



# **C**ARBON **A**VOIDED **R**ETROFIT **E**STIMATOR



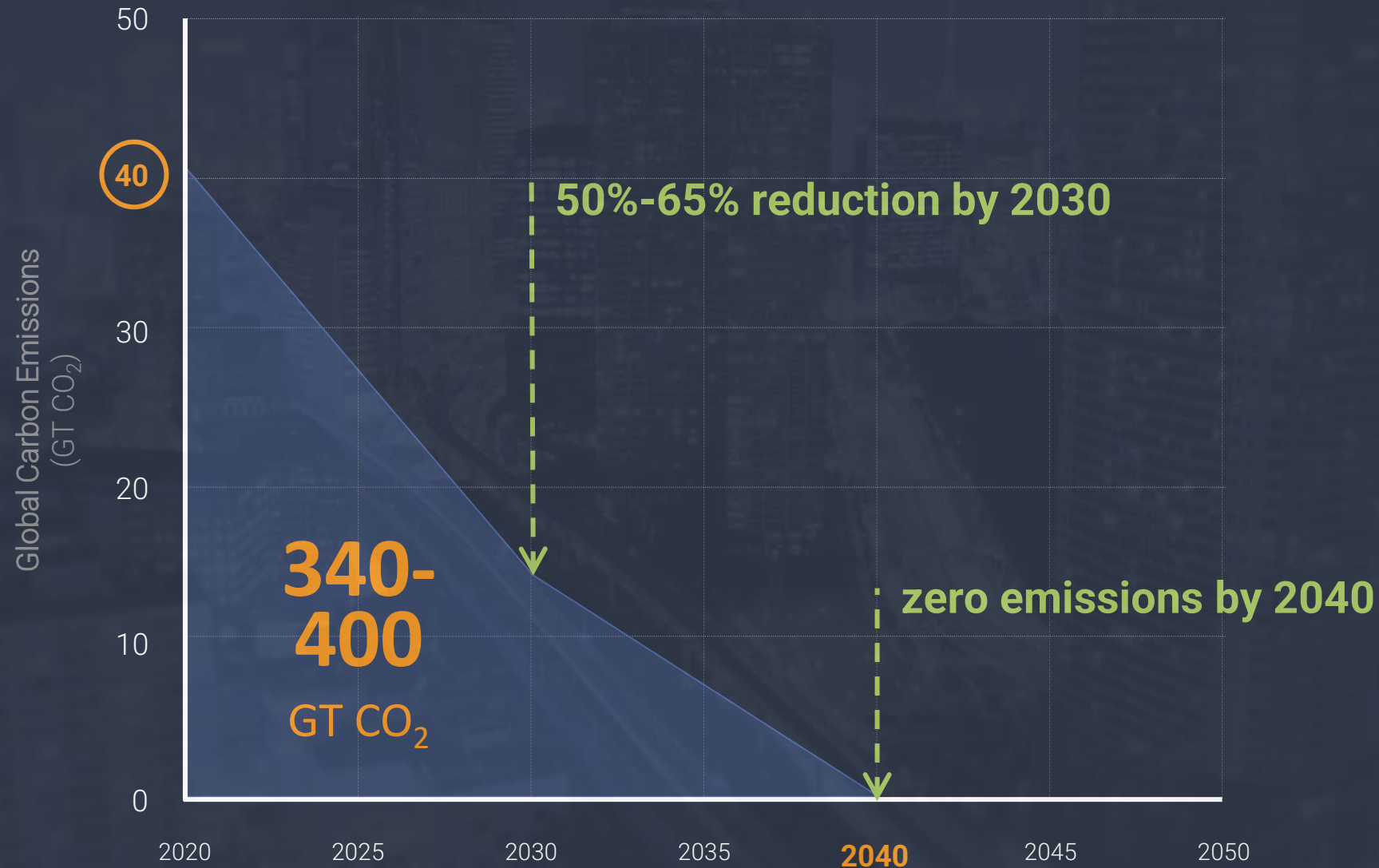
An aerial photograph of a dense urban landscape, likely New York City, featuring numerous skyscrapers and a multi-lane highway in the foreground. The image is faded to serve as a background for the text.

# the case for **BUILDING REUSE**

# GLOBAL CARBON BUDGET: 340-400 GT CO<sub>2</sub>

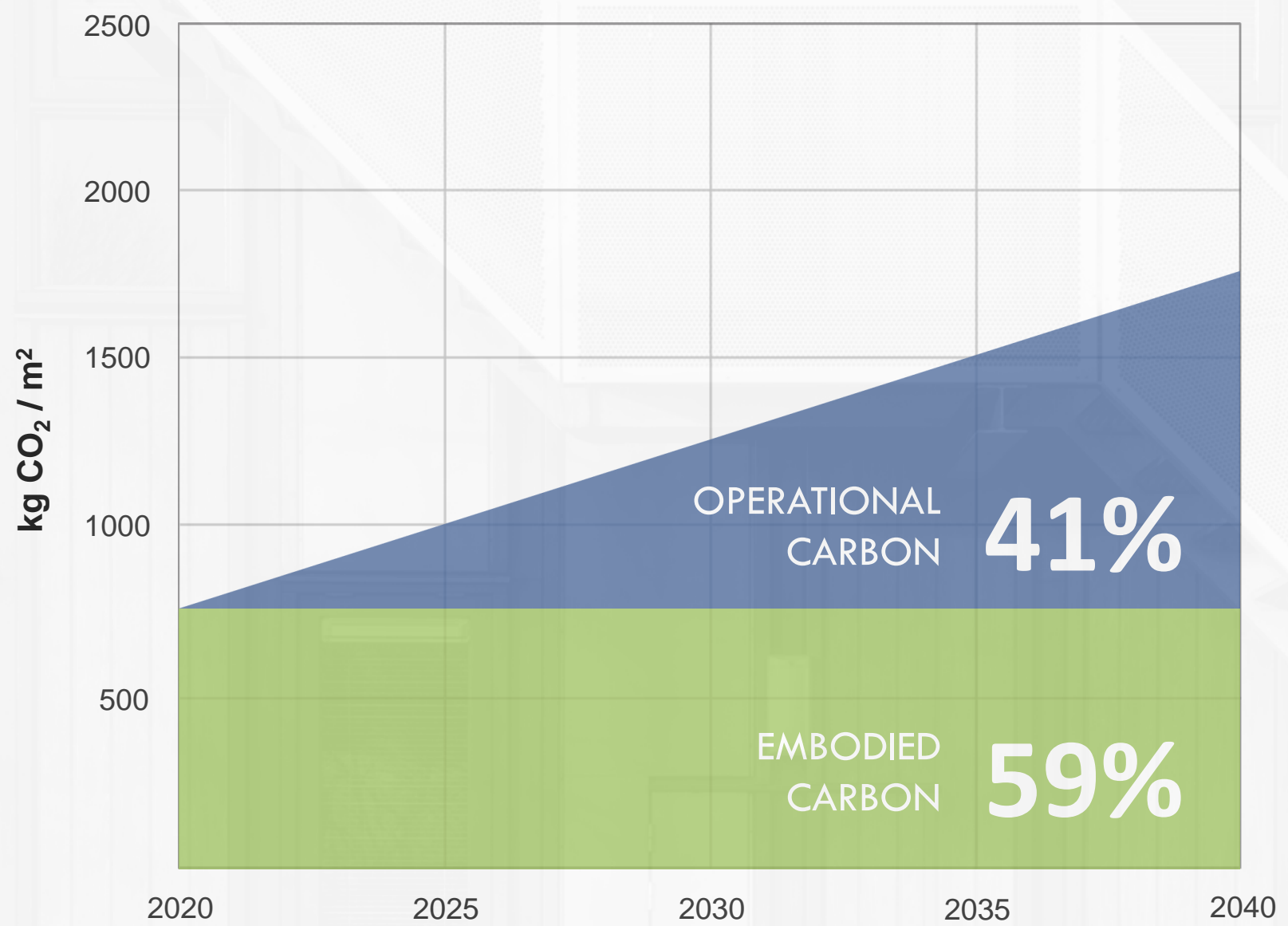
## BEST CHANCE OF MEETING 1.5°C

*Intergovernmental Panel on Climate Change 6<sup>th</sup> Assessment Report*



**The greenest building is one  
that's already built.**

# Carbon Footprint: Average New Building

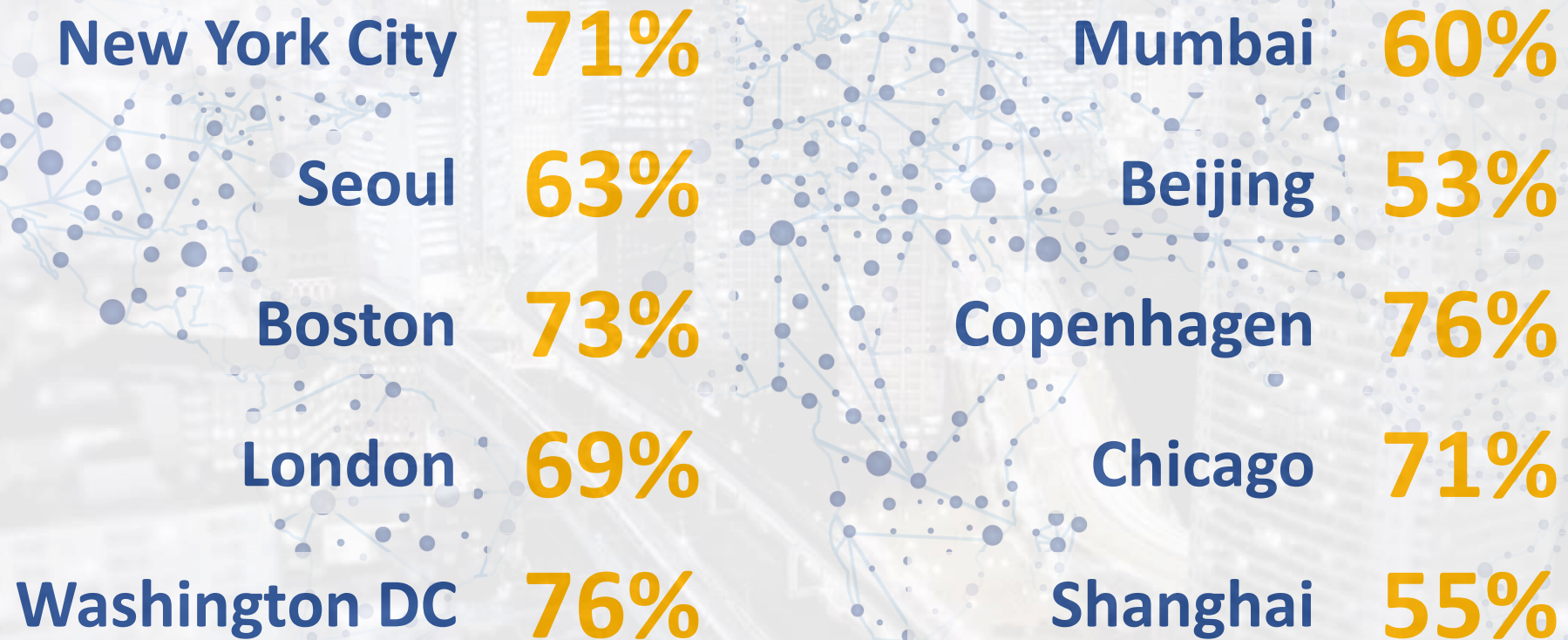


Source: © 2021 Architecture 2030. All Rights Reserved.  
Data Sources: Global Alliance for Buildings and Construction, 2018; IEA





Within urban environments, **existing buildings** are typically responsible for the majority of emissions.



Source: UN Habitat, Paulson Inst., city data, etc.

In 2040, **2/3 of the global building stock** will be buildings that exist today.  
Without upgrades, they will still be emitting GHGs.



**The greenest building is one  
that's already built.**





**The greenest building is one  
that's been retrofitted.**

# the **CARE** TOOL

**CARBON  
AVOIDED:  
RETROFIT  
ESTIMATOR**

## The CARE Tool Team



**Larry Strain**  
FAIA  
Founding Principal  
**Siegel & Strain Architects**



**Lori Ferriss**  
AIA, PE, LEED AP BD+C  
Principal, Director of Sustainability  
and Climate Action  
**Goody Clancy**



**Erin McDade**  
Assoc. AIA  
Senior Program Director  
**Architecture 2030**

**caretool.org**



# WHO CARES ABOUT CARE?

## PROJECT SUPPORTERS



National Trust for  
Historic Preservation®  
*Save the past. Enrich the future.*



THE 1772 FOUNDATION

REUSE STAR

QUINN  
EVANS

BOSTON  
PRESERVATION  
ALLIANCE



REUSE LEADER

Eskew Dumez Ripple<sup>+</sup>

## PROJECT COLLABORATORS



Climate Heritage  
NETWORK



Carbon  
Leadership  
Forum

epic.

## FOUNDING PROJECT DEVELOPERS

SIEGEL & STRAIN  
Architects

GOODY  
CLANCY





# the **CARE TOOL**

**CARBON  
AVOIDED:  
RETROFIT  
ESTIMATOR**

[caretool.org](http://caretool.org)

## What it Does

Evaluates total carbon emissions and impact potential of existing building reuse compared to replacement new construction.

## What it **Doesn't** Do

- Detailed energy modeling
- Whole Building LCA
- Allow user overrides of backend data (users can override default outputs)

## Who it's For

- Public officials
- Planners
- Heritage officers
- Building owners
- Real estate developers
- Building industry professionals
- Educators

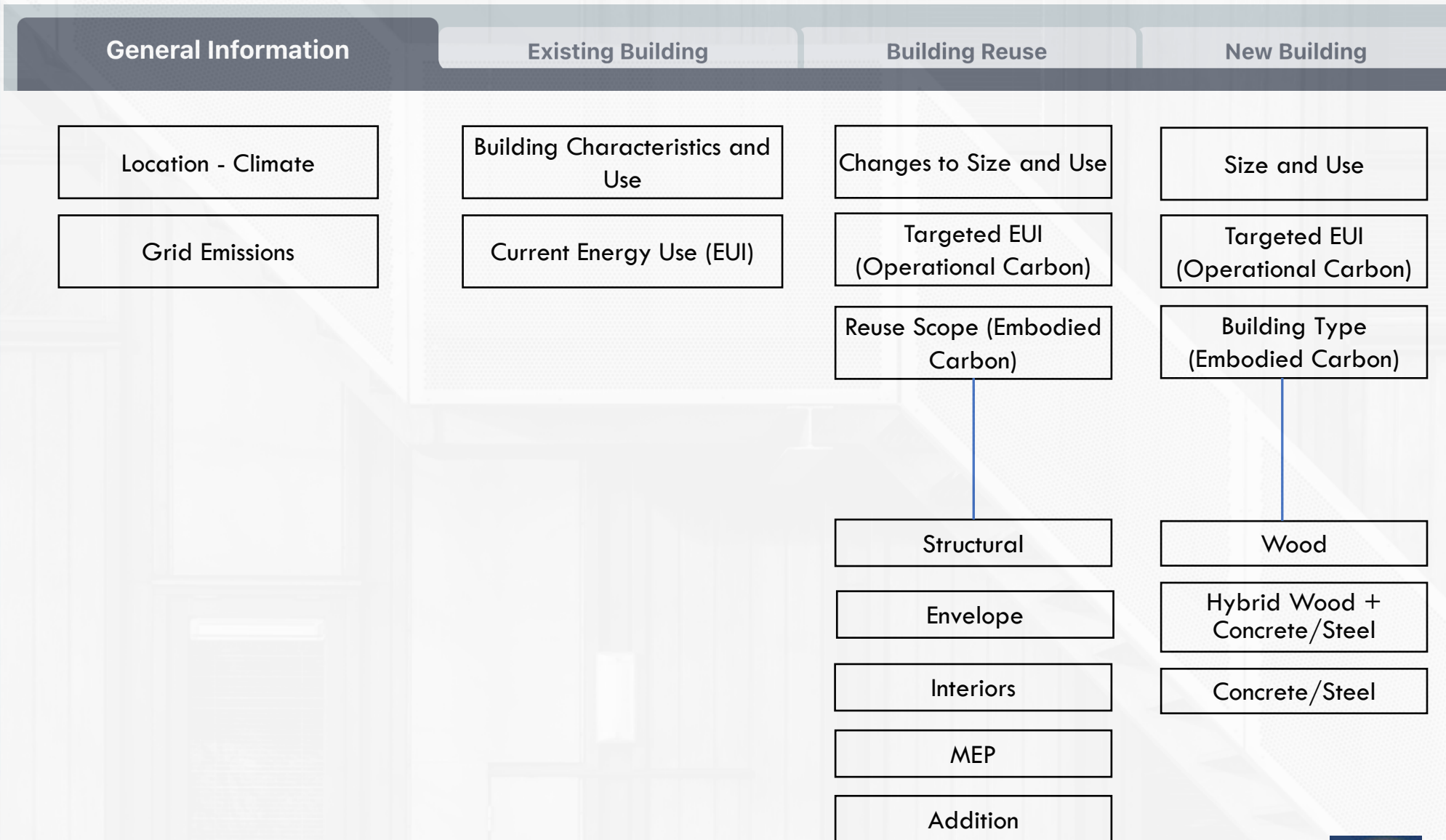


# the CARE TOOL

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## CARE Tool Taxonomy



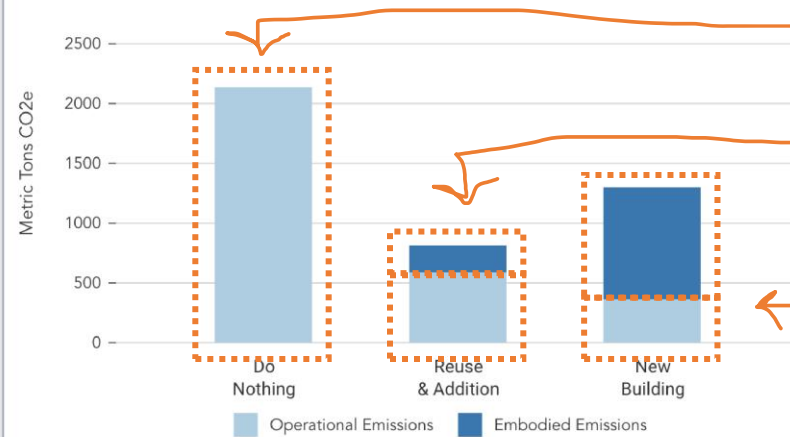
# the CARE TOOL

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RESULTS

Total Added Embodied & Operational Emissions over 17 Years

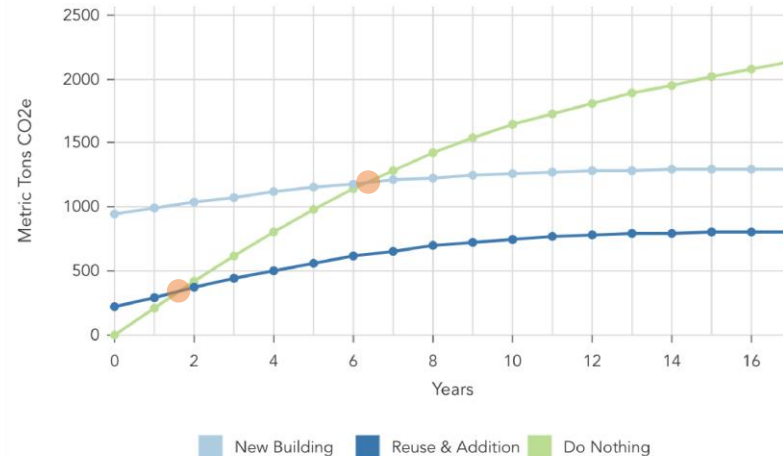


do nothing

retrofitted building:  
operational emissions  
embodied emissions

new building:  
operational emissions  
embodied emissions

Cumulative Emissions Over Time



do nothing

new building

retrofitted building






# the CARE TOOL

## CARBON AVOIDED: RETROFIT ESTIMATOR

caretool.org

 **CARE Tool** [CARE Tool](#) [About](#) [User Guide](#) [CARE in the News](#) [Data & Methodology](#) [Case Studies](#) [FAQ](#) [Donate](#) [User Feedback](#)

# CARE Tool

CARBON AVOIDED: RETROFIT ESTIMATOR

### The CARE Tool allows users to compare the total carbon impacts of renovating an existing building vs. replacing it with a new one.

“For everyone who has been interested in connecting building reuse with climate action but unsure where to start, the answer has arrived—start with CARE.”

Jack Rusk  
Climate Strategist, EHDD

[LEARN MORE](#) [SUPPORT CARE TOOL](#)

[READ MORE TESTIMONIALS](#)

#### INSTRUCTIONS

Enter general project information in the first tab and information about the existing building in the second tab. In the third tab enter information about renovating the existing building including any planned additions, and in the fourth tab enter information about the new building to replace the existing building. Click an information [i](#) for more details.

Compare each option using the charts and table to the right. The results will automatically populate once enough information is entered and automatically update as inputs are adjusted.

#### PROJECT NAME

General Information

Existing Building

Building Reuse


New Building

#### General Information

Enter basic information about the project and analysis parameters.

PROJECT LOCATION [i](#)

Country

 ENTER PROJECT INFORMATION TO CALCULATE YOUR ESTIMATED EMISSIONS OVER TIME

