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GENERAL

Does Miller Hull have this all figured out?

Not yet. Like many, we are working with the best available science and tools currently available to understand our impact and try to offset it. There may be things we have overlooked and areas where we can improve and we invite you into a conversation to make this initiative better.

What can I do to help?

We all have a role to play and we will meet our climate goals faster if we all do our part. If you're a **client**, we hope you'll support efforts to reduce carbon emissions by building only what you have to, reducing your building's energy use and buying a carbon offset for the emissions you cannot avoid. If you're an **architect or engineer**, work to make your designs more efficient by reusing materials and structures and analyzing the embodied carbon of the materials you are intending to use. If you're a **contractor**, use your expertise with project scheduling and materials procurement to help projects find carbon reduction opportunities. If you are a **student**, learn all you can about the need for emissions reductions and how you can optimize your designs to meet zero carbon in ways we have not yet thought of. If you're a **policy maker**, help set meaningful codes and policies that ask for embodied carbon reporting in all products and materials in a transparent, consistent and accountable ways. And pass laws that require reductions in emissions from materials manufactured and used in buildings.

How can I provide feedback or get in touch about Emission Zero?

Please email us at sustainability@millerhull.com

Can we copy or take inspiration from Miller Hull's Emission Zero for use at my business or organization?

Yes, please download and use our information to develop your own commitment.

Has Miller Hull done anything like this before?

Yes. All of our Living Building Challenge projects have required an offset for embodied carbon. As a client of two of them, we have purchased that offset. The others have been purchased by those project's clients. Also, we have been offsetting our company's annual operational emissions (energy and material purchases for both of our studios in Seattle and San Diego, employee travel) for about a decade.

Why is Miller Hull making this commitment?

Because we take our responsibility to account for the carbon emissions seriously, and we see this as one of the ways we can move toward carbon neutrality.

DESIGN

What are the tools you are using for decarbonizing building operations?

Our primary methods of driving down operational emissions are energy efficiency, on-site renewables, and electrification. We apply [our experience in Net Zero Energy design](#) to every

project, striving to meet the [2030 Challenge](#). Some tools we are currently using to reduce operational emissions of the buildings we design include energy benchmarking databases ([Seattle, Zero Tool](#)), and energy modeling software ([ClimateStudio](#)). As always, we collaborate with our consultants to make well-informed system solutions to reduce building energy use.

What are the tools you are using to decarbonize building construction?

To address embodied carbon, Miller Hull teams are relying on whole building life cycle assessment software ([Tally](#)), and environmental product declaration databases ([EC3](#)). We leverage these tools during design to spotlight the most impactful materials and find feasible alternatives, or compare design iterations to help material selection. For more information on how to incorporate embodied carbon reductions into design, refer to [the Embodied Carbon Primer](#) or [the Life Cycle Assessment of Buildings: A Practice Guide](#).

EDUCATE

What is the ‘Miller Hull Gap Analysis’? How and when do you conduct one?

The gap analysis is a process our design teams undertake throughout design to track their progress towards sustainability goals. For every project, this process is tailored to best suit project needs, but the inherent structure of the analysis remains the same. The gap analysis process:

- Describes three sustainability scenarios (Good, Better and Best) for each project
- Visualizes key performance metrics describing the three scenarios in line with our [Sustainability Action Plan design work objectives](#)
- Compiles available benchmarking data to set feasible performance targets for projects

The gap analysis is intended as a starting point for every project – and is later supplemented with other tools as appropriate for the project scope, such as sustainability charettes, energy modeling, and whole building life cycle assessment among others.

What are some avenues where Miller Hull staff participate?

A full list of education efforts Miller Hull participates in is available [on our website](#).

ADVOCATE

How do Miller Hull staff advocate for decarbonized built environments? How can I join?

Miller Hull staff participate in legislative advocacy and rule-making, primarily in collective action with organizations such as the [AIA Washington](#) Climate Committee, [Shift Zero](#), and the [Carbon Leadership Forum Seattle Regional Hub](#), among others.

OFFSET

The “Offset” action refers to upfront embodied carbon. What is it?

Miller Hull defines upfront embodied carbon as the sum of global warming potential (GWP) incurred during raw material supply, transport, and manufacturing phases for building materials (A1-A3). Due to data availability constraints, the “Offset” action does not currently cover

transport of materials to site, and the construction of materials on site (A4-A5). We intend to re-evaluate this scope as more transportation and construction life cycle impact data becomes available, and expand the scope of our offset purchases to these stages in the future.

Emission Zero primarily focuses on immediate climate impact. Use stage, end of life, or other impacts beyond the life cycle (B1-D) are not included to determine the size of our offset purchases. The scope of Emission Zero does not include the demolition of existing structures on-site, or design for disassembly.

More guidance on life cycle stage definitions can be found [here](#). See Figure 1 for WBLCA scope clarification.

Which building materials are included in the whole building life cycle assessment used to inform the purchase of offsets?

At this time, Miller Hull is including substructure, superstructure, envelope, and fixed interior building elements in whole building life cycle assessment studies.

Sitework, mechanical / electrical / plumbing systems, furniture, fixtures and equipment, and on-site renewable solar energy systems are not included. We recognize the importance of ongoing research to quantify the environmental impacts of these building elements, especially MEP systems dependent on high-GWP refrigerants, and continue to contribute [funds to organizations advancing this research](#). See Figure 1 for WBLCA scope clarification.

Why is Miller Hull committing to purchase offsets equivalent to **one-third** of A1-A3 emissions for superstructure, substructure, envelope and fixed interior building elements of constructed projects?

Every building project we complete involves a diverse range of stakeholders with decision-making power – and therefore, a complex network of responsibility for the climate impacts of the projects we construct. Accurate allocation of climate impacts to every party is not currently possible, which is why we are using “one third” as a proxy ratio to reflect that buildings represent a collaboration between owners, the design team, and the construction team. We invite our owner and contractor colleagues to join us to offset the entire upfront global warming potential incurred by the projects we construct.

What is a carbon offset?

A single carbon offset is a tradable unit that represents one metric ton of CO₂ equivalent that is *not* released into the atmosphere, due to the implementation of a carbon offset project. Carbon offset projects are specific activities intended to reduce or avoid greenhouse gas emissions, increase the storage of carbon, or enhance greenhouse gas removals from the atmosphere. More information available [through the EPA](#).

How do you select carbon offset projects?

The global voluntary carbon offset marketplace includes many types of carbon projects and offsets. We work with [3Degrees](#) to select the carbon offset project that best responds to each of the projects we design. While we do not have a ‘hard’ rule for selecting offsets, we intend to pursue [Green-e Climate certified offsets](#) to ensure the projects we fund are permanent,

additional, verifiable, enforceable, real, and measurable. Read more about carbon offset additionality [here](#).

How much does the offset action cost?

The cost per carbon offset is currently highly variable based on the location and type of carbon offset project. Miller Hull is currently targeting carbon offset purchases in the \$2-10 range per ton of CO₂e.

Will you be retroactively offsetting any of your past work?

Not yet! Emission Zero applies to projects that finish construction in 2021 and onwards.

			MATERIAL SCOPE							
			SUPERSTRUCTURE	SUBSTRUCTURE	ENCLOSURE	FIXED INTERIORS	SITework	FFE	MEP	PV
Life cycle stages, as defined in EN 15978										
LIFE CYCLE STAGE SCOPE	A1	Raw material supply								
	A2	Transport								
	A3	Manufacturing								
	A4	Transport								
	A5	Construction / installation	SCOPE OF WBLCA TO DETERMINE PURCHASED OFFSETS							
	B1	Use								
	B2	Maintenance								
	B3	Repair								
	B4	Refurbishment								
	B5	Replacement								
	B6	Operational energy use								
	B7	Operational water use								
	C1	Deconstruction / demolition								
	C2	Transport								
	C3	Waste processing								
	C4	Disposal								
	D	Beyond the lifecycle								

Figure 1: Current scope of whole building life cycle assessment (WBLCA) to determine purchased offsets per project.

