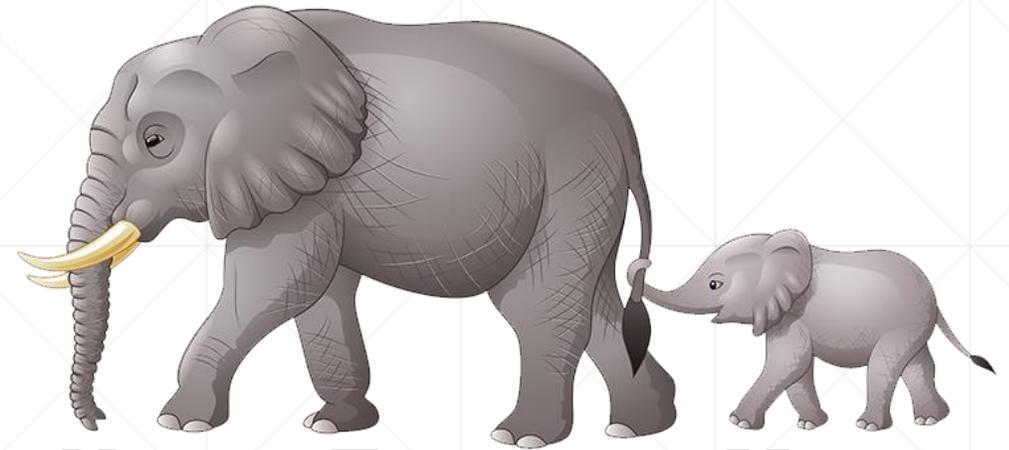


Thursday, June 24, 2021



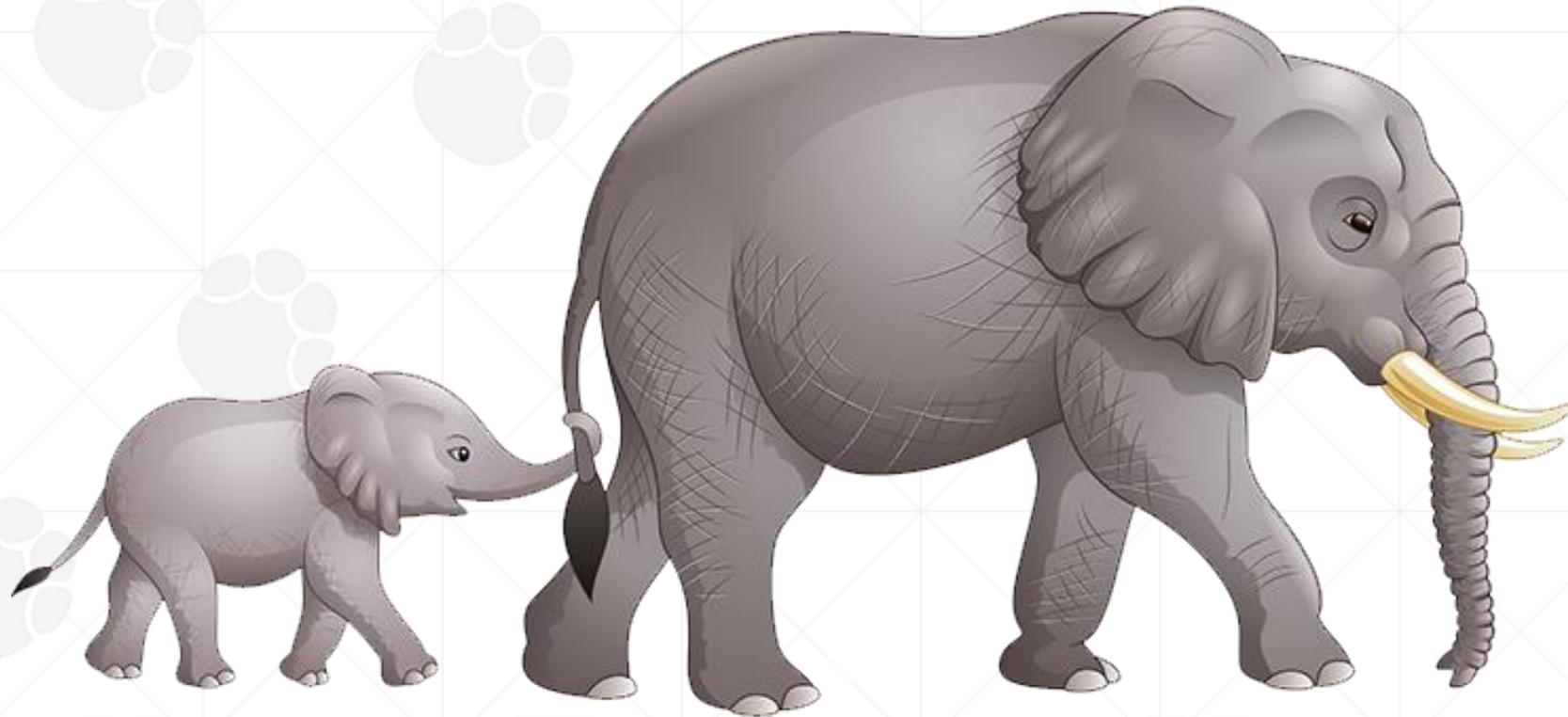
URBAN ELEPHANT MEDIA

~ PRESENTS ~

*Carbon reductions, climate change,
and the cost effectiveness of building sustainably*

Featuring Caroline Quinn and Shane Minckley

Sponsored by Autocase



URBAN ELEPHANT MEDIA

PEER-TO-PEER LEARNING MADE EASY

Sustainability Training for Urban Designers and Policymakers

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The Autocase logo features the word "Autocase" in a white, sans-serif font. The letter "A" is stylized with a white arrow pointing upwards and to the right, integrated into its top-left corner. The background of the logo is a low-angle photograph of a modern glass skyscraper against a clear blue sky.

Autocase

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Our Presenters



Caroline Quinn
Product Manager
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Shane Minckley
Economics Manager
Autocase



Carbon Reductions, Climate Change, and the Cost of Building Sustainably

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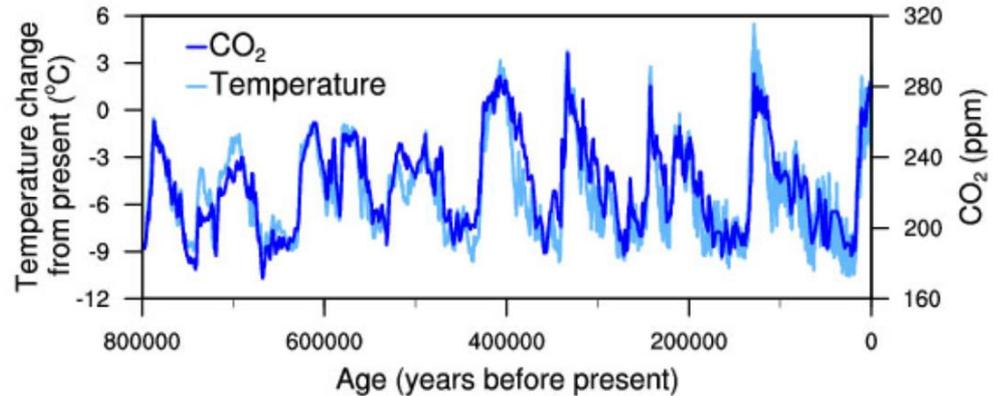
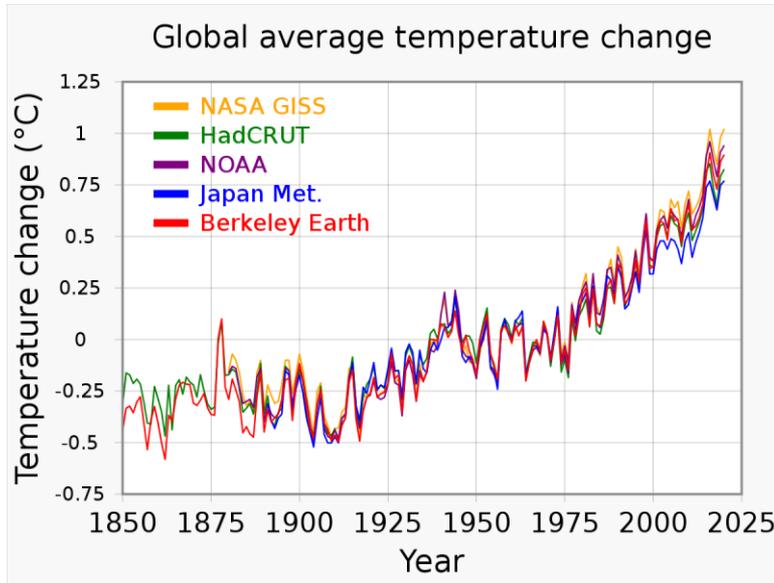
Sustainable business case analytics



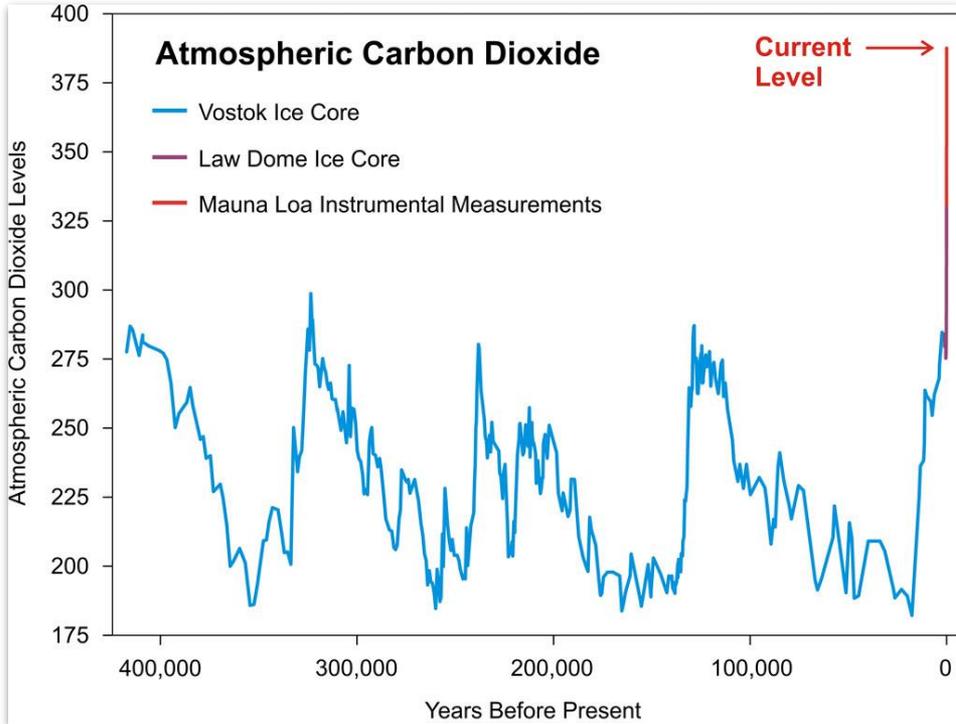
Carbon (GHGs) and Human Activity



“When the carbon dioxide concentration goes up, temperature goes up. When the carbon dioxide concentration goes down, temperature goes down.” - NOAA



Impacts of Climate Change



Sea Level Rise



Ocean Acidification



Storm Frequency & Intensity



Heat waves, droughts, etc.

Carbon Regulation



Government response to climate emergency on both an international and domestic level

International - Paris Climate Accord (1.5C increase in temperature)

American - Net zero by 2050, 100% carbon free electricity by 2035

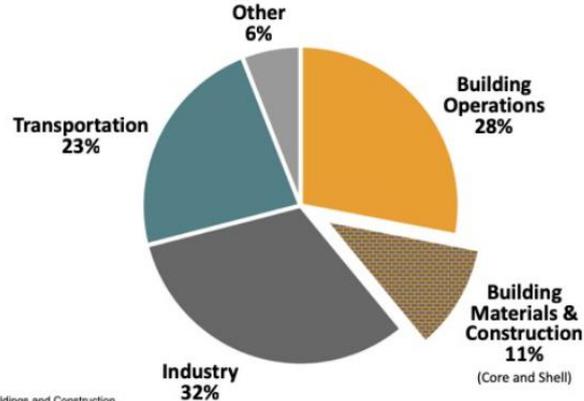
Canadian - Federal carbon tax, 30% reduction in GHG emissions from 2005 levels by 2030, net-zero by 2050



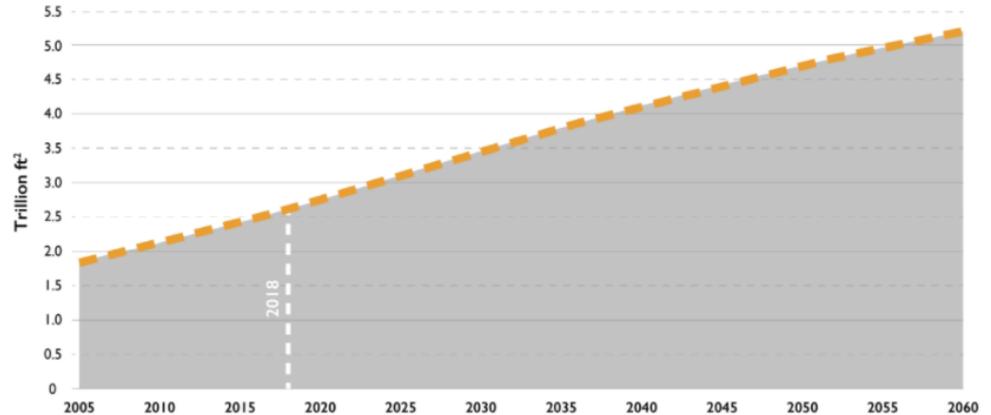
Buildings & Carbon

The urban built environment is responsible for 75% of annual global GHG emissions: buildings alone account for 39%. - Architecture 2030

Global CO₂ Emissions by Sector



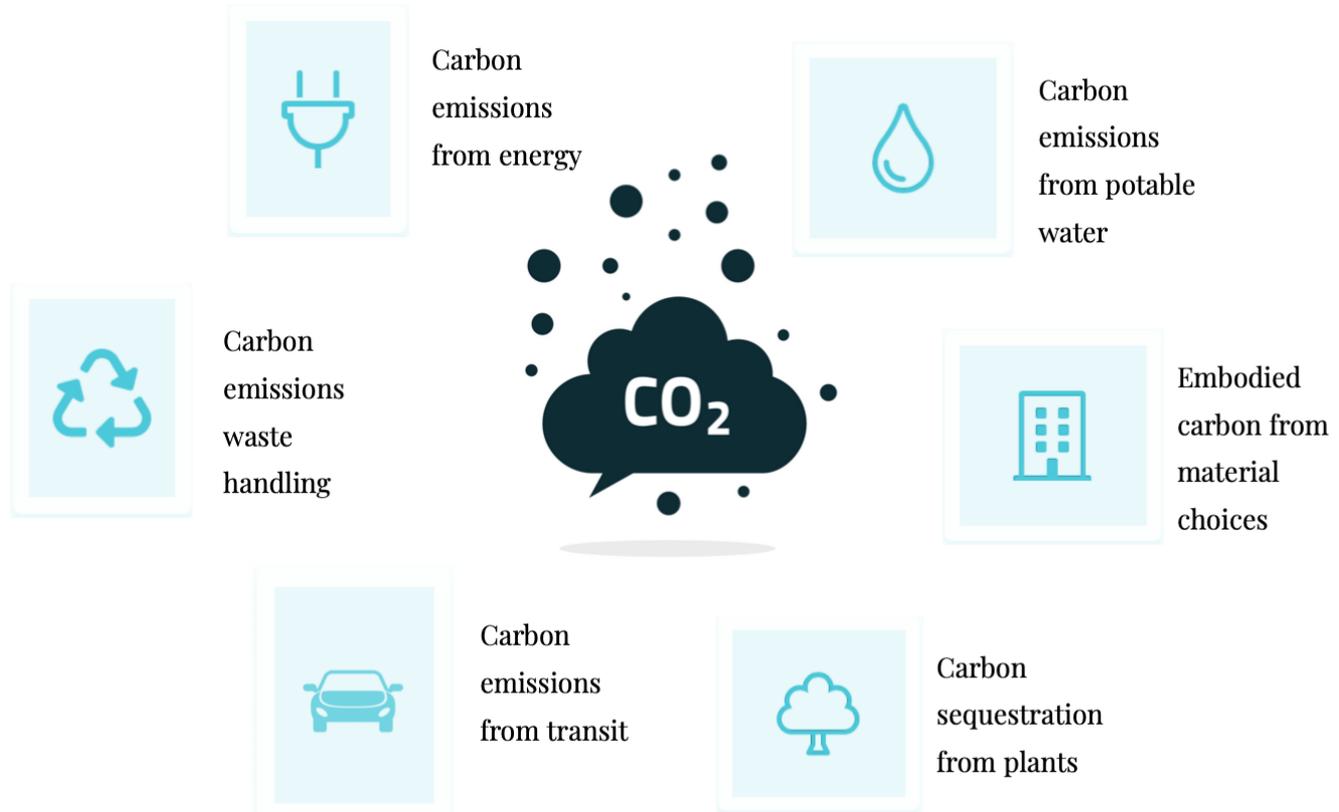
Source: Global Alliance for Buildings and Construction, 2018 GLOBAL STATUS REPORT.



Global Floor Area Growth

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Source: UN Environment Global Status Report 2017
Data Source: IEA (2017), World Energy Statistics and Balances

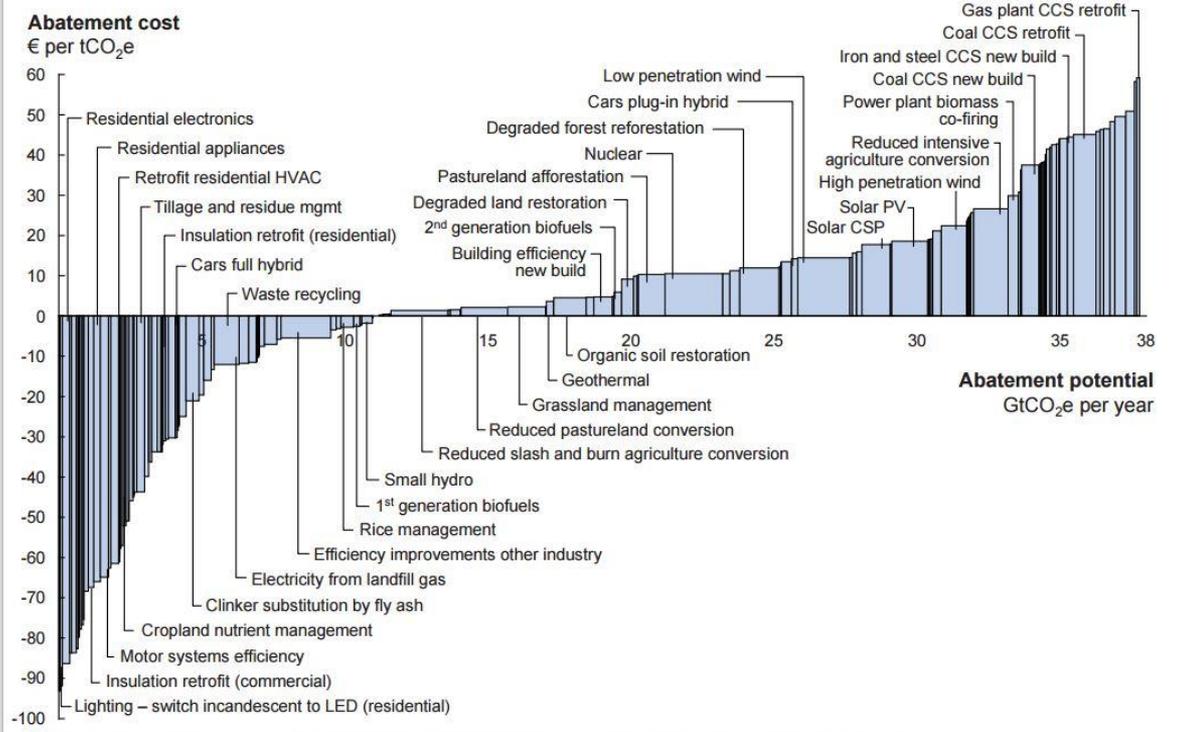
Building Carbon Footprints - Aspects



Carbon, Climate Change, and Buildings

Cost of Abatement

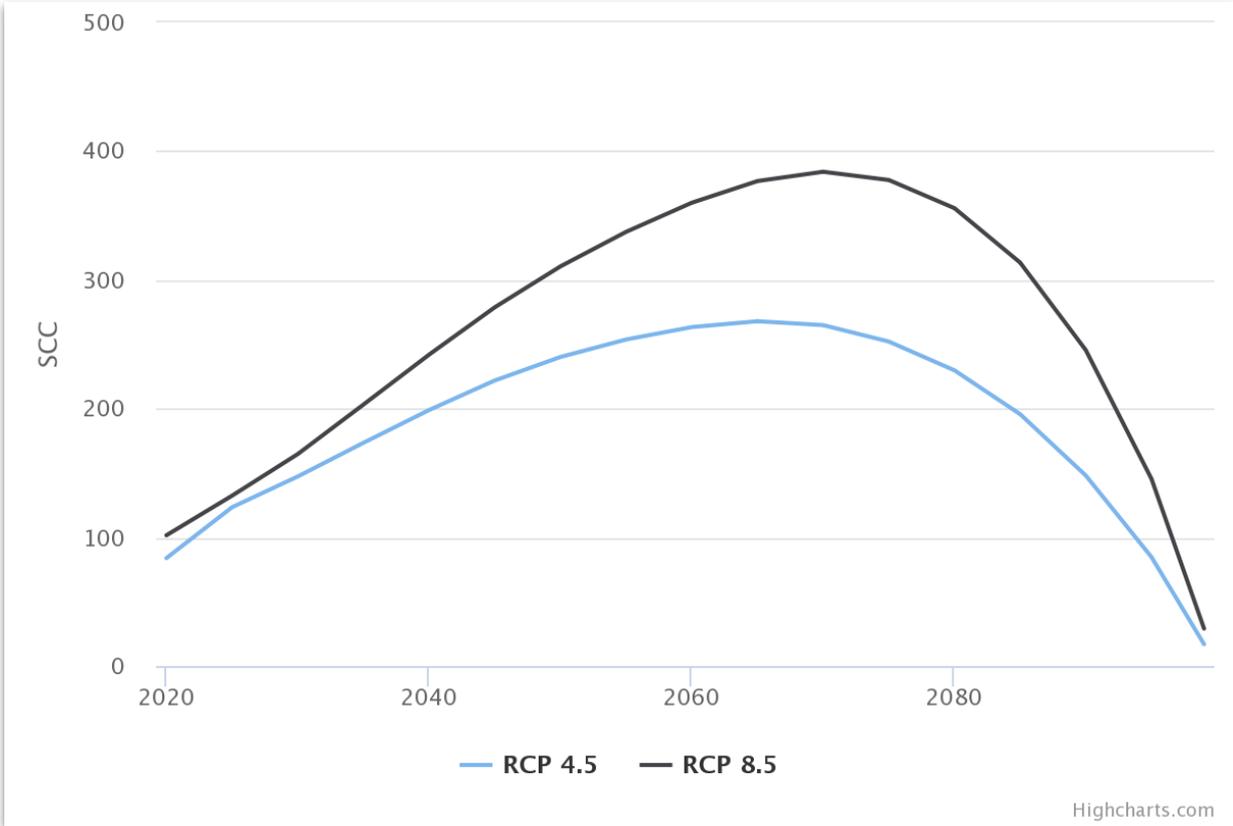
Global GHG abatement cost curve beyond business-as-usual – 2030



Carbon, Climate Change, and Buildings



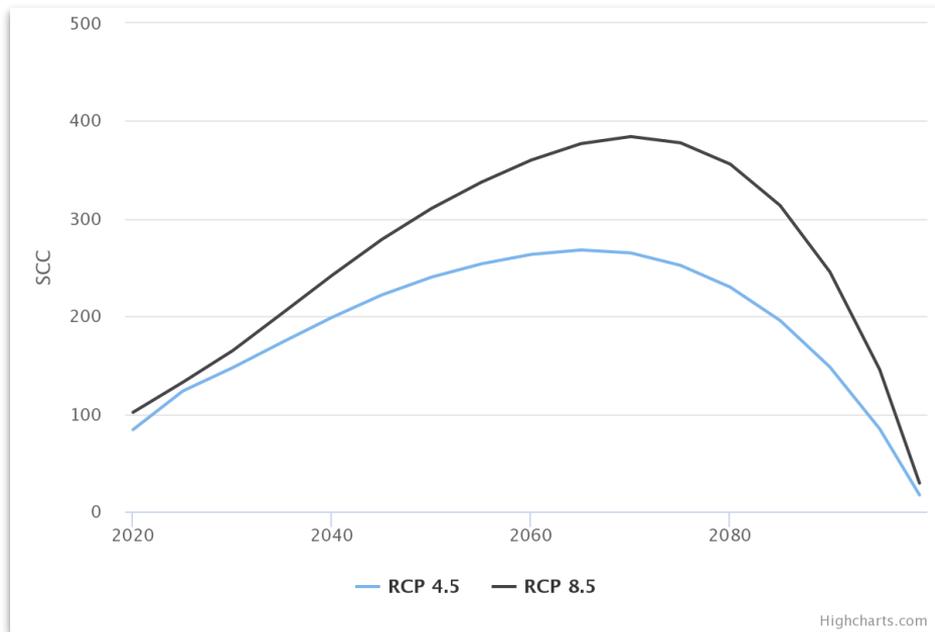
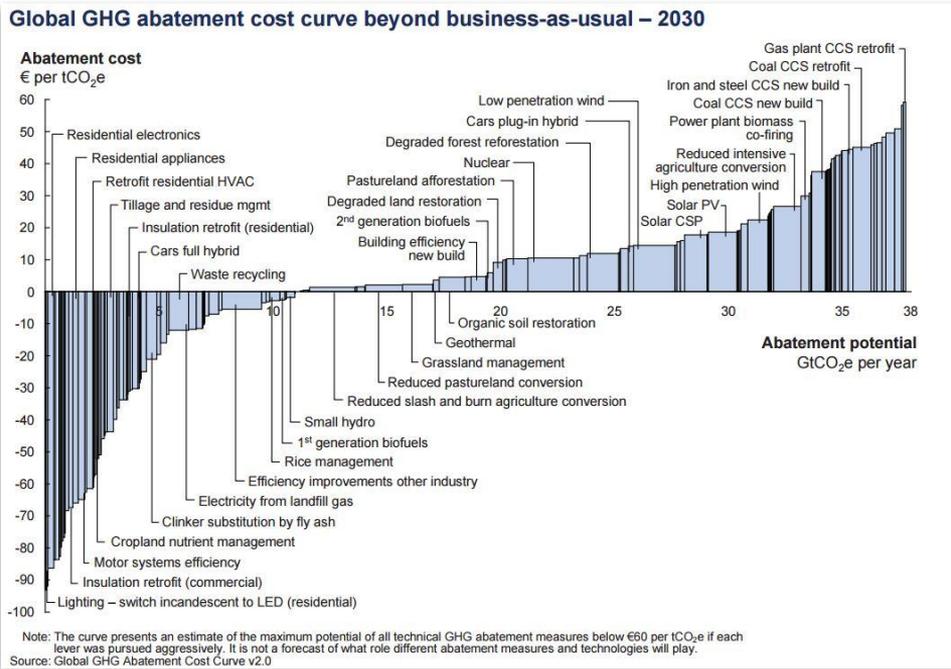
Social Cost of Carbon



Carbon, Climate Change, and Buildings

Cost of Abatement

Social Cost of Carbon



Low Carbon Buildings & Affordability

Financial Considerations:

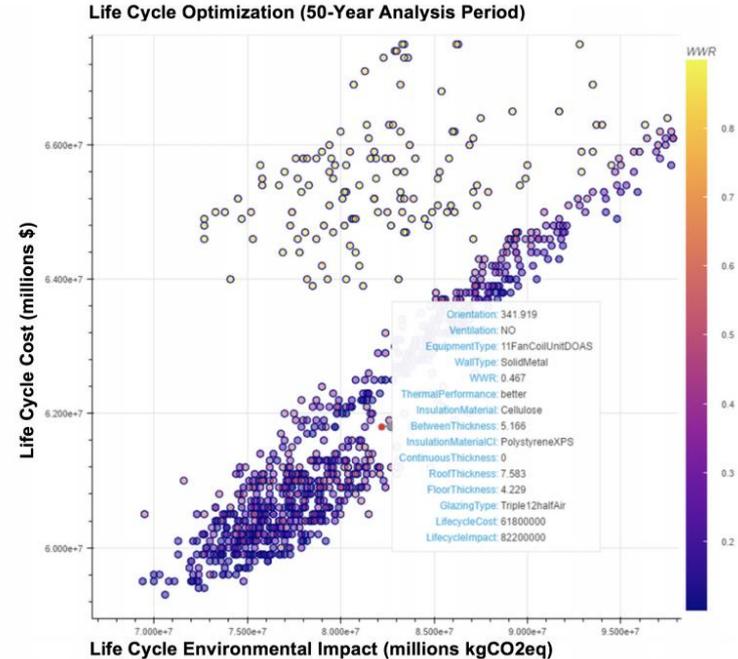
How can project budgets be maximized to reduce carbon footprints?

How do we reconcile life-cycle impacts with short, medium and long term cost implications?

Engaging in the Cost Conversation:

Many important sustainability initiatives and measures are given yes/no consideration before cost consultants are brought on-board

Giving building owners and developers a sound understanding of relative cost implications is vital to successful de-carbonization in buildings



Economic Analysis & Low Carbon Design



What does carbon reduction mean from a financial, social and environmental perspective?

How do you weigh the tradeoffs between cost, carbon, or occupant experience?

Financial	Social	Environmental
Upfront Cost & Utility Savings	Occupant Health & Wellness	Ecosystem Services & Habitat
Operations & Maintenance	Productivity & Absenteeism	Water Quantity & Quality
Repair & Replacement	Community Well-Being	Sea Level Rise
Taxes & Incentives		Storm Intensity & Frequency
Value & Rental		

Autocase & Low Carbon Design




Design

Impact

Dollars

Comprehensive Look at Project Outcomes :

Cost-benefit analysis to provide a more comprehensive look at the factors driving value in sustainability decisions

Financial, social and environmental impacts tied to performance indicators

Early stage workflow to advocate for important goals and features before changes get difficult and expensive

Dollars as the unit of measurement to allow for comparison of impacts across the spectrum



Autocase
Design Valuation Software

Features Driving Sustainable Buildings



Automated Baseline Buildings

ASHRAE and CBECs baselines for new construction and existing building comparisons.

End use breakdown of baseline energy consumption

Cost Estimates for Pre-SD

Cost estimates tied to incremental improvements that drive higher performance and lower carbon intensity

Cost database taken from our partners RSMeans



Building Components

Break out of inputs and impacts to reflect the levers that you control on your projects

Breakout of design to the components that drive performance





Thank you.

