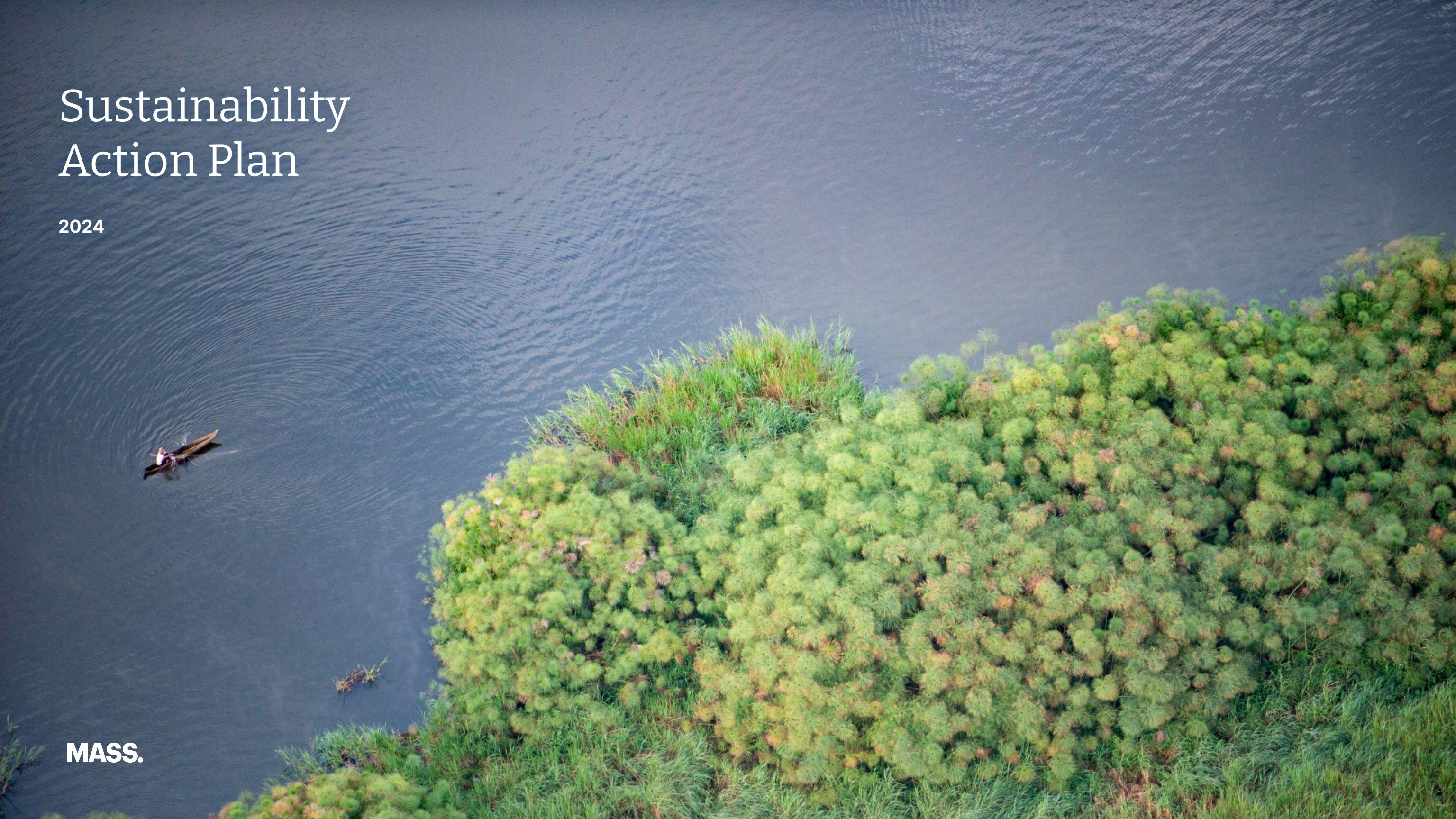


Sustainability Action Plan

2024

MASS.



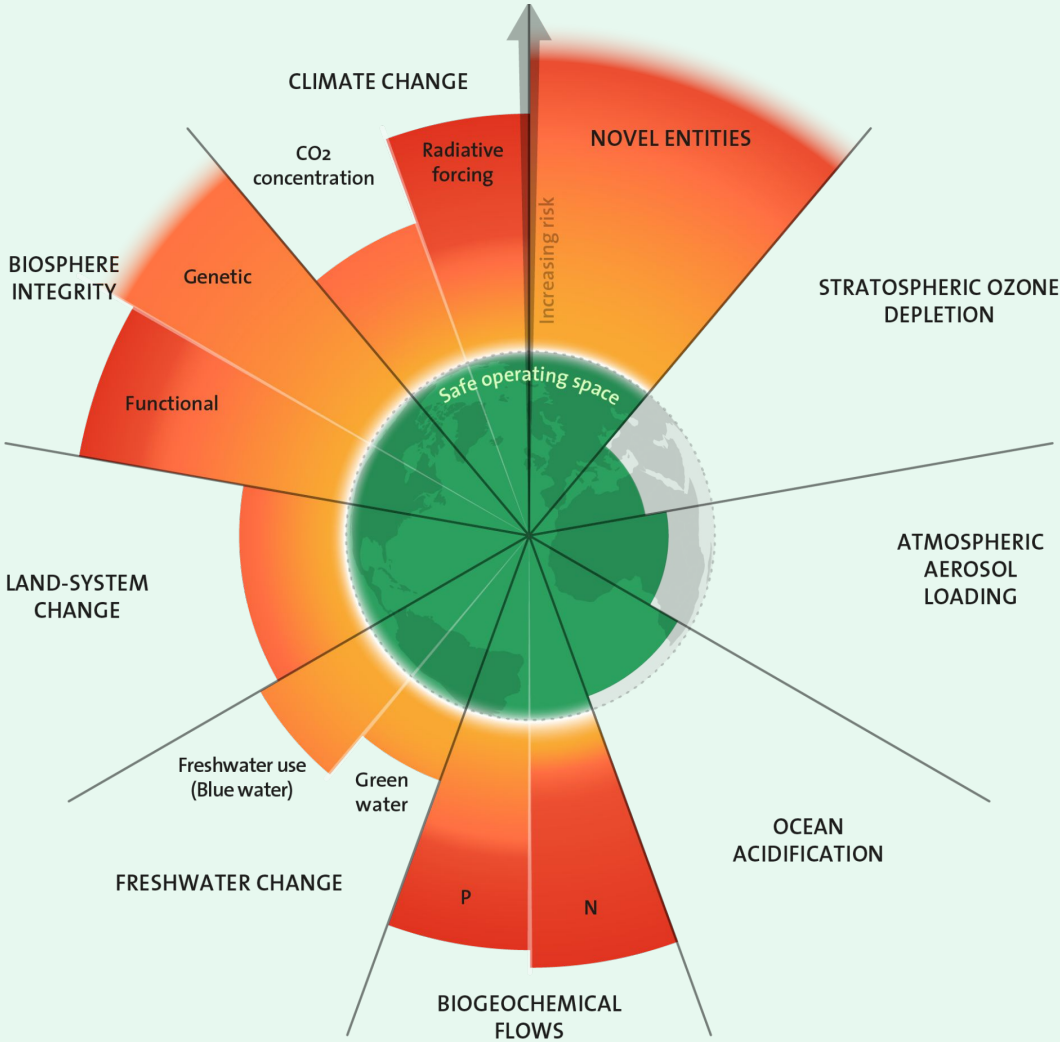
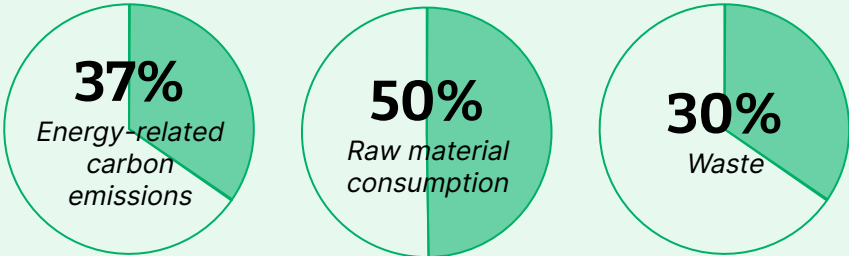
Call to Action

Design is never neutral.
It either hurts or heals.

In our rapidly evolving world, we find ourselves entangled in an intricate web of social and environmental challenges—a tapestry woven with threads of complexity and urgency. We have overshoot 6 of the 9 planetary boundaries, and ever increasingly at risk of large-scale and irreversible environmental changes. Climate change, biodiversity loss, resource depletion, pollution, inequality, isolation and unhappiness are symptoms of an exploited world of unchecked consumption.

Globally the construction industry is the biggest consumer of raw materials (50 billion tonnes annually) and produces a third of all waste. Buildings are responsible for nearly 40 percent of greenhouse gas emissions and energy consumption. Construction and its impacts continue as floor space worldwide is set to double by 2060, the equivalent of building a city the size of New York every month.

Globally the built environment sector is responsible for ...



▲ As of 2023, we have transgressed 6 of the 9 planetary boundaries, according to the Stockholm Resilience Centre.

An aerial photograph showing a sharp boundary between a patchwork of agricultural fields on the left and a dense, dark green forest on the right. The fields are divided into small, irregular plots of various shades of green and brown, with some small buildings and trees scattered throughout. The forest is a solid, dark green mass with visible tree trunks and canopy texture.

Call to Action

Our actions today determine the legacy we leave for future generations.

The call to address these challenges is not just a responsibility—it is a shared commitment to fostering a planet that thrives in harmony and a society where every voice is heard.

◀ This image of the border of **Volcanoes National Park** highlights the pressure humans have put on the rest of the living world.

About MASS Design Group

We are not here merely to
design buildings. We are here
to champion our living world.

We are 130+ architects, landscape architects, engineers, writers, film makers, and researchers representing 20 countries across the globe.

We design for a flourishing planet that reinstates humanity within nature. Across geographies, our design philosophy embraces the interconnectedness of human, animal, and ecological health. We accomplish this by researching, building, and advocating for design that promotes justice and dignity.

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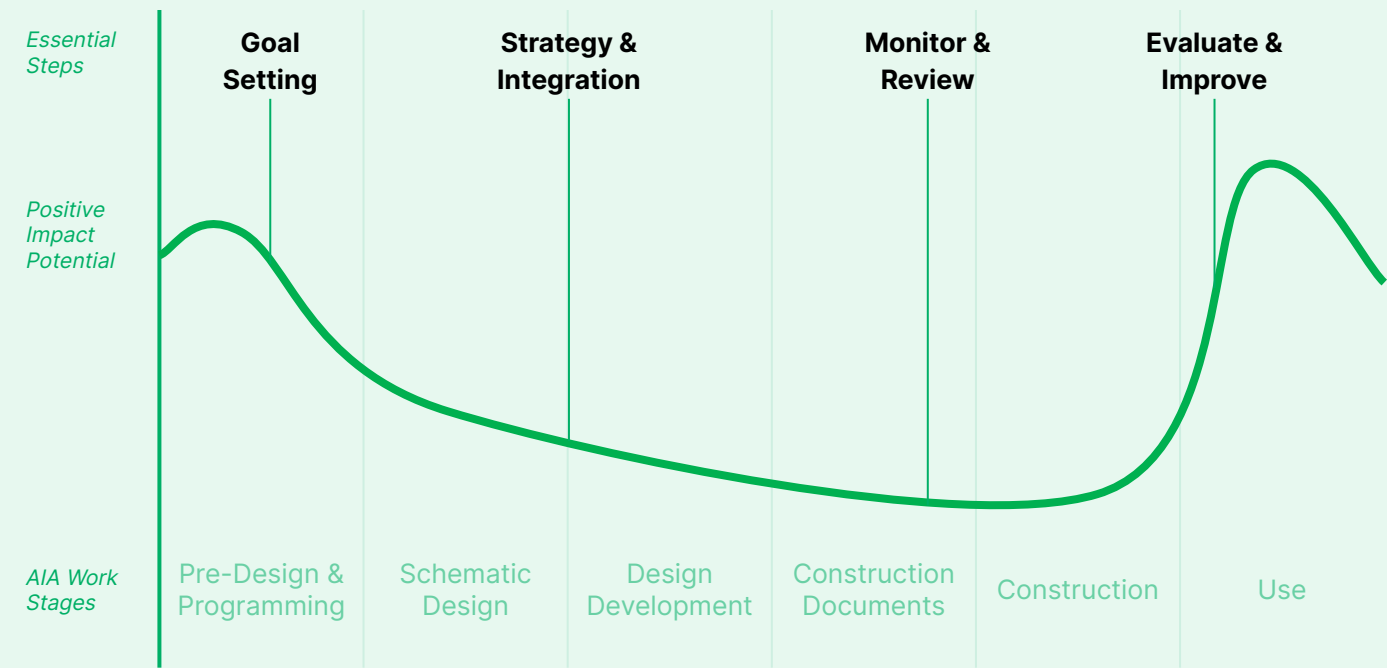
Our Approach

We envision a world where our projects support flourishing life for future generations.

To bring big ideas beautifully into the world, we need to start early—even before architects are contracted—by setting goals and asking whether buildings are the right solution for our partners. Regenerative strategies are integrated into the design and project goals monitored throughout. Evaluations for internal learning and to share with the wider industry commence after the project is in use.

Our Performance & Provenance approach allows us to design buildings and landscapes that deliver a climate positive future to protect and enhance biodiversity, providing life-changing benefits to the communities we serve.

Our global Performance & Provenance team support every project whenever it is needed, from goal setting to evaluation, through Champions that are embedded within studios and design teams.



Impact Framework

With imagination, every problem is an opportunity for new thinking.

To support design teams in setting project targets, strategies for achieving them, and methodologies for evaluation, we have developed an Impact Framework that is structured around the three systems:

- Material systems
- Building systems
- Ecosystems

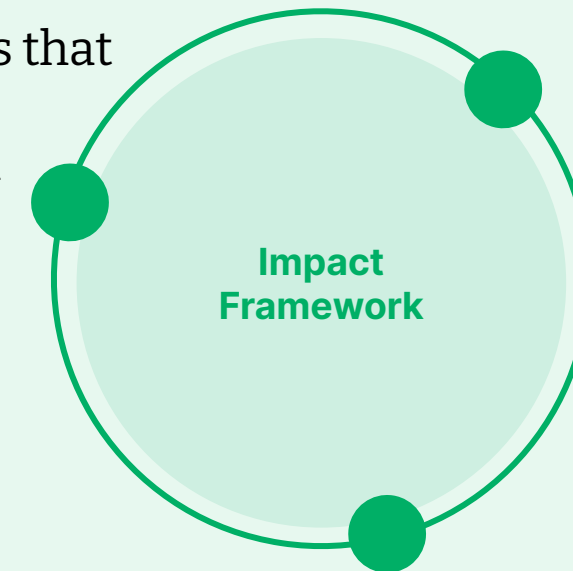
Unlike mechanistic rating systems, this Impact Framework considers regenerative questions to encourage imaginative strategies that consider the project's unique opportunities and constraints. A diverse range of impact measurements are encouraged to form a balanced evaluation.

Embodied impacts of Material Systems

We craft buildings that generate thriving communities and ecosystems.

Operational impacts of Building Systems

We create efficient spaces that inspire and improve outcomes.



Stewarded impacts of Ecosystems

We grow landscapes that regenerate the planet.

Regenerative Questions

Material Systems

Embodied Carbon	How can the building be a carbon sink, not an emitter?
Sufficiency	How can we use what is already here?
Circularity	How will there be zero waste in the future?
Toxicity	How can materials be safe for all species across the whole life of the material?
Labor	How can materials ensure fair labour practices and support local marginalized groups?
Craft	How can materials create opportunities for cultural expression and collective action?

Building Systems

Operational Carbon	How can the project produce zero greenhouse gas emissions during its operation?
Air	How can the project clean the air to improve the health of everyone?
Light	How can daylight provide delight and warmth?
Water	How can the project gently intercept the water cycle without harm?
Healthy Lifestyle	How can the space improve physical and mental health?
Resilience	How can community needs always be provided for?

Ecosystems

Sequestered Carbon	How can the project be climate positive?
Soil and Water	How can the site improve soil and water health?
Biodiversity	How can this place be as generous as the wild place next door?
Food	How can this project nourish the users and community?
The Commons	How can this project be radically accessible for and belong to all people?
Journey	How can travel to and from the site be as enjoyable as the destination?

Material Systems



- ▲ **Adobe Block (Rukarakara) Standards** deliver systemic change by improving the safety, durability, and affordability of adobe housing for the most vulnerable communities in Rwanda. An adobe home mitigates the adverse impacts of deforestation and air pollution, and entails 2.9 tonnes CO₂e less than an equivalent fired brick home. When following these standards, adobe requires no chemical binders, so it is not toxic for humans or the environment and can be returned to the earth without harm at its end of life.
- **The Cementerio del Barrio de los Lipanes** (Cemetery of the Lipan Neighborhood) in Presidio, Texas, represents a significant effort to reclaim and protect an Indigenous burial site, promoting its preservation, healing, and landback efforts. This initiative showcases the synergy between architectural and landscape, illustrating that traditional building solutions may not always be the most appropriate response. Given the site's remoteness, coupled with its harsh weather and ecological challenges, the project team prioritized the use of materials that were accessible, easy to work with, long-lasting, and environmentally friendly.



Building Systems



- ▲ **Scenic Hudson's Northside Hub** in Poughkeepsie, NY, is an adaptive reuse of a former factory building into a regenerative public landscape, rental space, and office space for one of the regions' oldest environmental organizations. The building is expected to use 70% less energy than an equivalent baseline. The all-electric, net zero energy, building shall produce twice as much energy through its solar arrays than the building is expected to use, giving the excess to the grid.
- ▶ **Munini District Hospital** is a 300-bed hospital that implements hospital design standards developed by MASS for one of Rwanda's most rural districts. The buildings are strategically opened up, allowing for the passage of prevailing winds, facilitating natural cross ventilation and reducing the risk of disease transmission. The central garden space provides areas for rest and social connection.



Ecosystems



- ▲ **The Rwanda Institute for Conservation Agriculture** campus combines research, education, and extension services to train Rwanda's next generation of leaders in agriculture while supporting national priorities for agricultural development. The curriculum and campus design are informed by Conservation Agriculture and One Health Principles, both of which emphasize the interlinking of ecological, animal, and human health. These principles are reinforced by taking an interdisciplinary, experiential approach to learning, with a campus that promotes biodiversity, ecological conservation, and community participation.
- **The Franklin Park Action Plan** was an 18-month, community-driven planning effort that sought to revitalize Boston's Franklin Park. MASS performed architecture, planning, and urban design services alongside community engagement to design a space that meets the needs of all visitors and neighbors, supports healthy ecosystems, and cultivates diverse and dedicated stewardship of the park.

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Goals

A climate-positive future where all life can thrive is possible.

We will continue to ask the regenerative questions and measure a diverse form of impact under the Impact Framework, however the AIA 2030 commitment and this Sustainability Action Plan provides us the opportunity to set non-negotiable minimum targets that our partners are committing to by working with us. As an organization we have chosen to elevate those metrics that respond directly to the Climate & Biodiversity crisis. A climate positive project is defined as one that offsets or sequesters more carbon than is emitted through the construction and operation. By storing carbon in our buildings, providing excess renewable energy to the grid and growing diverse ecosystems we will have a regenerative influence on the climate.

A combination of tools will be used for measurement including One Click LCA, Revit Insight and Ecosystem Intelligence Screening Tool. Designs will be compared to reference buildings, existing benchmarks or reference ecosystems, as is appropriate for the typology and geography. Progress will be reported annually and data uploaded to the AIA 2030 DDX.

Embodied Impacts of Material Systems Goal

Measure embodied carbon and reduce it on every project by 50% by 2030.

Operational Impacts of Building Systems Goal

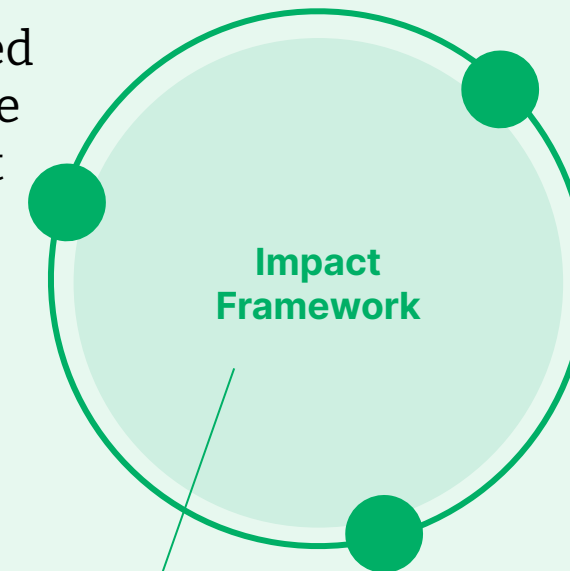
Measure net operational carbon and reduce it on every project by 90% by 2025 and 100% by 2030.

Climate Positive Goal

By 2030, 50% of projects shall demonstrate they will be climate positive by 2050.

Stewarded Impacts of Ecosystems Goal

Measure and increase ecosystem benefits of our sites.



Together we can leverage the power of design
to restore planetary health.



Sources

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- United Nations Environment Programme (2022). 2022 Global Status Report for Buildings and Construction: Towards a Zero-emission, Efficient and Resilient Buildings and Construction Sector. Nairobi.
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- Adobe Block (Rukarakara) Standards. Partners: Rwanda Housing Authority, Rwanda Standards Board, Rwanda Polytechnic, EarthEnable, Greenpact Africa; Location: Rwanda; Year Completed: 2022.
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- Scenic Hudson's Northside Hub. Client: Scenic Hudson; Location: Poughkeepsie, NY, USA; Year Completed: 2019-In Progress.
- Munini District Hospital. Client: Government of Rwanda, Rwanda Ministry of Health; Location: Munini, Rwanda; Year Completed: 2022.

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- The Rwanda Institute for Conservation Agriculture. Client: Howard G. Buffett Foundation, Rwanda Institute for Conservation Agriculture, Government of Rwanda; Location: Gashora, Rwanda; Year Completed: 2023
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