

CALL TO ACTION

Sustainability is an engineering responsibility

Why Engineering?

Engineers play a vital role in sustainability by designing systems, products, and infrastructure that use resources more efficiently and reduce environmental impacts. By developing innovative solutions that conserve energy, minimize waste, lower emissions, and improve resilience to climate change, engineers help create healthier, more resilient buildings and communities.

We have provided general engineering actions as well as specific actions for MEP, structural and civil engineers to reflect the unique requirements and opportunities of each.

Actions

- Utilize Decarbonization Plans and Best Practices approaches, available from your industry organization (i.e. ASHRAE, SEI, etc.).
- Advise Clients and Owners of the benefits of green building design, construction, and operations.
- Establish measurable project performance targets early in the process for operational carbon & embodied carbon reduction. Share past results with Owners, Clients, and Operations.

Actions – Mechanical, Electrical, Plumbing (MEP)

- Sign on to join the MEP 2040 Challenge - A movement to reduce total carbon emissions associated with building systems through collective action.
- Design the most efficient MEP systems you can to meet the Owners Project Requirements (OPR) and available project budget.
- Engage performance-based energy modeling services early in the project to influence and advise on efficient design solutions.
- Consider electrification decarbonization in designs (even if the client isn't asking).
 - Build a library of EPDs (environmental product declarations) for MEP equipment – or consider enrolling in a tool / subscription service that provides access to EPDs.
- Request low Global Warming Potential (GWP) refrigerants to reduce / eliminate emissions from refrigerants.
- Zone HVAC to consider building orientation, occupancy, and individual thermal controls for offices / office spaces.
- Support commissioning and ongoing performance verification to ensure systems operate as intended.

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Actions – Structural

- Sign on to join the SE 2050 Commitment - a program in which all structural engineers aim to understand, reduce and ultimately eliminate embodied carbon in their projects by 2050.
- Specify low-carbon or carbon-negative concrete and steel.
- Explore opportunities to optimize structures to reduce the amount of materials required.

Actions – Civil

- Design site stormwater / rainwater management systems to improve water quality, detain stormwater flows, reduce stormwater volumes and relieve burdens on municipal systems.
- Mitigate urban heat island effect by using high reflective paving materials and integrating green infrastructure, trees, and vegetation.
- Use local or site sourced materials to alleviate effects on wildlife and transportation impact
- Use low flow or water efficient options when irrigation is required.

Stand Out Strategies

- Conduct a resilience assessment on a project in collaboration with the construction team.
- Track embodied carbon on projects using available tools and benchmarks.
- Design buildings to achieve net zero operational carbon.