

## Harka - Green Globes Journey to Net Zero Case Study

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### Small Space, Big Impact: Harka's Green Globes Journey to Net Zero Certification

When Harka Architecture, an innovative firm based in Portland, Oregon, set out to renovate their 1939 Art Deco office building they zeroed in on increasing energy efficiency and reducing their operational and embodied carbon emissions. This emphasis should come as no surprise to those familiar with their work. Harka prides itself on their core objective: “to create beautiful and inspiring spaces that possess the lowest carbon footprint possible while empowering their inhabitants to live environmentally responsible and toxin-free lifestyles.” To evaluate and measure the impact of their design strategies, and transparently demonstrate progress, Harka elected to participate in the Green Building Initiative's (GBI's) Green Globes Journey to Net Zero pilot program.

The Green Globes Journey to Net Zero was developed with the same commitment to rigor, accessibility, and support as GBI's Green Globes whole building certification program. The program consists of two protocols, Green Globes Journey to Net Zero Energy and Green Globes Journey to Net Zero Carbon, which may be pursued independently or together according to the user's sustainability goals and/or reporting requirements. The Green Globes Journey to Net Zero Energy and Green Globes Journey to Net Zero Carbon protocols evaluate site Energy Use Intensity (EUI) and CO<sub>2</sub>e emissions, respectively, which Harka used to assess reductions in energy and carbon emissions.

Resource and spatial restrictions required the team at Harka to prioritize sustainability features that would yield the greatest reductions in site EUI and CO<sub>2</sub>e. Additionally, the renovation posed unique challenges, such as air sealing a 1939 stucco building and balancing aesthetics with high-performance strategies and low-carbon materials. With these constraints, Harka sought to create a space that would be educational for current and future clients. The design team was intentional about material selection and included strategic reveals in the office to expose materials that would otherwise remain hidden, such as the 5.5” of hempwool ceiling insulation layered with 13” of cellulose (achieving an R-value of 66). Patrick Donaldson, the Principal Architect and Owner of Harka Architecture, emphasized their commitment to salvaging the lumber, trim, and lath and plaster walls from the existing building, a former dentist office. Additionally, they minimized the use of concrete and carefully selected new materials – opting for low-carbon and non-toxic options such as Gutex wood fiber boards for insulation, non-latex milk paint for the interior, and FSC certified lumber.

Harka's strategies for reducing carbon emissions led to achievement of their Net Zero goals. Attaining a “91.8% reduction in overall carbon emissions (scope 1, 2, and 3)” was no small feat, and necessitated careful consideration of carbon over the 60-year life span of the building. Their approach to the building's design and materials selection was integral to their nearly 92% reduction in overall carbon emissions. To reach 100% reduction (required for certification), Harka purchased 1 tonne of carbon offsets for their embodied carbon under a 3-year commitment.

Championing energy use and carbon emissions reductions in their capacity as an architecture firm, the assessment process confirmed that Harka lived up to their core tenets through the renovation of their Portland office. Their Green Globes Assessor (GGA) concluded that the building satisfied GBI's minimum requirements and demonstrated energy consumption reduction of over 100% as compared to an ASHRAE 90.1-2016 baseline model and 100% reduction in carbon emissions, earning the Harka office Green Globes Journey to Net Zero Certification for both Energy and Carbon.

Certification for both protocols is a remarkable accomplishment and was directly underpinned by Harka's strong commitment to reducing their site EUI and CO<sub>2</sub>e. Harka installed an onsite renewable energy system (rooftop solar) that provides 123.6% of the proposed design site energy consumption. For good measure, Harka also purchased third-party instruments, "which were in excess due to the PV grid offsetting the entire energy consumption" (Harka 2024).

The Harka team explained that the results were expected and fell largely in alignment with their models, but the Green Globes Journey to Net Zero assessment provided third-party assurance of their CO<sub>2</sub>e emissions and site EUI projections. With the help of their assessor and GBI's Green Globes Net Zero Calculator, the data clearly showed that the building exceeded their expectations for both metrics. Achieving Green Globes Journey to Net Zero certification for both Energy and Carbon validated their decision-making processes and has enabled Harka to discuss their accomplishments with even greater confidence.

The Harka team spoke to the importance of a third-party assessment process, not only for recognition of their endeavor, but also to advance the industry as it grapples with measuring carbon and energy reductions in the built environment. Emphasizing that "trying to set a baseline for the industry is important," Melissa Russell, a designer with Harka, highlighted the challenge of designing for Net Zero in an environment where there has been a notable lack of standardization and industry-wide agreement.

GBI's Green Globes Journey to Net Zero program supports the broader effort to bridge that gap and lead the industry toward a future where definitions and calculations are consistent, and assessment is standard. GBI developed Green Globes Journey to Net Zero in alignment with the U.S. Department of Energy (DOE) National Definition of a Zero Emissions Building to create uniformity within the commercial real estate sector on the achievement of emissions reduction goals. Such consistency and shared understanding are becoming even more essential as stakeholders across the public and private sectors further embrace these targets, whether as a result of their regulatory environment or ESG reporting requirements, or to compare progress within the industry and move the needle toward a more sustainable built environment.

Harka's office renovation demonstrates their commitment to sustainable, low-carbon architecture. Patrick reiterated that "we are founded on this idea of low carbon...that's our DNA, and acknowledged that Green Globes Journey to Net Zero certification promotes this aspect of their identity:

*To get that recognition is important to the public...to be a participant is critical.*

GBI's Green Globes Journey to Net Zero is designed to meet building owners and portfolio managers where they're at, whether they're just beginning to implement energy and carbon emissions reduction strategies or have already made significant progress. Harka's office renovation demonstrates that the impact from one building, no matter its size, is significant, and can serve as an example for others. GBI's focus on Net Zero represents a larger effort to push the industry forward as we reckon with the unique challenges of achieving energy and carbon emissions reduction goals. To get involved and learn how GBI's Green Globes Journey to Net Zero can be used to assess your building or portfolio, please visit <https://thegbi.org/journeytonz/> or reach out at [info@thegbi.org](mailto:info@thegbi.org).

## Bibliography

Harka Architecture. 2024. "Harka's HQ is Net Zero Energy & Net Zero Carbon Certified." Accessed September 17, 2024. <https://harkahq.com/harka-slog/2024/7/9/p6q3v930tgulu6w8lq9qfgw2bj5b82>.

Harka Architecture. n.d. "About." Accessed September 17, 2024. <https://harkahq.com/about-1>.

Harka Architecture. n.d. "HARKA Headquarters: Bringing a Sustainably-Minded High-Performance Renovation to Life." Accessed September 17, 2024. <https://harkahq.com/harka-headquarters>.

Humphries, Buddy. 2024. "GBI's Green Globes Journey to Net Zero Assessment Report: Harka HQ."