U.S. General Services Administration

Pathway to Decarbonization

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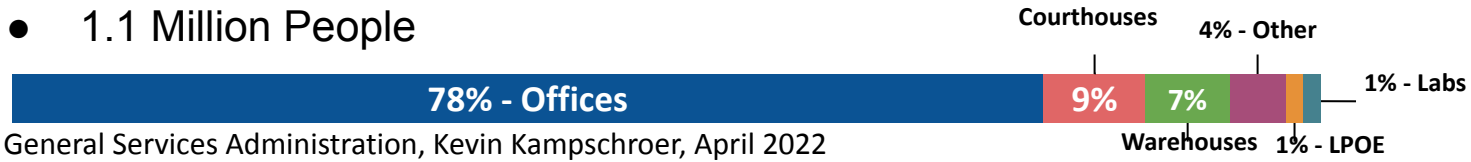
GSA Real Property Asset Portfolio Introduction

- Buildings contribute 99% of GSA's Operational Carbon Emissions 2,271,000 $MtCO_2e$
- Embodied carbon in buildings?
  We just do not know…
- 8,842 Owned or Leased Assets
  - 186.5 Million Square Feet Owned
  - 184.5 Million Square Feet Leased
- 1.1 Million People



Reducing embodied carbon is urgent

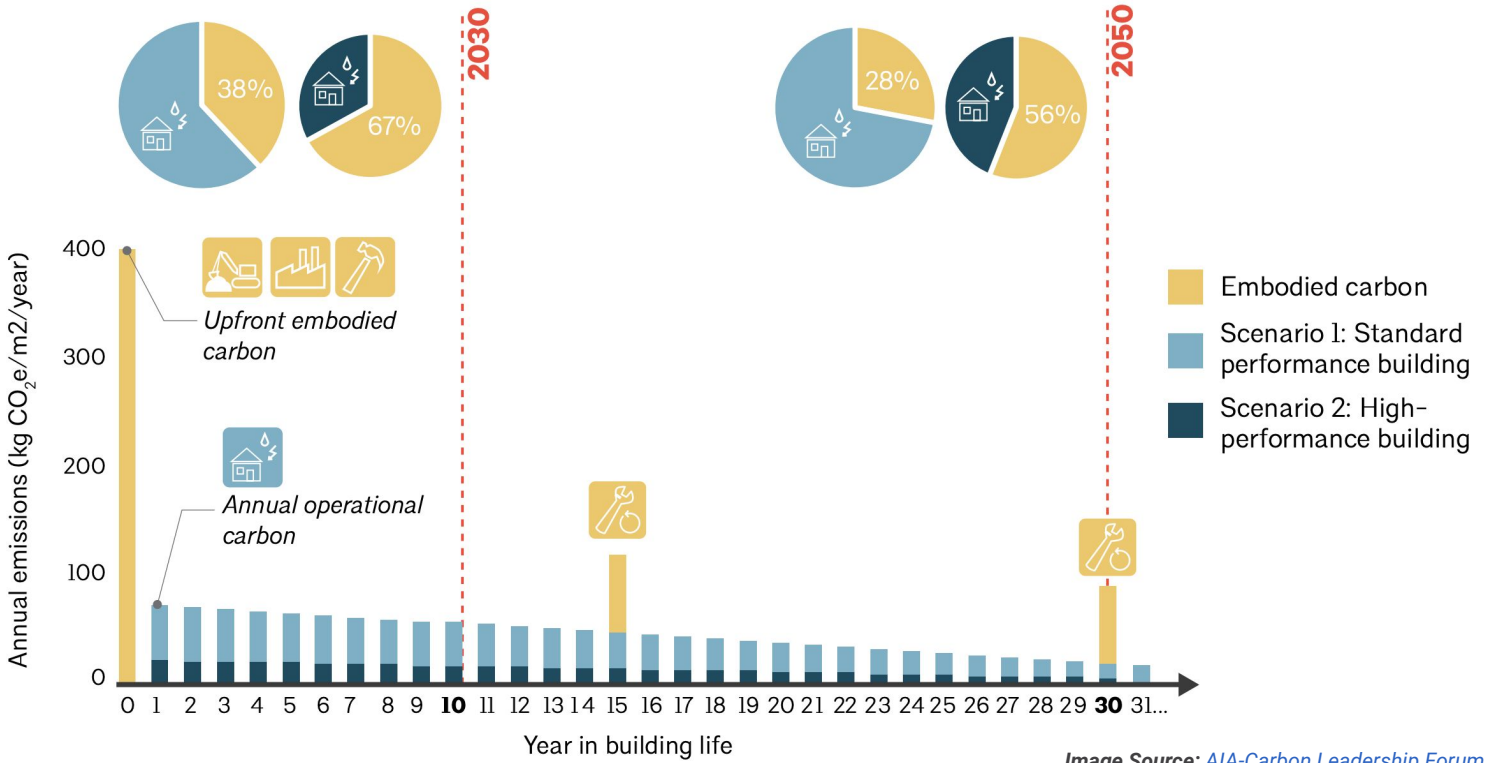


Image Source: *AIA-Carbon Leadership Forum Embodied Carbon Toolkit for Architects, 2021*

One Possible Pathway to Decarbonize GSA Buildings

Strategy 1: Decarbonizing Building Operating Emissions
Strategy 2: Decarbonizing New Construction

Decarbonizing Building Operating Emissions

= **Efficiency + Electrification + Demand Flexibility** + **Battery Storage + Renewable Energy**

Core Solutions*

Gap Solutions*

*Cost optimized decarbonization requires an optimized blend of these strategies

Decarbonizing New Construction

= **Low/No Embodied Carbon New Construction***

*2021 GBAC policy recommendations include embodied carbon thresholds calculated through Environmental Product Declarations (EPDs) and Whole Building Life-Cycle Assessments (WBLCAs)

Consequences of Not Acting NOW

- Opportunities are infrequent
- Buildings account for ~40% of total emissions in the US, and consume 70% of the electricity
- How many degrees of warming can we tolerate? (See latest UN IPCC Report)
- Change is hard; the longer we wait, the more change will be needed

Regarding Buildings and Construction, to achieve Washington D.C.'s Carbon & Equity goals, a critical obstacle [for our organization] to overcome is **the lack of consideration of embodied carbon value in asset and investment planning between new construction, existing building modernization, and purchase of existing buildings.**

Or

The difficulty of fitting decarbonization (electrification) strategies into traditional repair/replacement budgets.