



**World Environment Center
Decarbonizing Value Chains:
The Built Environment**

DECARBONIZING NEW CONSTRUCTION

1. Build only when and what you need to build.

3. Pursue efficiency from Day One - energy, materials, water.

2. Work WITH climate and context.

4. Use the fewest, most appropriate materials.

1

Build only when and what you need to build

- Extending the life of what's already built saves waste, sequestered carbon - and money.
- When you need to build something new, design elements & functions to be multipurpose.
- Leverage programmable outdoor spaces whenever possible.



Houston Center, Houston

2

Work WITH climate and context

- Orient the building to minimize or maximize solar heat gain based on the local climate
- Organize massing to self shade, protect from or leverage wind, reduce noise intrusion, and work with the future climate of the site
- Prioritize passive methods to reduce energy consumption and
- Maximize on-site renewable energy generation, rainwater collection & re-use, and native vegetation



Houston Advanced Research Center, Houston

3

Pursue efficiency from Day One: energy, materials, water

1.

Understand your building's energy profile.

2.

Create an Energy Budget.

3.

Orient your building to its surrounding climate - micro and macro.

4.

Use building energy modeling to select your envelope.

5.

Introduce exterior shading.

6.

Design for daylight.

7.

Consider outdoor programming.

8.

Boost natural ventilation.

9.

Reduce plug loads.

10.

Prioritize whole systems over localized solutions.

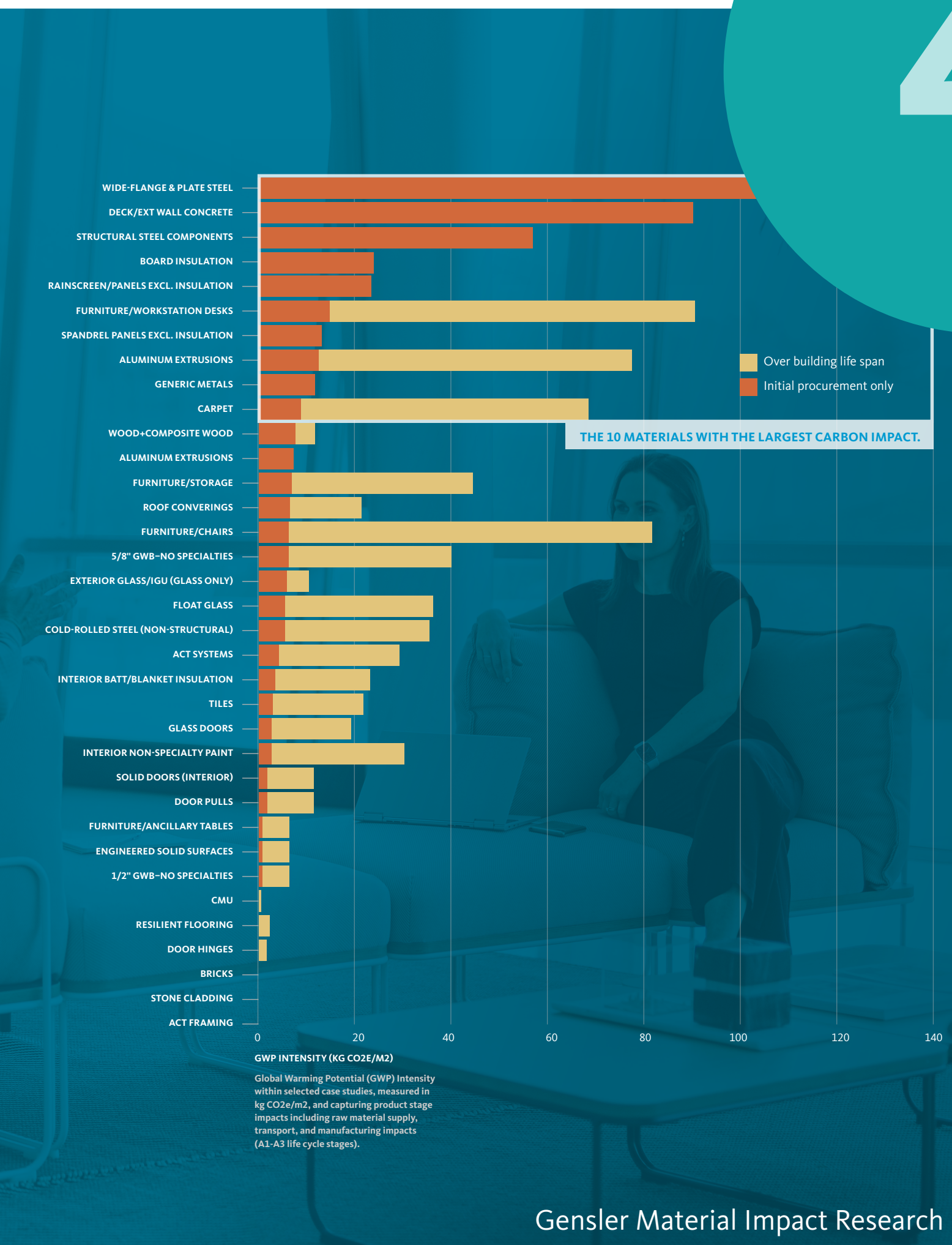


Student Sustainability Center, California State University, Northridge

4

Use the fewest, most appropriate materials

- Select the lowest embodied-carbon footprint materials that meet project performance criteria
- Include replacement in your life-cycle analysis. Over a 60 year span, interior design elements / materials that are replaced every 10 years have an embodied-carbon footprint similar to the building structure.
- Re-use as many materials as possible. There's a finite amount of raw resources on our planet.





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