Panel 13b: Innovations to Scale Retrofits and New Construction

Roughly 70% of U.S. buildings that exist today will still be in use by 2050, underscoring the critical need for whole building retrofits to meet building performance improvement goals. The current pace of retrofits—less than 1% per year—is too low to meet these goals, due in part to technological, financial, and policy barriers that limit scalable deployment. At the same time, the U.S. is facing an acute housing affordability crisis, driven in part by years of chronic underbuilding. Nationally, estimates indicate a shortage of 4 to 7 million homes, with Harvard's Joint Center for Housing Studies projecting a need for 11.3 million new homes by 2035 to meet expected demand. This shortage has contributed to a 60% surge in home prices since 2019, pricing out millions of Americans and leaving nearly half of all renter households cost burdened. High costs and limited supply make it increasingly urgent to identify innovative construction methods that can deliver high-performance housing affordably and at volume.

This panel will explore the intersection of building innovation and housing supply expansion, focusing on strategies to scale retrofits and affordable new construction. We invite papers in the following categories:

- Technological innovations that enable scalable retrofits or new construction (e.g., prefabrication, industrialized processes)
- Financial innovations that unlock retrofit and new construction markets, particularly for underserved income tiers
- Portfolio or programmatic approaches that replicate successful models across multiple building types or regions
- Integrative strategies that support equitable deployment across communities

The panel aims to foster a rich dialogue among practitioners, researchers, and policymakers to accelerate the development of affordable building solutions at the required scale by highlighting solutions for both existing and new buildings.