CARBON LEADERSHIP FORUM
Advancing Low Carbon Construction through research, education and outreach
Addressing Climate Change is a Time Critical Issue

In order to meet global climate targets, Fossil fuel emissions must drive to zero by 2050
Over 50% of global energy use is attributed to buildings

Embodied Carbon:
Greenhouse gas emissions from processes extracting and manufacturing materials to build buildings (trucks, equipment, factories, chemical reactions etc.)

Operational Carbon:
Greenhouse Gas Emissions from energy used to operate a building (lights, heat etc.)

Life Cycle Assessment (LCA)
The primary method used to track environmental impacts, such as carbon/CO2e throughout the life of a building
Over the next 35 years, two trillion ft$^2$ of new and rebuilt buildings will be constructed in cities worldwide.

An entire New York City every 35 days for 35 years!
As buildings become more energy efficient to operate,
The relative importance of embodied energy increases.
The total carbon emitted from a building over time depends on both the initial (embodied) impacts as well as the longer term operational impacts.
Professionals and Policy Makers need better data and tools to assess scenarios and develop pathways to meet global carbon targets.

Global Targets

Preliminary Planning Scenarios: Rate of Carbon Emissions for a neighborhood of 30 buildings
There is a time value to carbon:

- The built environment is a major carbon contributor
- For new buildings to 2050, Embodied impacts dominate
- Newly available embodied carbon data can be integrated with more established operational carbon data

The building industry needs pathways to meet global targets

- Embodied and operational carbon are both critical
- Different building scenarios must be tested to make design and policy choices.
- Data and tools are needed to test policy and building options
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