnering interest from employees with a range of skill sets and interests, the firm has initiated a plan of action to achieve the SE 2050 goals, which includes:

- Educating new employees to our current sustainability measures and goals as part of the on-boarding process.
- Providing employees access to the entire SE 2050 library.
- Supporting an in-office "Green Initiative Team" that is committed to reducing our carbon footprint in our building design, developing and using Life Cycle Assessment (LCA) tools to more accurately calculate carbon emissions of a building, and making our internal office operations more sustainable.
- A commitment to sending office representatives to external conferences, educational webinars, and workshops to continue learning and promoting more sustainable practices in structural engineering.



UCSB Davidson Library Renovation and Expansion, LEED Silver

03/ Reporting

JAMA is committed to reporting a minimum of (4) LCA's for both of our California offices. As part of our internal workflow, we are committed to developing and advancing our methods for calculating embodied carbon. We expect to continue our use of Tally as well as explore other LCA computer-based tools such as Athena and One Click LCA and develop our own methods of calculating embodied carbon using supplier's Environmental Product Declaration (EPD) reports.



Westmont College Institute for Global Learning & Leadership, LEED Gold

04/ Reduction

After establishing a baseline of our carbon emissions, we will continue to engineer solutions to reduce embodied carbon in our designs. This includes but is not limited to:

- Using specifications for building materials with requirements for recycled material, limits for global warming potential, and sustainable material substitutions such as Portland Limestone Cement.
- Championing the use of certified sustainable, low-carbon mass timber.
- Decreasing the tonnage of structural material in our designs.
- Researching and employing new and more sustainable material alternatives and methodologies to sequester carbon in building materials.
- Continuing to embrace prefabrication and collaboration with structural subcontractors to deliver building components with less waste and embodied carbon.
- Employing advanced analysis techniques to repurpose existing buildings instead of replacing them.



Cal Poly Pomona Student Services Building, LEED Platinum

05/ Advocacy

As one of the largest private structural engineering firms in the Western United States, JAMA takes its potential to influence owners, designers, and institutions seriously. As part of our commitment to SE 2050, we have not only announced our participation on our website (www.johnmartin.com) but also have a plan of action to:

- Educate clients on our commitment to SE 2050 as well as encourage their participation in sustainable building design.
- Facilitate presentations from external companies on sustainable materials and practices for our employees and our collaborators. This also extends to educational workshops and presentations from internal experts on the use of LCA tools and sustainable design practices.



LAX Tom Bradley International Terminal, LEED Gold

JOHN A. MARTIN
ASSOCIATES & T
STRUCTURAL ENGINEERS