



HGA

2024
SUSTAINABILITY
ACTION PLAN



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01
ABOUT HGA





Lamond-Riggs Lillian J. Huff Library

GUIDED BY OUR VALUES

1. Start with Curiosity
2. Build Empathy
3. Do meaningful work
4. Seek originality
5. Leave a lasting impact

HGA's core values drive us to take action on climate change for the protection of our communities and our planet. We are committed to leaving a positive impact on the world through sophisticated, human-centered design responses to the most profound challenges of our time. We believe it is our responsibility to shape the future through design.

About HGA

HGA is an interdisciplinary professional services firm committed to making a positive, lasting impact for our clients and communities through research-based, holistic solutions. We believe that great outcomes require a sense of curiosity—forming deep insights into our clients, their contexts, and the human condition. As a collective of designers, engineers, planners, researchers, facilitators, and strategists, we seek to understand and optimize all aspects of each unique environment: human experience, sustainability, resilience, operational efficiency, and cultural impact.

Founded in Minneapolis in 1953, HGA now has 13 locations coast to coast. Our practice spans multiple markets, including government, corporate, arts, community, education, healthcare, and science and technology.

We are a values-based learning organization. Our business is rapidly changing, and we respond with agility. In our 70+ years, we have learned through feedback loops, including qualitative and quantitative data, structured and unstructured, that we thrive and grow when we lead with our values.

With nearly 40% of annual global emissions generated by the building sector,¹ architects, engineers, and owners need to set—and reach—drastic carbon reduction goals to limit planetary warming. Based on current data, Architecture 2030 has accelerated the 2030 Challenge to today, recommending that all new buildings and major renovations be designed to be zero carbon. Indeed, we have seen a measurable uptick in clients increasing requirements for climate-responsive and resilient design—and requesting that design partners publish their own sustainability goals.

¹ "Why the Built Environment?" Architecture 2030.



ARCHITECTURE



COMMISSIONING



DIGITAL PRACTICE



ENGINEERING



INTERIOR DESIGN



LANDSCAPE ARCHITECTURE



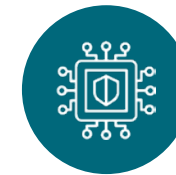
LIGHTING DESIGN



PLANNING



SUSTAINABILITY & RESILIENCE



TECHNOLOGY

02
OUR WHY





A Responsibility to Act

There has never been a more important time to take responsibility for our actions. The world is experiencing unprecedented rates of change in climate, energy supply, technology, and business—all of which impact the human experience. We are committed to designing for change.

As designers of the built environment, we have a unique and inspiring opportunity to shape a positive future.

To us, good design and sustainability are intertwined and inextricably linked. Our projects become beloved parts of their communities, support the health and wellbeing of their inhabitants, and reach the highest levels of building performance.

As a signatory of the AIA 2030, SE 2050, and MEP 2040 challenges and the AIA Materials Pledge, we are committed to meeting our clients' goals as well as challenging our industry. This means developing the expertise and research to push beyond net zero energy to net positive energy; from a neutral effect on health, safety, and resources, to a positive one. As the need and desire for sustainable environments grow, so does the focus on high-performance buildings with sound data that we can share back with clients and our design teams.

Our Commitments



The AIA 2030 challenge sets operational carbon reduction targets for projects, working towards net zero on all projects by 2030. Teams are encouraged to include a net zero or net zero ready design option on projects and review with owners. HGA's internal AIA 2030 goals include:

1. 100% of eligible projects reporting to AIA 2030
2. Annual 10% EUI reduction to achieve net zero energy by 2030 (2024 target: 65% reduction below baseline)
3. Define when energy modeling makes sense, and model 100% of those projects.

Signatory since 2009



The SE 2050 challenge aims to reduce embodied carbon in structural systems on projects through the use of less and/or lower carbon structural materials. As a signatory, HGA is aiming toward net zero embodied carbon structural systems by 2050. Goals include:

1. 2024: Report 75% of applicable projects to SE 2050
2. 2025: Report every applicable project to SE 2050
3. by 2030: reduce embodied carbon in structural systems by 20%
4. Reduce embodied carbon in structural systems by 20% each subsequent 5 years to achieve zero by 2050.

Signatory since 2021

MEP 2040 Committing to Zero

We aim to advocate for and achieve net zero carbon in MEP systems, achieving net zero operational carbon by 2030 and net zero embodied carbon by 2040. By joining the MEP 2040 challenge, HGA Mechanical, Electrical, and Plumbing engineers are committing to:

1. Continuous development of this company plan to reduce operational and embodied carbon for MEP systems on all projects. Measure and report progress against that plan annually.
2. Request low-GWP refrigerant availability when designing systems to reduce or eliminate GHG emissions from refrigerants.
3. Request environmental product declarations (EPDs) in project specifications for MEP system components.
4. Participate in MEP 2040 forums and working groups to share lessons learned and contribute to a growing body of knowledge.

In 2024, we aim to report two projects to MEP 2040. We are working to set additional concrete goals for subsequent years.

Signatory since 2023



From improving indoor air quality to reducing construction waste, the materials we specify matter. To confirm our commitment to healthier and sustainable materials specifications, HGA has adopted the AIA Architecture & Design Materials Pledge, and commits to supporting:

1. **Human Health** by preferring products that support and foster life throughout their life cycles and seek to eliminate the use of hazardous substances.
2. **Social Health & Equity** by preferring products from manufacturers that secure human rights in their own operations and in their supply chains, positively impacting their workers and the communities where they operate.
3. **Ecosystem Health** by preferring products that support and regenerate the natural air, water, and biological cycles of life through thoughtful supply chain management and restorative company practices.
4. **Climate Health** by preferring products that reduce carbon emissions and ultimately sequester more carbon than emitted.
5. **A Circular Economy** by reusing and improving buildings and by designing for resiliency, adaptability, disassembly, and reuse, aspiring to a zero-waste goal for global construction activities.

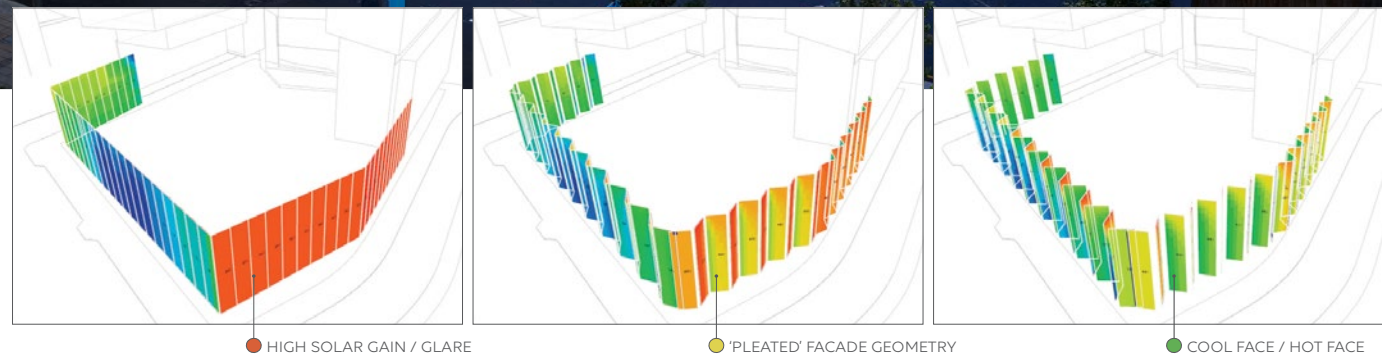
HGA MATERIAL SELECTION GOALS:

1. Baseline: Human Health and Climate Health transparency required in acoustic ceiling tile, carpet, and resilient flooring specifications.
2. 2024-2025: Develop methodologies to report on this baseline.
3. 2026 and Beyond: Expand baseline to other sustainability pledge areas, categories, and material types.

Signatory since 2022



STRIKING THE RIGHT NOTES Capital One Hall, a LEED Gold Certified entertainment venue, has become a beloved cultural amenity in the growing Tysons, VA community. The integrated design team achieved many facets of high performance, including tuning the envelope geometry and the arrangement of stone and glass to balance form, maximize daylight, and minimize heat gain.



SUSTAINABILITY BASELINE ON EVERY PROJECT

Throughout over 70 years of experience, we have developed an integrated, holistic approach to our work at HGA, focusing on teams rather than silos. Collaboration happens early and often, resulting in innovation throughout the design process. With the impacts of climate change growing every day, this mindset is even more important—we have no time to waste.

We are continually identifying potential new methods and opportunities for improvement based on practice and research; testing those new ideas; and using lessons learned to inform future improvements.

To ensure that sustainability is fully embedded in design, we encourage design teams to use the AIA Framework for Design Excellence as a guide for project goal setting and conversations with clients throughout the process. The AIA Framework aligns with our dedication to holistic design as it addresses resources, human and ecological health, equitable communities, and research.

Our holistic design process includes:

- 1. Identifying a sustainability lead** on the design team who is responsible for leading the project team and client through sustainability goal setting; identifying design strategies to achieve those goals; and ensuring those strategies are represented in design and construction documents.
- 2. Setting sustainability goals for every project** in partnership with the client. If applicable based on project scope, this will include setting targets for operational carbon and embodied carbon in alignment with our industry commitments.
- 3. Tracking progress** toward achieving those goals, including annual reporting for AIA 2030, SE 2050, and MEP 2040.

OUR VISION FOR THE FUTURE

2024-2026 SUSTAINABILITY STRATEGIC PRIORITIES

Sustainability plays a key role in our business and strategic plan, responding to the growth in demand for sustainable design we have seen in recent years. Our Sustainability Steering Committee sets strategic priorities that are integrated into the firmwide strategic plan and establish a north star for initiatives and investments. We reinforce these priorities with incentives, by measuring key performance indicators, and celebrating successes.

SUSTAINABILITY IS INTEGRAL TO HOLISTIC DESIGN

GOAL: At HGA, we have a holistic, sustainable design practice.

ELEVATE BASELINE OF KNOWLEDGE + EXPERIENCE

GOAL: Every HGAer, regardless of role, knows how to integrate sustainability into their work.

WE ARE ACCOUNTABLE: SUSTAINABILITY IS EVERYONE'S JOB

GOAL: Sustainability is integrated at all levels of the firm: in all strategic plans, on projects, and our roles as leaders and individual contributors.

03
OUR NETWORK



Wolf Ridge Environmental Learning Center



DEEP EXPERTISE IN BUILDING PERFORMANCE

HGA's Building Performance Group is a team of subject matter experts specializing in third-party certifications and energy. Their expertise includes:

- Certification administration, including: LEED, WELL, Living Building Challenge, Minnesota B3, and SITES
- Commissioning and retro-commissioning
- Decarbonization strategies and net zero energy
- Environmental analysis and energy modeling
- Integrated renewable and high-performance systems such as geothermal and solar PV
- Microgrid design
- Utility incentive programs

- **Building Performance Group.** Energy and certifications specialists support all regions and work with all market sectors.
- **Subject Matter Experts** on a variety of sustainability topics are embedded in departments and market sectors and are leveraged as integral team members on some projects and advisors on others.
- **Knowledge Communities.** Subject matter experts work together to identify and develop the needed tools, resources, and education to advance knowledge and expertise in specific sustainability subjects.

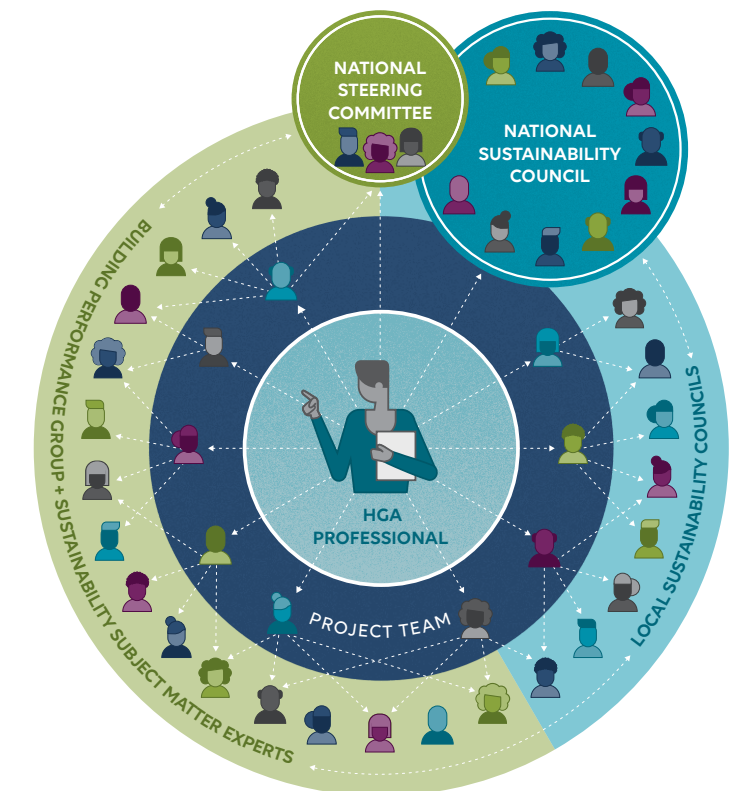
As of 2024, our Knowledge Communities include:

- » AIA 2030 Reporting
- » Building Envelope
- » Carbon Accounting (HGA operations)
- » Data Management
- » Daylighting
- » Early Energy Analysis (ENERGY.script)
- » Embodied Carbon & Life Cycle Assessment
- » Energy Modeling
- » Learning & Development
- » Marketing
- » Materials
- » Mass Timber
- » MEP 2040 Reporting
- » Resilience
- » SE 2050 Reporting

- **Task Forces.** For timely, short-term efforts, task forces are leveraged to define a need and identify and execute the initial steps toward resolving the need. Unlike Knowledge Communities, which are ongoing, Task Forces may exist for 1-3 years and then evolve, merge into other efforts, or dissolve. As of 2024, our Task Forces include:

- » Energy Conservation Measures Software Pilots
- » Geothermal Education & Marketing Materials
- » Inflation Reduction Act Incentives
- » Mechanical Engineering Design for AIA 2030 improvements
- » Net Zero Design Guidelines
- » Solar PV Education & Marketing Materials
- » Whole Carbon Balancing

- **Sustainability Leads.** Every project must have a sustainability lead who works with the team to integrate sustainability goals into the project, implementing strategies to achieve those goals, tracking progress, and reporting on the outcome, including AIA 2030, SE 2050, and MEP 2040 reporting. Leads can be a subject matter expert or member of the sustainability network, or a project team member who will take on these responsibilities.
- **Design Process, Quality, & Standards.** HGA's Director of Operations, **Sarah Berseth**, oversees Holistic Design, elevating our baseline of practice through process improvements, tools, resources, and education. The Allied Disciplines department and Digital Practice Group create standards and resources that streamline project execution and aim to continually improve quality. Along with the Sustainability Operations Leader, these departments and the firmwide Quality Roundtable have been collaborating to make sustainability more integral to our design process. Ongoing efforts include:
 - » Cost estimating for high performance systems and embodied carbon reduction
 - » Holistic Design, integrating our sustainability goals and commitments into practice
 - » Specification updates, elevating our MasterSpec baseline expectations
 - » Sustainability G Sheet



OUR COMMITMENTS: KNOWLEDGE COMMUNITIES



AIA 2030

The *AIA 2030 Reporting* Knowledge Community works to streamline annual reporting and bulk uploads to the AIA DDx. Led by Sustainability Coordinator **Annelise Hodge** and Senior Sustainability Specialist **Molly Dunlap**, this team coordinates with the Sustainability Network to ensure all eligible projects have reported their AIA 2030 metrics. Several other knowledge communities and task forces are working to integrate AIA 2030 energy benchmarking, reduction targets, and high performance design into our practice, including Holistic Design, Mechanical Engineering Design, Net Zero Design Guidelines, and Energy Modeling.



SE 2050

The Embodied Carbon & Life Cycle Assessment and SE 2050 Reporting Knowledge Communities work to integrate embodied carbon reduction into our practice, focusing on structural systems, envelope, and interior materials. They are both led by **Ethan Fogle**, a structural engineer and member of the Sustainability Steering Committee who serves as HGA's Embodied Carbon Reduction Champion, and **Alayna Lotto**, a Life Cycle Assessment expert and Sustainability Specialist on the Certifications team in our Building Performance Group. These communities also include representatives from the Building Performance Group energy team, Structural Engineering, Architecture, and Interior Design.



MEP 2040

The *MEP 2040 Reporting* Knowledge Community is working to integrate embodied carbon reduction into our mechanical, electrical, and plumbing practice, and leads the development of the MEP 2040 reporting strategy. Mechanical engineer **Alfred Uzokwe** and engineer-in-training **Alexis Sheeto** lead the Knowledge Community, which also includes representatives from the Building Performance Group energy team. They work with Engineering leadership to create the tools, education, and workflows needed to advance our MEP 2040 commitment. Operational carbon reduction efforts are intertwined with AIA 2030.



AIA MATERIALS PLEDGE

The *Materials* Knowledge Community works to set HGA's materials baseline, update our interior materials libraries, and create education, tools, and resources designers and specifiers need to integrate our baseline expectations into practice. Led by **Haley Nelson**, Design Principal and National Interior Design Expertise Leader and Sustainability Specialist **Alayna Lotto**, the community includes representatives from the Building Performance Group, Certifications Team, Specifications, Architecture, and Interior Design.



1953-2013

GRASSROOTS

From the earliest days, HGA projects integrated daylight, biophilia, and close relationships with natural landscapes. As engineering disciplines joined the firm, leadership in energy efficiency began to grow.



1950s

WELL-BEING IN SCHOOLS

K-12 schools maximized daylight access while orienting to minimize solar heat gain.



1986

1ST FOSSIL FUEL FREE PROJECT

H.B. Fuller Company
Willow Lake Research Lab



2006

1ST LEED CERTIFIED PROJECT

Milwaukee Marine
Terminal Renovation

2000

1ST COTE TOP 10 AWARD

McLean Environmental Living and
Learning Center in partnership with LHB

2009
FOUNDING SIGNATORY



2010

1ST NET ZERO ENERGY PROJECT

College of the
Desert Master Plan



2014-2017

CONNECTED

Expansion to multiple offices across the country made the need for coordinated sustainability initiatives clear. Efforts to connect high performance experts from across the firm led to a strategic vision for elevating sustainability across our practice.

2014

SUSTAINABILITY COUNCIL FORMED

connecting champions from all offices and disciplines to develop education, tools, and resources to support project teams.

2015

RESILIENT DESIGN TASK FORCE FORMED

to begin developing resilient design and climate change adaptation services.



2016

1ST FITWEL CERTIFIED PROJECT

B.H. Whipple Federal Building

FUTURE OF SUSTAINABILITY TASK FORCE FORMED

HGA's CEO charged the Sustainability Council with identifying a path to an integrated sustainable design practice.

2018-2019

CENTRALIZED

To advance our sustainable practice, HGA created a centralized sustainability team, led by the Director of Sustainability. Project teams would leverage this team of experts for energy modeling, sustainability project leadership, and certifications administration.



2018

HGA named a **TOP ZERO ENERGY FIRM** by the New Building Institute.

DIRECTOR OF SUSTAINABILITY position created.



1ST PROJECT WITH INTEGRATED CLIMATE RISK ASSESSMENT COMPLETED

Derby Line Land Port of Entry



SUSTAINABILITY ENGINEERING GROUP (SEG)

in Madison, WI joined HGA, strengthening our expertise in energy modeling, commissioning, renewable energy, carbon neutral planning, and zero energy design.

2019

MASS TIMBER STRUCTURAL EXPERTISE DEEPENED

HGA's Microgrant Program funded development of a custom parametric design tool for optimizing mass timber structures.



2020-TODAY

DISTRIBUTED NETWORK

We understand that sustainability must be everyone's job. To achieve a baseline of high performance across all of our work, we shifted our model to a distributed network of experts and champions contributing to project and firmwide strategic priorities, coordinated by the Director of Sustainability.

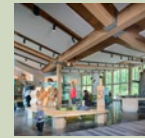
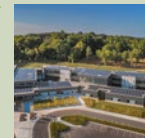
- **SUSTAINABILITY NETWORK RESTRUCTURED** — Steering Committee, National and Local Councils
- **STRATEGIC PRIORITIES** identified
- **BUILDING PERFORMANCE GROUP** (formerly SEG), renamed, including energy and third-party certification expertise



2020

1ST ZERO ENERGY CERTIFICATIONS

- Forest Edge Elementary
- Westwood Hills Nature Center



1ST SITES CERTIFICATION

FBI/DOJ - Central Records Complex



2021 COTE TOP 10 AWARD

MIT.nano

1ST LIVING BUILDING CHALLENGE CERTIFICATION

Wolf Ridge Environmental Learning Center



ADOPTED AIA FRAMEWORK FOR DESIGN EXCELLENCE and integrated sustainability into strategic plan.

SIGNED SE2050

2022

1ST WELL CERTIFICATION

McGough Construction Corporate Headquarters



SIGNED AIA MATERIALS PLEDGE



2023

COTE TOP 10 AWARD
Westwood Hills Nature Center

SIGNED MEP 2040
Committing to Zero

SET CARBON NEUTRALITY TARGETS for the firm.



2024 ACHIEVED CARBON NEUTRALITY with offsets.

HGA's History of Sustainability

We have experimented with multiple governance models for sustainability, learning quickly from what works and reacting to and improving what doesn't. Our sustainability achievements have accelerated, a measure of success that has encouraged continued investment in advancing sustainability in our practice and our operations.

04
OUR APPROACH



Fostering a Culture of Innovation

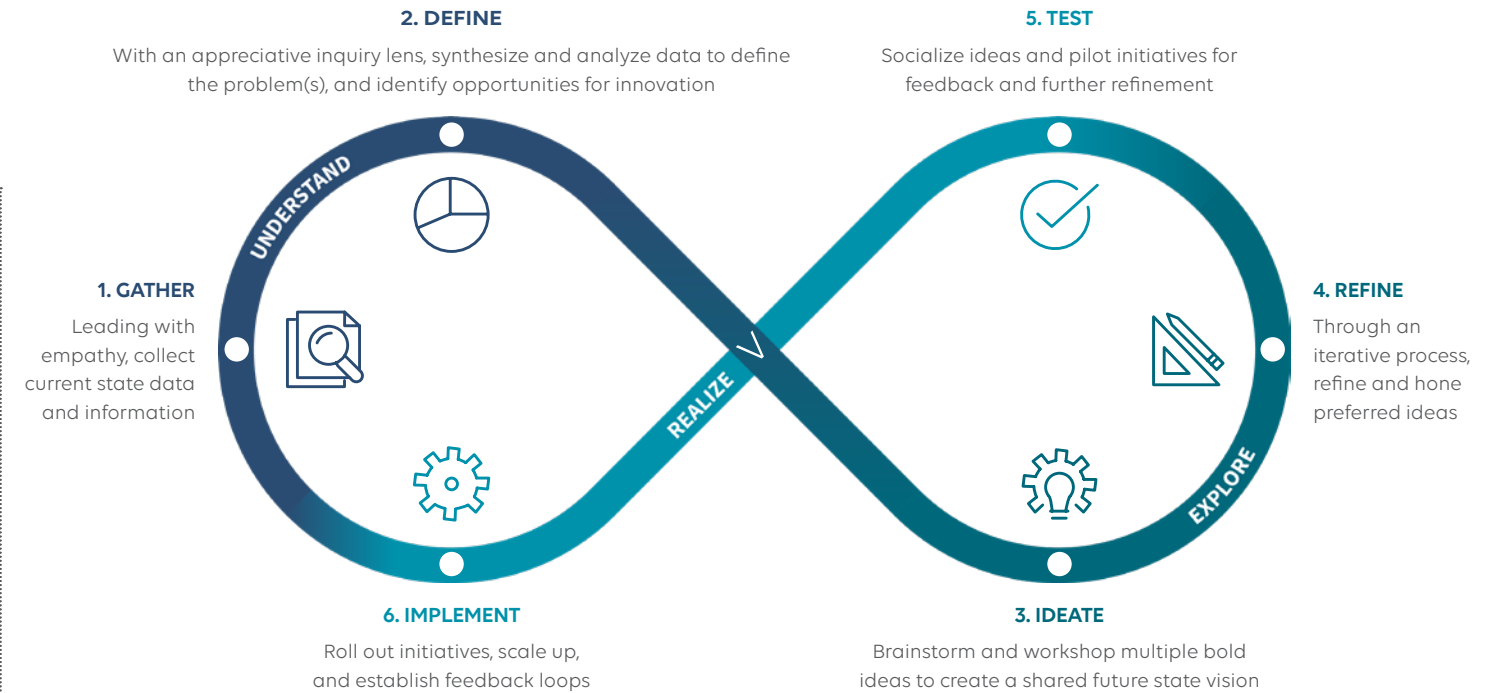
A HUMAN-CENTRIC APPROACH TO CHANGE

Our current approach to sustainability at HGA is rooted in change management and design thinking. We actively embrace change with a balance of **change leadership**¹ and **change by movement**², a dynamic and inclusive approach deeply rooted in participatory and co-creation principles. Our employees are problem solvers, and when they are engaged in solution-finding, the results are innovative, and impacts exponential—both internally and when working with clients.

We aim to develop and implement sustainability initiatives that maximize employee adoption of the required changes. In order to accomplish this goal, we have focused on fostering a culture of innovation within our Sustainability Network and across the firm, including:

- Challenging assumptions and asking questions, leaning into our core value of curiosity
- Celebrating teams that experiment, fail fast, and learn quickly to create a sense of psychological safety
- Adopting a growth mindset, assuming we can always improve and always have more to learn
- Learning from what works, with a lens of appreciative inquiry
- Building a network of support, with no employee more than two degrees of separation from the person, tool, or answer they need
- Leveraging a design thinking toolkit with exercises, activities, and engagement strategies we use both internally and with clients
- Creating multiple feedback loops to learn from what is working and where there are continued barriers that need to be addressed
- Asking the question “who is not at the table?” and inviting them to join in the work, aiming for an equitable, collaborative work environment that yields richer outcomes for all

The diagram on the right illustrates our process, which we repeat with each refinement of our strategic priorities, goals, and initiatives.



This process helps us hear multiple employee and client perspectives so we can meet people where they're at while proposing new initiatives that will accelerate our progress. Along the way, we have learned to recognize, anticipate, and minimize resistant behaviors to the proposed initiatives, and have adjusted some of our goals and timelines to better accommodate the needs of a market.

We use our goals as measures of success and identify any new ones needed to evaluate each initiative. Should progress be slowing or stop entirely, our sustainability leaders review the situation and identify strategies for improvement. This may involve looping back to an earlier stage to increase understanding, engagement in the initiative, and improve adoption.

The success of this process has been clear: by leveraging our sustainability network, we have increased sustainability awareness, knowledge, and engagement, and are advancing progress toward our firmwide strategic priorities.



¹Change Leadership: A proactive approach where one or more leaders lead an organization through strategic mandated changes that require new behavior and/or process norms.
²Change by Movement: An approach to change where leaders engage and mobilize the masses to build buy-in and institutionalize new norms.



Holistic Design

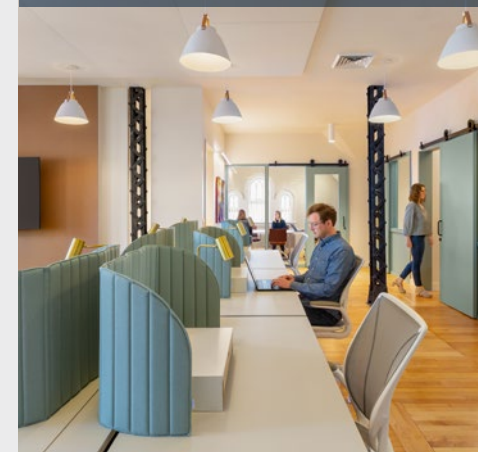
Holistic design is a transformative approach to design that acknowledges the interconnectedness of beauty, function, sustainability, resilience, and equity. By leveraging our interdisciplinary expertise, thoughtful research, and deep engagement of stakeholders, we create meaningful projects with positive, enduring impact for people and communities.

Our vision is to establish a consistent practice of holistic design rooted in our core values and informed by knowledge about our clients, their context, and the human experience. Our approach is based upon internal and client goals for sustainability, equity, community engagement, and research as well as the AIA Framework for Design Excellence. By following a common baseline process, we introduce critical conversations about sustainability and equity, and engage with community stakeholders at multiple points along the project.

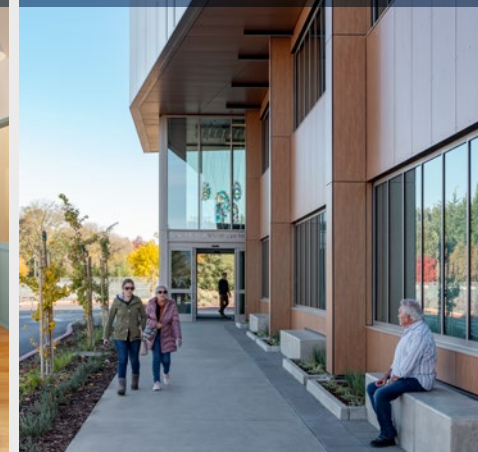
BENEFITS OF HOLISTIC DESIGN INCLUDE

- Exceeding client and community goals
- Increasingly sustainable, resilient buildings that reduce operational and embodied carbon
- Setting energy goals early, tracking progress, and reporting on outcomes
- Increasingly equitable process that includes all stakeholders

American Swedish Institute
Turnblad Mansion & Carriage House



UC Davis Medical Center
Ernest E. Tschannen Eye Center



Bowdoin College
Arctic Museum & Classroom Building



CONSISTENTLY ELEVATING THE WORK WE DO

Our holistic design philosophy transcends project scale and market sectors. Based upon a values-driven foundation, our process creates distinct, artful outcomes that reflect client, project and place.

AIA
FRAMEWORK
FOR DESIGN
EXCELLENCE
+ HGA



Integration
Every project has a unique story.



Equitable Communities
We deeply consider the people our projects serve.



Ecosystems
Every project is connected to its place.



Water
We treat water as a precious resource.



Economy
We promote decision making that adds value and impact to projects.



Energy
We deliberately balance energy performance and comfort.



Well-Being
Every project helps people thrive.



Resources
We select materials that put people and planet first.



Change
We envision the future life of our projects.



Discovery
Every project leaves an inspiring legacy.

Sustainability Leads

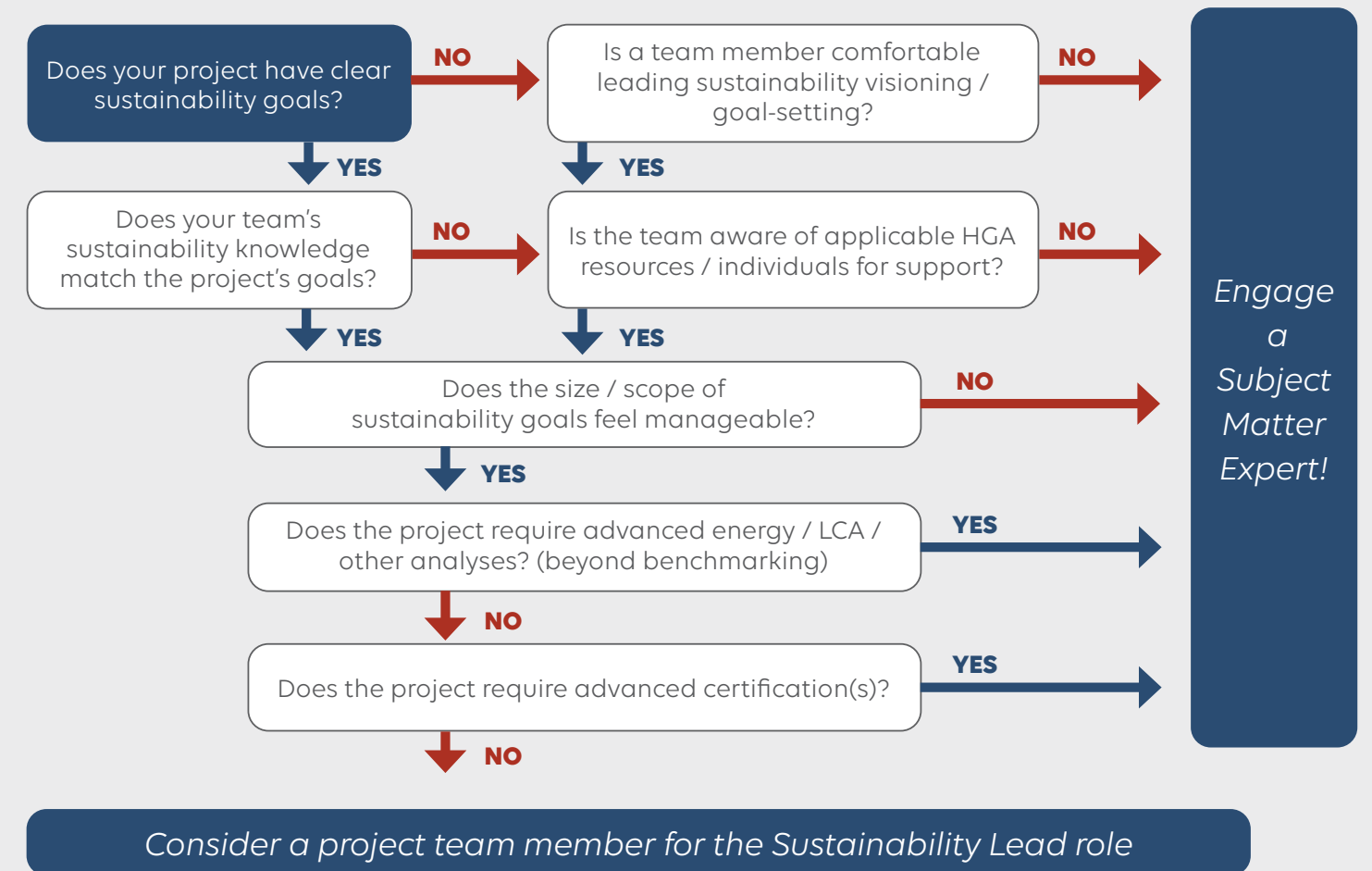
When Project Managers open a new project number, they are required to include a Sustainability Lead on the project team. While we believe sustainability is everyone's job, this person is the champion for sustainability goals, will leverage the tools, resources, and expertise in the Sustainability Network to help the project team achieve those goals, and is a single point of contact for reporting.

A SUSTAINABILITY LEAD WILL...

1. Facilitate **VISIONING and GOAL-SETTING**, in collaboration with the project leaders, as an integrated part of project initiation with the owner. Teams are required to integrate AIA 2030, SE 2050, MEP 2040, and materials goals if applicable to the project scope.
2. Champion an **IMPLEMENTATION** strategy in collaboration with the project manager and design team, so steps are taken by all design team members to make progress towards the sustainability goals of the project.
3. **SUPPORT** the design team by directing them to resources, tools, and subject matter experts as required. Sustainability is everyone's job, and while the sustainability lead may have execution tasks and deliverables, they are not solely responsible for accomplishing the sustainability goals - the whole team is!
4. **TRACK** progress, including submitting AIA 2030, MEP 2040, and SE 2050 data for reporting. This may also involve updating the Sustainability G-Sheet in the drawing set and documenting the sustainability project story from beginning to end, so a cohesive narrative is built during the design process.

WHO SHOULD BE A SUSTAINABILITY LEAD?

Anyone who works on design projects can be identified as sustainability lead. On some projects it is most appropriate for the lead to be someone already on the project team. For example, an interior designer in a small tenant improvement project, or the medical planner in a pre-design study aiming to find the most efficient layout of a medical office building. On larger projects and those with targeted high performance goals from the client, we recommend a subject matter expert is engaged in that role.



Most projects should consider the applicability of our industry commitments, though the extent varies widely based on client goals, size, scope, and other project factors.

	New Construction	Addition	Renovation	TI	Study
AIA Framework	●	●	●	●	●
AIA Materials Pledge	●	●	●	●	●
AIA 2030	●	●	●	●	●
SE 2050	●	●	●		

- YES
- YES if materials / finishes scope
- YES unless scope is limited to interior architecture, finishes, and FFE
- YES if >1,000 SF & mechanical, lighting, and/or envelope scope

Design Process

In collaboration with our clients, we aim to establish a holistic vision for every project. This includes sustainability goals such as specific energy performance, carbon emissions reduction, or third-party certification.

With the project vision in mind, our team identifies specific and measurable sustainability strategies, which may include energy efficiency targets, water use reduction, or healthy material specifications. These strategies may be tied to a third-party certification system such as LEED, whether actually certifying or simply using as a tool to track sustainability outcomes.

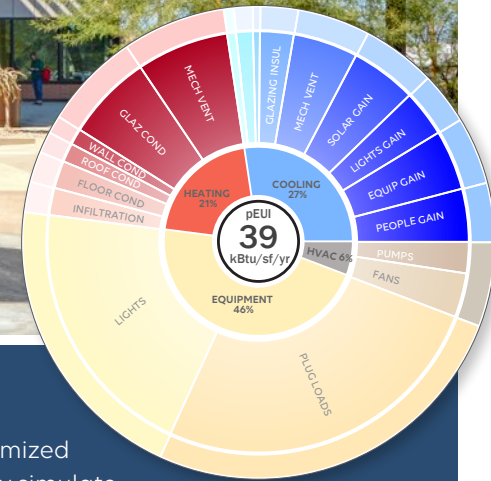
As a part of the holistic design process at HGA, teams are encouraged to ask sustainability questions and conduct relevant benchmarking and analysis from the earliest design phases. On some projects, energy benchmarking and best practices from similar projects informs design. On others, advanced building simulation and analysis tools are used to create feedback loops with design explorations.

The complex interaction of many design decisions can be tested collectively as bundles, determining the best combination of strategies for lowest cost and greatest gains optimizing performance. Because this work is performed as an integrated part of the design process, simulation findings can be interwoven, enabling the emphasis to remain on experiential quality while never losing sight of the project's sustainability goals.

MAKING SUSTAINABILITY SECOND NATURE

Sustainability is integrated into our design process tools and resources, from specifications to documentation, project visioning virtual whiteboard templates to quality review tools. For example, we have:

- Developed **ENERGY.script**—a custom grasshopper script—in partnership with CAUSE Sustainability, empowering architects to understand predicted energy use in the earliest stages of design.
- Included transparency expectations for interior finish materials in our master specifications, requesting disclosure of VOC content, material inventories (such as HPDs) and environmental product declarations (EPDs).
- Added LEED v4 language into our master specifications, construction administration manual, and quality guidelines.
- Created a high performance envelope resource for project teams to use when developing their construction documents.



A PATHWAY FOR EARLY ENERGY ANALYSIS

Energy use reduction strategies have the greatest impact when identified early. Our customized ENERGY.script workflow helps architects during beginning design stages easily and quickly simulate predicted energy use; identify key energy reduction or optimization strategies; and directly compare the impact of each, allowing for changes to be made when they are most cost-effective.

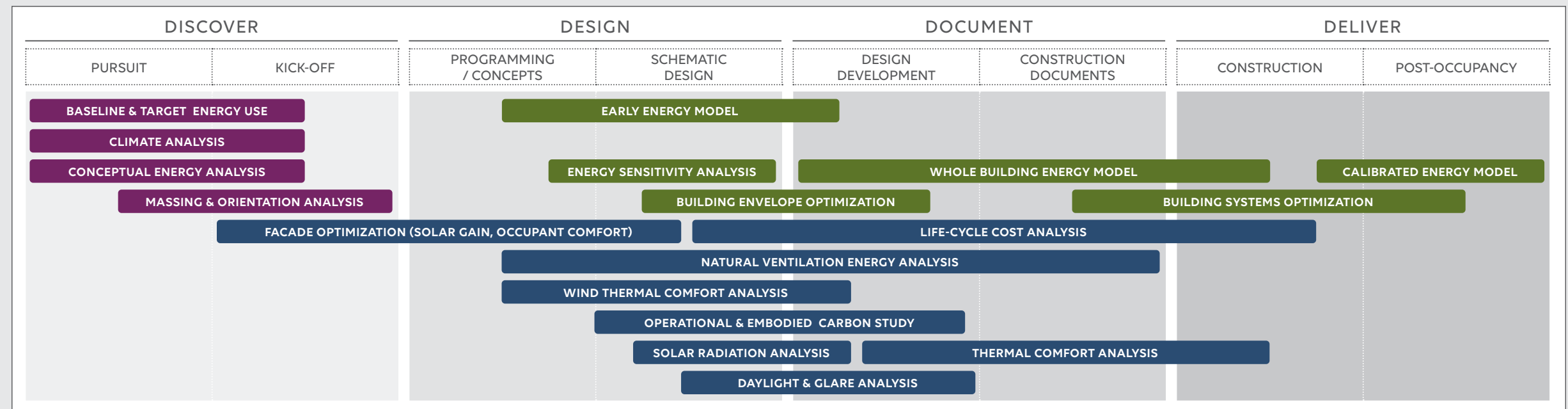


UC RIVERSIDE STUDENT HEALTH & COUNSELING CENTER (RIVERSIDE, CA) For UC Riverside's new health and wellness center, ENERGY.script was run in conjunction with energy use intensity (EUI) benchmarking to help our design team analyze the historical EUI of the program type in the arid climate. Using benchmarking and analysis outputs, the design team identified conservation measures for each of the main energy drivers so they could effectively reduce the energy use of the building.

INTEGRATING HIGH-PERFORMANCE GOALS INTO THE DESIGN PROCESS

We work with our clients to achieve sustainability goals that align with their values—all within the project budget. Our team uses building simulation and analysis workflows to create a feedback loop between design decisions and their impacts on sustainability goals. This diagram highlights baseline workflows and those used to optimize performance.

- BASELINE
- ENERGY MODELING
- PERFORMANCE OPTIMIZATION



Carbon Reduction

Responding to the urgency of the climate crisis, many of our commitments focus on reducing operational and embodied carbon emissions.

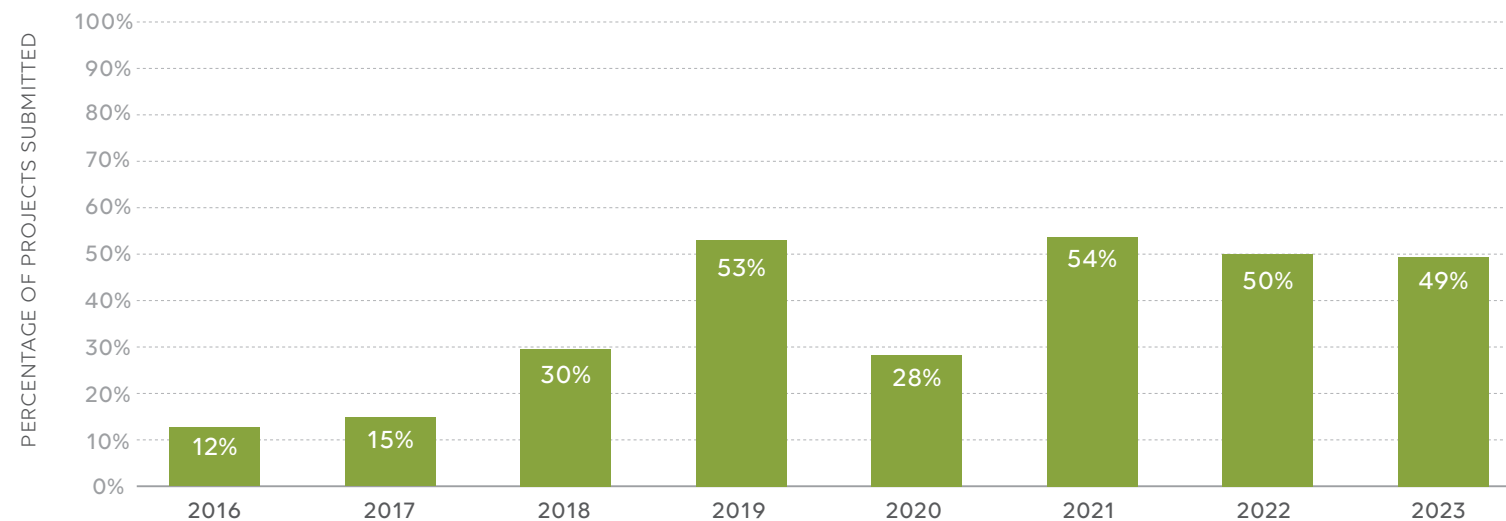
OPERATIONAL CARBON REDUCTION STRATEGY

HGA has a long history of helping clients achieve carbon reduction targets, including high performance MEP systems and envelope systems, ambitious and forward-thinking sustainability master plans, carbon neutral roadmaps, geothermal and solar PV design, microgrids, commissioning and retro commissioning, decarbonizing central utility plants, and helping clients pay for their projects with grant funding, utility, and tax incentives. That said, we have historically responded to client requests, and are now working on taking a more proactive approach to making high performance the baseline.

AIA 2030 & MEP 2040

- We have evaluated our design process map to identify key steps taken at each phase and integrated those steps into our Field Guide to Holistic Design - a reference guide for project teams with key questions and actions to take at each step of the design process.
- Owner's Project Requirement templates are being updated to align with the Holistic Design process and advocate for high performance systems as the baseline.
- The Mechanical Engineering Design Task Force brings together Mechanical Engineering AIA 2030 Improvements and our Building Performance Group, with the goal of empowering the design team with the knowledge and skills needed to be proactive with informing other trades about the energy impact of their designs and actively use energy efficient design and renewable generation in their projects. They are developing a system selection primer that will help teams better understand operational and embodied carbon emissions associated with typical systems.
- Our Building Performance Group is developing Net Zero Design Guidelines specific to HGA's design process. We aim to foster a 'net zero mindset' where we start each project with the question, *what would it take to get to net zero?* This resource will serve as a reference to design teams and allow for a net zero option to be explored on more projects.
- Our market sectors aim to expand the number of energy models we complete on projects. The Energy Modeling team is providing guidance around which projects should complete different types of energy models, from early simple box models to full building energy models, and we are identifying change management strategies to help project managers and principals integrate energy modelers into their project planning from the pursuit stage. We aim for an iterative modeling workflow to help our project teams understand the energy impact of their design decisions.

PROJECTS WITH AN ENERGY MODEL



EMBODIED CARBON REDUCTION STRATEGY

In recent years, we have worked to develop expertise and resources to integrate Life Cycle Assessments into our design process and are currently expanding what systems are evaluated – from structural and envelope to interior materials and MEP. Our *Embodied Carbon & Life Cycle Assessment* Knowledge Community has developed “The Embodied Eight,” a resource guide for architects, structural engineers, and interior designers that provides:

- A basic overview of embodied carbon in the built environment
- Questions the team can ask to start setting carbon reduction targets for their projects
- Recommendations for strategies the team can leverage to lower embodied carbon from the earliest design phases
- Links to resources and tools for embodied carbon analysis
- A glossary of terms
- Names and contact information for subject matter experts, who can answer questions and complete life cycle assessments

In addition, this Knowledge Community conducts a bi-annual scan of available LCA tools to validate we are leveraging the best, most reliable software for our analysis. We have developed evaluation criteria that provides a methodological assessment of the available tools, their strengths and limitations. The tools reviewed include:

- Building Carbon Neutral
- EPIC
- Payette's Kaleidoscope
- One Click LCA (Planetary and Licensed)
- EC3 Building Planner
- CareTool
- ZeroGuide
- Tally
- Tallycat
- Building Transparency Catalogue material search feature
- CLF Baseline Reports
- EC3 Materials Section
- Cove.tool

Our expertise in Embodied Carbon & Life Cycle Assessment now includes:

- Best practice recommendations for design teams, including the typical best and worst performing materials for embodied carbon in structural, envelope, and interior materials
- Dozens of completed LCAs on designed and built projects
- Whole building LCA
- Component analysis of specific materials (such as glazing)
- Structural system LCA
- Embodied carbon analysis of MEP systems

THE EMBODIED EIGHT: Where to start with embodied carbon reduction

1

Less is Less

2

Discuss Access & Impact

3

Choose Your Site Wisely

4

Build for the Long Term

5

Optimize Building Shape, Size, & Envelope

6

Understand Structural Options Early

7

Material Selection: Solidify Strategies & Goals Early

8

HGA's Standards are Our Baseline & Ever-Evolving



OUR COMMITMENTS: EMBODIED CARBON REDUCTION



In 2023, we submitted to DDX embodied carbon results that were submitted for SE 2050 reporting. In 2024, we will also submit LCAs we completed for LEED certifications. As our Materials and Embodied Carbon/LCA Knowledge Communities work to elevate embodied carbon reduction workflows and integrate them into our holistic design process, we will increase the number of projects that report embodied carbon metrics to AIA.



MATERIALS PLEDGE

As a baseline, Environmental Product Declarations (EPDs) and gathering predicted Global Warming Potential (GWP) are required for carpet, acoustic ceiling tile, and resilient flooring. Our [Healthier & Sustainable Interior Materials Selection Guide](#) provides resources and guidance to designers to evaluate products for compliance. Teams are encouraged to select materials based on lower Global Warming Potential (GWP) and to request EPDs on additional materials. In our MasterSpec, we have included EPD requirements for these three materials, and specifiers add EPD language to other spec sections based on the goals of the project. Over time, we aim to expand the number of materials we require EPDs for in our baseline.



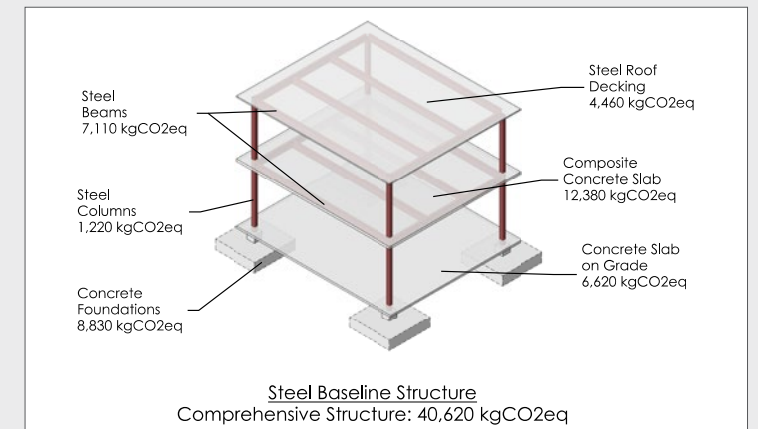
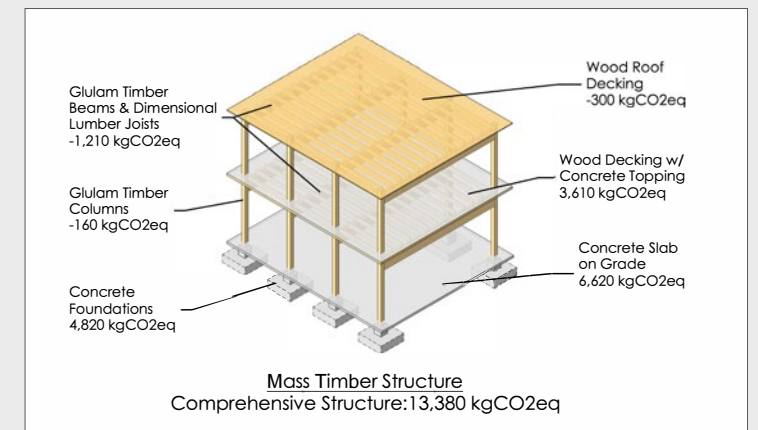
In order to achieve the goals of SE 2050, our team is lowering embodied carbon in structural systems by prioritizing:

- Lower-carbon concrete specifications
- Sustainably sourced wood, including mass timber
- Optimizing structural design for material efficiency
- Salvaging reusable materials
- Designing for building reuse or deconstruction

We are using “The Embodied Eight” and LCA software tools to identify opportunities to reduce embodied carbon in structural systems early in the design process. Most of the recommended SE 2050 strategies are being explored and/or implemented at HGA - see the table on page 22.



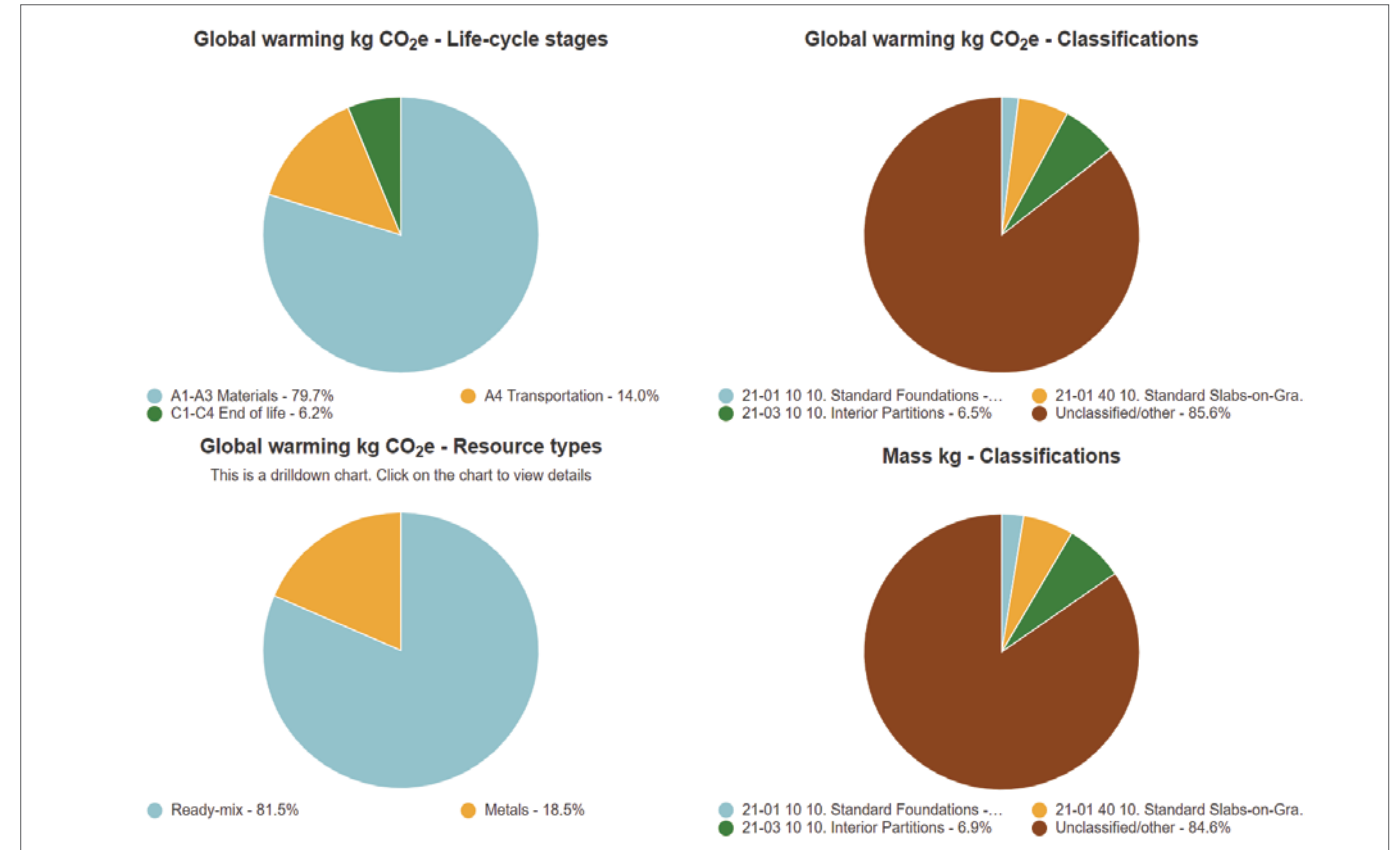
The Blake School Early Learning Center



An embodied carbon comparison study based on LCA data. HGA uses visuals like these during the project concept phase to explore design considerations with clients.

SE 2050 REQUIREMENTS: REDUCTION

REQ.	ELECTIVES	STRATEGIES
✓	Set clearly stated, firm-wide reduction targets in the short-term (<1 year) and long-term (>5 years)	See the goals on page 7.
	Develop and implement a workflow that makes it easier to make early design decisions based on embodied carbon	We created an optimized embodied carbon workflow diagram to guide our LCA experts and project teams through the process. This has been customized for projects that require third-party certifications to meet the requirements of those programs.
	Update your specifications to incorporate embodied carbon performance. Include embodied carbon in your submittal review requirements.	Our Embodied Carbon Champion is working with our specifications team to integrate embodied carbon into HGA's MasterSpecs. Material quantities will be a required submittal. We are exploring how embodied carbon performance can be integrated into specifications and submittals.
	Communicate the embodied carbon impacts of different design options to clients with creative and effective data visualization.	With each project and each LCA, we improve how we communicate the analysis results to more clearly explain the greatest opportunities to reduce embodied carbon.
	Compare different design options with embodied carbon as a performance metric during the project concept phase. Explain what you did and what the results changed (if anything).	On the Blake Early Learning Center featured on page 21, we evaluated the embodied carbon advantages of a mass timber structural system over a steel system. Using early structural bay studies and the Tally plug-in for Revit, we quickly assessed the carbon reductions that could be achieved with the mass timber system. This aided the design team in building buy-in for mass timber with the owner, who was interested in a low-carbon project.
	Participate in a LEED, ILFI Zero Carbon, or similar design charrette to speak to potential design considerations impacting embodied carbon.	On several projects, early design conversations have included full team discussions around opportunities to reduce embodied carbon, with a LCA specialist using "The Embodied Eight" to frame the opportunities and the team exploring what may be realistic to pursue, given project parameters and certification targets.
	Collaborate with your concrete supplier to reduce embodied carbon in a mix design below an acceptable baseline. Discuss what you found and what it means in your market.	On one project, our structural engineer discussed embodied carbon with the supplier and learned that they were pursuing low embodied carbon concrete and that their mixes tended to be lower carbon than industry average. Simply by asking the question, we learned about the growing awareness from concrete mix suppliers and which ones are beginning to take action to reduce embodied carbon.
	Have an Environmental Product Declaration (EPD) created for a project. Get a project or client to require the creation of an EPD that did not exist before.	On the same project listed above, the concrete supplier (Cemstone) developed an EPD for the concrete specified.
	Incorporate sustainably harvested biogenic materials in at least one project.	We have several mass timber projects, including Bowdoin College, which is featured in the case study on the following pages. We explore mass timber in all sectors, including labs, exploring where vibration control criteria will allow for the use of mass timber.



▼ **Most contributing materials (Global warming)** [Compare data](#)

No.	Resource	Cradle to gate impacts (A1-A3)	Of cradle to gate (A1-A3)	Sustainable alternatives
1.	Ready-mix concrete	611 tons CO ₂ e	45.3%	Show sustainable alternatives Add to compare
2.	Steel roof and floor deck	611 tons CO ₂ e	45.3%	Show sustainable alternatives Add to compare
3.	Structural steel profiles, generic	67 tons CO ₂ e	5.0%	Show sustainable alternatives Add to compare

Proposed Mix Designs										NRMCA Baseline										Comparison									
Proposed - Total Volume of Concrete in the Building										Baseline - Total Volume of Concrete in the Building										Environmental Impact Comparison - Total Volume of Concrete in the Building									
Impact of All Concrete										Impact of All Concrete										Impact % to Baseline									
Total CY of All Concrete in Slabbing										Total CY of All Concrete										Better or Worse?									
1 CY										1 CY										-52.2% -18.8% -18.8% 0.8% -14.2% -12.8%									
Better or Worse?										Better or Worse?										Better or Worse?									

These diagrams illustrate how our team uses data to make informed decisions and communicate design options to our clients.

BOWDOIN COLLEGE

ARCTIC MUSEUM & CLASSROOM BUILDING

BRUNSWICK, MAINE

A CATALYST FOR
RESEARCH & DIALOGUE

This pair of new buildings will provide a new home for Bowdoin's storied Peary-MacMillan Arctic Museum, a new event space, and state-of-the-art educational facilities.

The museum includes two new galleries: a permanent 'Orientation Gallery' serves as an introduction of the collection to visitors and scholars, while a larger 'Changing Gallery' allows space for temporary exhibitions, events, traveling artifacts, and student installations. The lobby and Orientation Gallery prioritize flexibility, while at the same time take advantage of light, views, and spatial volume to produce memorable architectural experiences.

The museum is an all electric, low net-carbon building designed with a simple material palette of masonry, exposed timber, and white walls. This will be the first commercially scaled mass timber project in the state of Maine, reducing the building's embodied carbon by 50%.

PROJECT DATA

Size: 45,900 GSF New Construction

Completion: 2022

HGA Services: architectural design, structural engineering, MEP engineering, interior design



SUSTAINABILITY CHALLENGE

Minimizing the Center's carbon footprint was an important driver in the building's design and program's messaging. HGA's integrated, interdisciplinary design team leveraged multiple building systems, including the use of mass timber structural framing and careful mechanical system design, to achieve the College's desire to have the museum contribute to a "fossil-fuel free" goal while meeting museum-level temperature and humidity requirements.

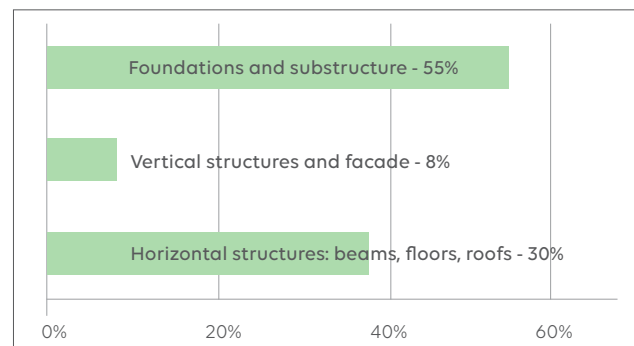


LIFE-CYCLE ASSESSMENT

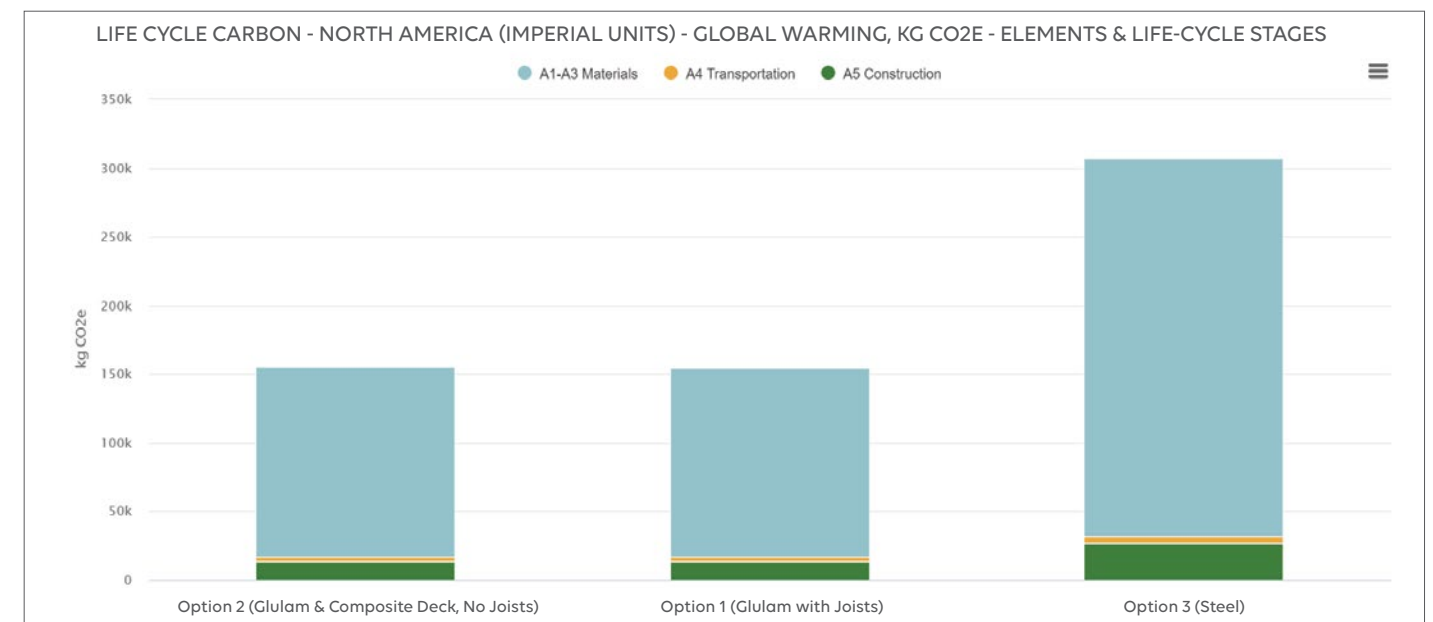
To help decide on the building structural system, HGA used life-cycle assessment (LCA) data. The process of generating bay designs to compare via LCA helped refine the One Click LCA workflow. HGA leveraged the software to evaluate material specifications and identify opportunities earlier in the design process to allow greater cost and carbon savings.

This project has helped HGA determine a helpful timeline of applicable actions in each design stage, expanding upon CLF’s “Road Map to Reducing Building Life Cycle Impacts”. HGA foresees using the Carbon Designer tool in One Click LCA to gather an estimated baseline of carbon emissions in the Pre-Design stage. This, supplemented by the use of the Revit-integration One Click LCA tool, allows for earlier embodied carbon evaluation on structural bay options to maximize impact for carbon reductions.

Structural bay options inform both the client and the design team where carbon and cost saving potentials are, allowing for educated choices and advocacy for lower embodied carbon options.



Consistently across the mass timber and steel options the majority of carbon reduction potential lies in the horizontal structural system.



The Life Cycle Carbon Elements & Life-Cycle Stages data compares carbon dioxide emissions across three different structural design options. Blue represents the A1-A3 scope, from which the most significant embodied carbon emissions emanate.

MEP 2040

Committing to Zero

We are in the early stages of MEP 2040, researching the state of the industry and connecting with other MEP 2040 committed firms to determine what to report, how to calculate it, and the trade-offs with other design decisions.

In 2024, HGA is developing an internal methodology for calculating embodied carbon in MEP systems. We are evaluating two calculation methods referenced in the proposed ASHRAE 240P standard:

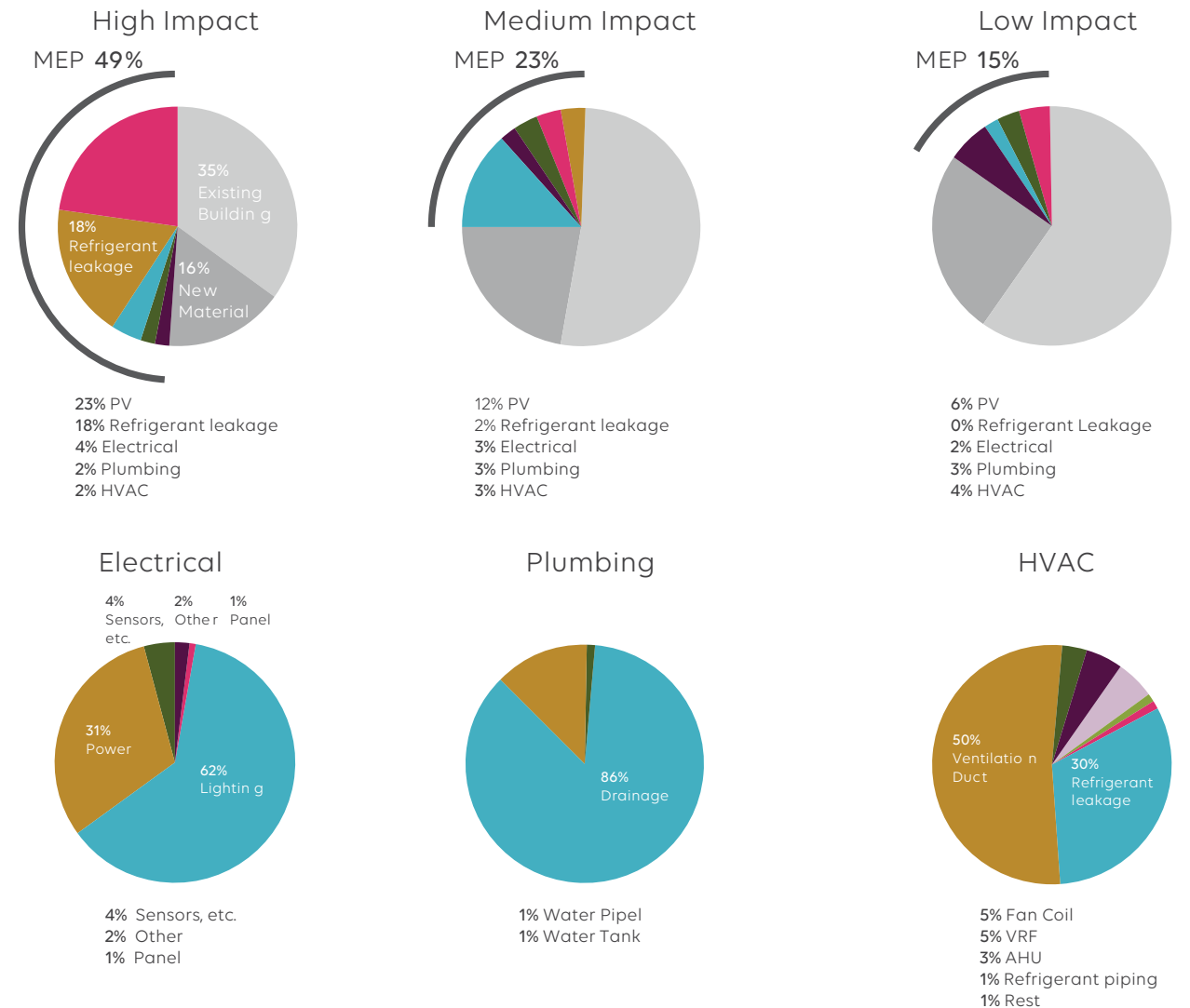
1. The Chartered Institution of Building Services Engineers (CIBSE) TM 65 method - North American version (July 2024)
2. Life cycle analysis (LCA) software, including participation in the MEP 2040 DAR Working Group One Click MEP Embodied Carbon Trial

By the end of 2024, we will have:

- A simple analysis method for projects to have a high level understanding of MEP embodied carbon impacts
- A detailed method that will align with the LCA analysis we do for structural systems and building envelope

EQUIPMENT & MATERIALS

To capture material quantities, we are engaging our Digital Practice Group and Engineering Innovation Action Group to explore how we can accurately account for materials and equipment such as cable tray, lights, ductwork, and piping. In most cases, the routing is not fully modeled and we will work to develop acceptable rules of thumb and modeling design standards to ensure our final calculations are reasonable. We will also work to build a database of the embodied carbon associated with the major equipment and materials that we typically see on our projects. This will include working with vendors to request EPDs for the equipment we specify.



Embodied carbon of building services compared to the whole building. Whole life carbon study on office retrofit by Elementa Consulting.

Source: [LETI Embodied Carbon Primer](#)

REFRIGERANTS

A large portion of MEP embodied carbon comes from refrigerants. An office retrofit study in the LETI Embodied Carbon Primer (2020) suggests up to 37% of embodied carbon from all MEP systems could come from refrigerant leakage, or 18% of the entire building's embodied carbon. In order to create design recommendations for low-GWP systems, we are researching the following topics:

- Embodied carbon reduction potential of low-GWP refrigerants
- How low-GWP refrigerants affect the efficiency of various equipment (chillers, DX rooftop units, split systems, VRF/VRV systems)
- Effects of low-GWP refrigerants in different locations when considering local grid and leakage rates equipment (buildings) experience over their life.

Our MEP 2040 Knowledge Community is working on these efforts with engineers from our mechanical, electrical, and plumbing teams, the MEP 2040 DAR Working Group and other external collaborators, our clients, and MEP equipment vendors and manufacturers.

WHOLE CARBON BALANCING

In addition to dedicated efforts to reduce operational and embodied carbon, we are working to understand the impact of design decisions on whole life carbon by asking critical questions, such as:

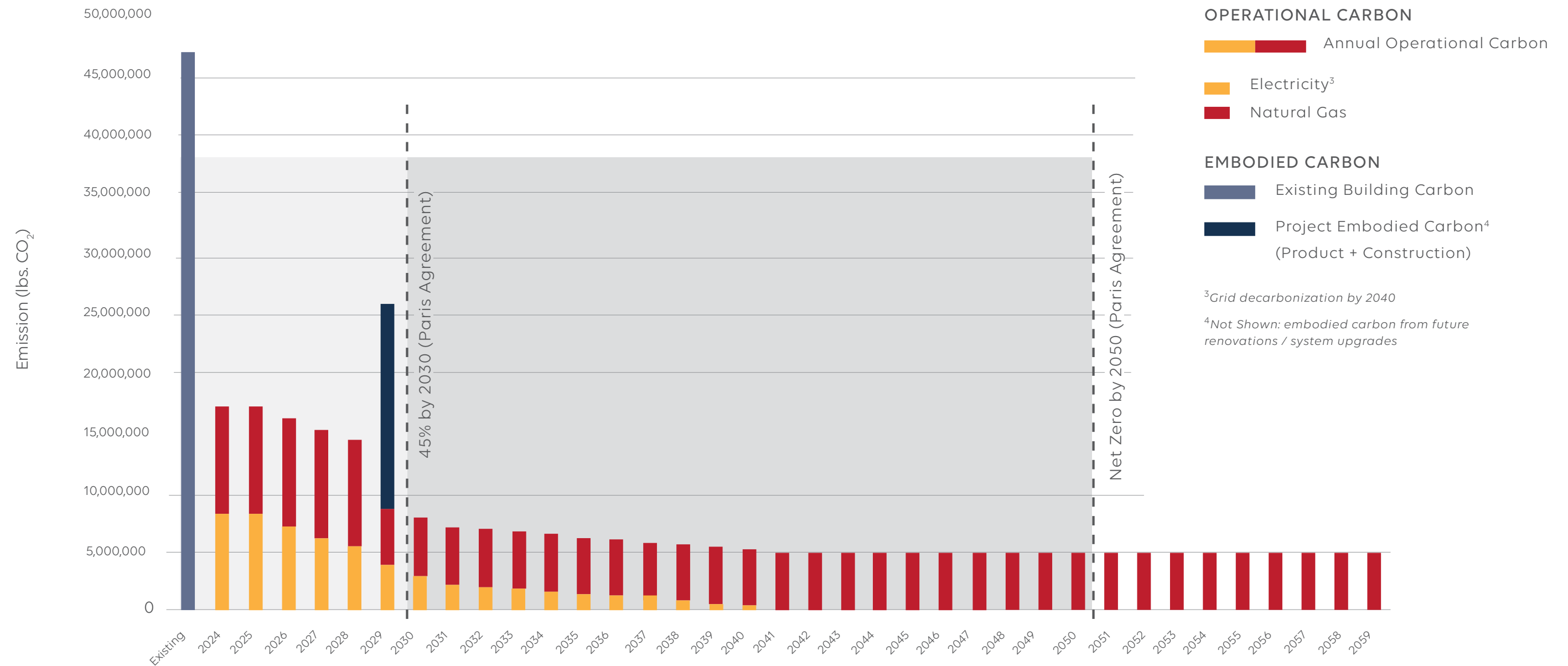
- Will the operational carbon benefits of triple pane glazing or more insulation outweigh the increase in embodied carbon?
- As the grid is decarbonizing, how does the balance between operational and embodied carbon shift, especially in all electric and net zero energy projects?
- Given global 2030 decarbonization targets, how do we prioritize minimizing carbon emissions now, without elevating long-term operational emissions?

We aim for a design process that understands and balances operational and embodied carbon for the lowest possible whole carbon footprint of each project.

Initially, this work began with comparing operational and embodied carbon workflows, and identifying key moments to bring them together. Through project application, we have been testing the workflow and making improvements and are sharing the project stories with relevant knowledge communities. We will cross-train the embodied carbon LCA and operational carbon energy modeling teams on this workflow.

PROJECTED WHOLE LIFE CARBON IMPACT OF A PROJECT IN SCHEMATIC DESIGN

Operational carbon decreases as grid decarbonizes by 2040.



³Grid decarbonization by 2040

⁴Not Shown: embodied carbon from future renovations / system upgrades

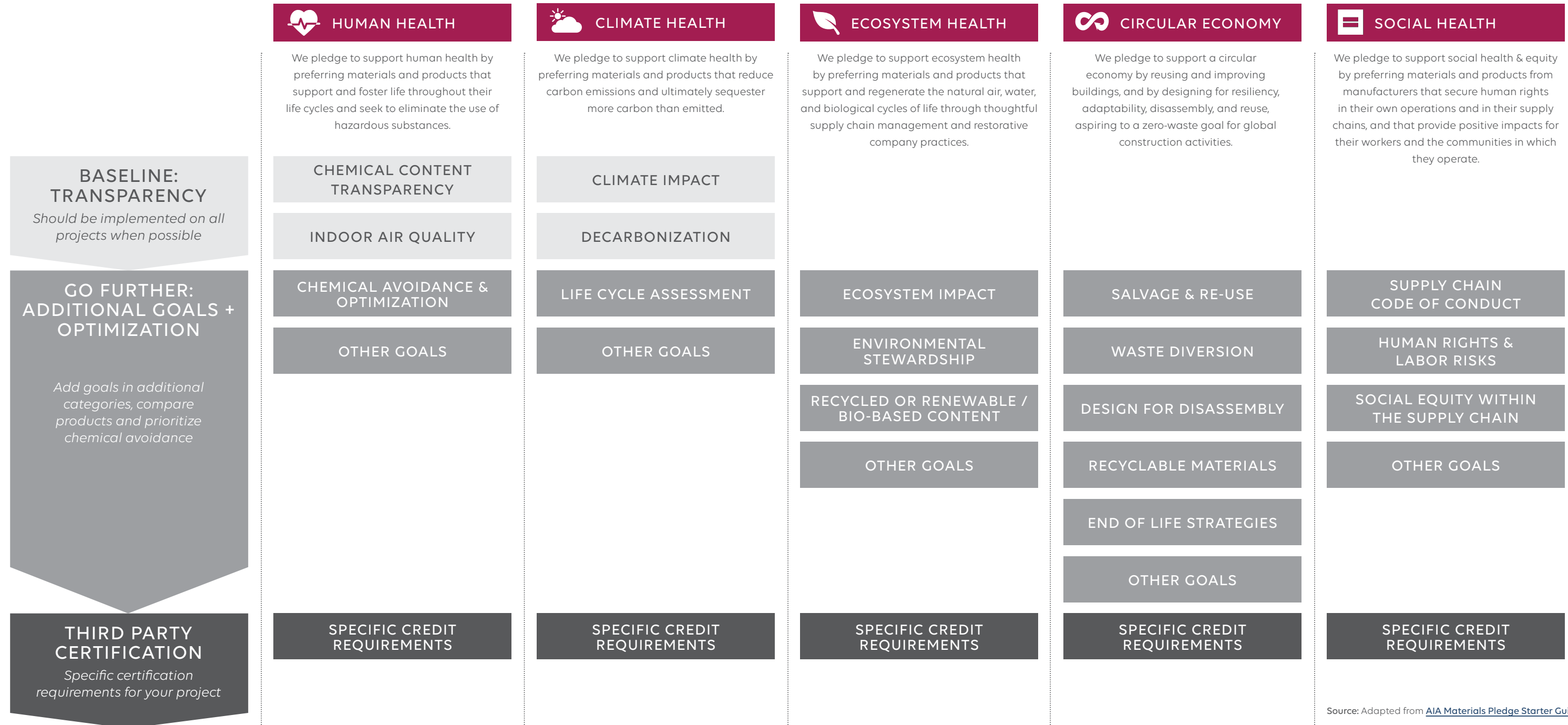


MATERIALS PLEDGE

HEALTHIER & SUSTAINABLE MATERIALS APPROACH

As we integrate the five directives of the AIA Materials Pledge into our practice, we are taking a tiered approach. First, we begin with a baseline focused on transparency of information relating to chemical content, indoor air quality, climate impact, and global warming potential. Our baseline is detailed in the chart on the following page.

As project teams and clients set further goals that align with the values of their organizations, or if a project is seeking third party certification, additional goals may be set. These goals may be to gain depth in a specific pledge category or to expand into additional pledge areas, balancing depth with breadth of impact. We aim to develop the expertise and research to push beyond a neutral effect on health, safety, and resources to a positive one.



Source: Adapted from [AIA Materials Pledge Starter Guide](#)

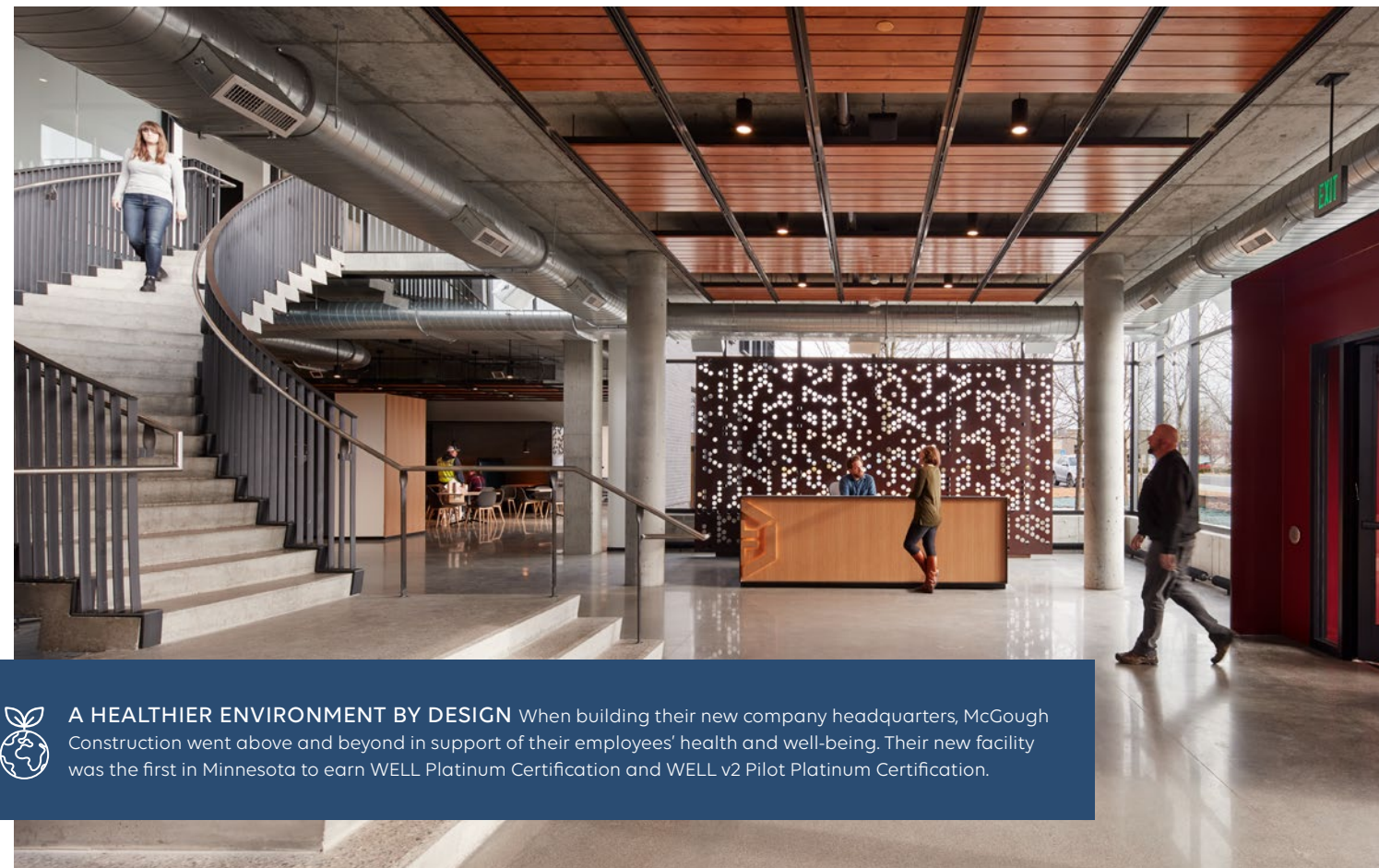
DESIGN & SPECIFICATION BASELINE

Our materials baseline includes expectations in the Human Health and Climate Health pledge areas for three commonly specified high-volume interior materials: acoustic ceiling tile, carpet, and resilient flooring. The baseline is reflected in our specifications, which require Health Product Declarations (HPDs), VOC emission certification or testing report, and Environmental Product Declarations (EPDs). HGA's standard for a comprehensive finish schedule, referred to as the Material Identification List (MatID), includes columns to track these requirements. To support the design process, materials libraries in each HGA office are aligning the samples we keep with the goals of the AIA Materials Pledge.

Projects that are pursuing a third-party verified sustainability certification use additional language in our specifications and MatID to ensure all materials goals are accomplished and verified through the submittal process.

The *Materials Knowledge Community* aims to expand the expectations and resources available to project teams, and is working on:

- Updating a sustainable design submittal cover sheet for baseline projects and each certification program.
- Developing a materials tracker to report on our baseline across projects. Currently, products track this data inconsistently, and we do not have a centralized or automated data warehouse for this information. We will be exploring efficient opportunities to integrate accountability into our workflow.
- Creating a *Healthier & Sustainable Furniture Selection Guide*.
- Expanding our baseline to other materials.
- Including the other directives of the AIA Materials Pledge in our baseline.
- Evolving the *Healthier & Sustainable Interior Materials Selection Guide* as we gain knowledge and enhance our processes.



A HEALTHIER ENVIRONMENT BY DESIGN When building their new company headquarters, McGough Construction went above and beyond in support of their employees' health and well-being. Their new facility was the first in Minnesota to earn WELL Platinum Certification and WELL v2 Pilot Platinum Certification.

INTERIOR MATERIALS BASELINE

BASELINE: TRANSPARENCY

Implemented on all projects when possible

HGA PRIORITIZED INTERIOR MATERIAL CATEGORIES FOR ALL PROJECTS

ACOUSTIC
CEILING TILE

CARPET

RESILIENT
FLOORING

The design team is responsible for reporting on each of these categories. If one of the categories does not apply to a project, the design team can use another high-volume category instead. Over time, we will add additional categories.

HUMAN HEALTH

CHEMICAL CONTENT

All product selections in each prioritized material category must have a Health Product Declaration (HPD), Declare label, Cradle to Cradle certification, or manufacturer inventory, with a goal for optimized ingredients

INDOOR AIR QUALITY

All product selections in each prioritized material category must have a VOC emission certification or testing report (Greenguard, Floorscore, CRI Green Label Plus, or emissions testing report from the manufacturer)

CLIMATE HEALTH

CLIMATE IMPACT

All product selections in each prioritized material category must have an Environmental Product Declaration (EPD)

DECARBONIZATION

Establish typical global warming potential (GWP) from Carbon Leadership Forum (CLF) Baseline and measure predicted GWP for all product selections in each prioritized material category

05
OUR INITIATIVES



LEARNING & DEVELOPMENT

One of our sustainability strategic priorities is to Elevate the Baseline of Knowledge & Experience. Sustainability is everyone's job, which means everyone need to know how to integrate sustainability into their work, whether an architect, interior designer, engineer, or IT specialist.

To capture employee knowledge and evaluate our progress on elevating the baseline of sustainability knowledge, we issue a firmwide survey every two years. Employees are asked to assess their knowledge and abilities on a variety of sustainability topics, as well as where they'd like to learn more. This is used to prioritize L&D programs, inform our change management strategy, and identify expertise and knowledge gaps that will need to be filled through training, mentoring, or hiring.

Our education strategy responds to this survey and other inputs - such as needs identified by each market sector and the sustainability steering committee. Tactics include:




- Integrating sustainability topics into the firm's Learning & Development offerings
- Providing dedicated sustainability mentorship and training on projects (fieldwork)
- Using our Sustainability Network and existing firmwide meetings for knowledge sharing and communication
- Supporting individual career growth with conference, training, accreditation, and education opportunities through formal HR policies
- Hiring subject matter experts where we have gaps in knowledge

Learning & Development (L&D) at HGA is designed to be accessible, flexible, and scalable to support the desires and needs of all employees. Each department, along with the sustainability network, is working to define the baseline of sustainability knowledge and skills needed in each role, which L&D seeks to achieve where employees need support elevating their practice. We budget for a certain amount of firmwide participation in these programs, provide overhead numbers to be used for billing, and adjust individual utilization targets when they will be participating in a special program. L&D is valued and supported in the budget, and should not negatively impact other employee or department financial targets.

ELEVATING SUSTAINABILITY AWARENESS, KNOWLEDGE AND SKILLS - LEARNING AND DEVELOPMENT

SPECIAL PROGRAMS:

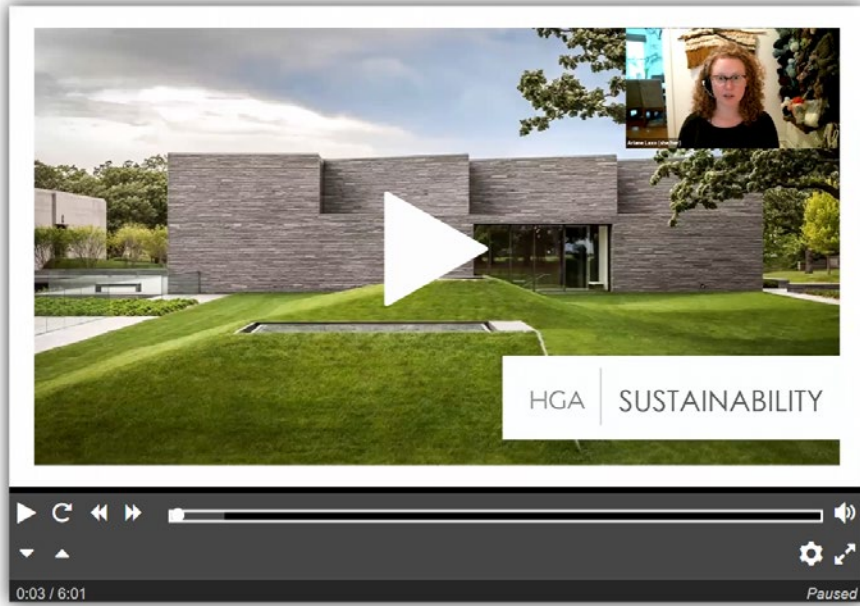
Multi-day, synchronous (in-person, virtual, and/or hybrid) learning intensives that allow instructors and learners to dive deep into multiple topics within a broader subject area in one condensed session seeking advanced application of knowledge.

<p>Sustainability Retreat</p> 	<ul style="list-style-type: none"> • Members of the Sustainability Network gather annually for strategic planning and immersive, collaborative learning. • Typical learning objectives: <ul style="list-style-type: none"> » Strengthen community and culture » Deepen cross-disciplinary knowledge of specific sustainability topics » Knowledge sharing with a project case study » Build skills and competencies that will help participants advance sustainability commitments on their projects
<p>Project Managers Program</p> 	<ul style="list-style-type: none"> • Biannually, HGA offers training for new project managers, which includes: <ul style="list-style-type: none"> » Required viewing of <i>Sustainability Essentials: Intro to Sustainability at HGA</i> » A sustainability workshop focused on how to identify an appropriate sustainability lead for a project in alignment with the client's goals, and leverage subject matter experts where required
<p>Other Leadership Programs</p> 	<ul style="list-style-type: none"> • The Sustainability Essentials Video Series will be required viewing for several training audiences. • Sustainability and L&D are working together to identify how sustainability commitments and their impact on the roles of trainees can best be woven into Principal and Engineering Discipline Lead Programs.

-  SE 2050
-  AIA 2030
-  MEP 2040
-  AIA Materials Pledge

LEARNING & DEVELOPMENT

01 - Why Sustainability



- SE 2050
- AIA 2030
- MEP 2040
- AIA Materials Pledge

INSTRUCTOR-LED TRAINING

Interactive learning sessions with a focus on application of knowledge and problem solving, putting information learned into practice.

<p>Sustainability Workshop for Firm Shareholders</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> • The week of HGA's shareholder meeting, Sustainability hosts a workshop for leaders. In 2023 and 2024, this session focused on how our sustainability expertise can be leveraged when pursuing work.
<p>Sustainability Leads Training</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> • Participants: people who are or want to be playing a sustainability lead role on project teams. • Objectives: <ul style="list-style-type: none"> » Facilitate peer-to-peer sharing of best practices » Build trust within and collaborate with a cohort of sustainability leads » Build confidence and skills within the scope of the role » Inform and influence active and future project work • Initially, members of the sustainability network brought diverse backgrounds and skills to their roles on project teams. Over time, we have worked to formalize a baseline expectation of what project sustainability leads should know and be able to do. • A one-hour session introducing the Sustainability Leads role was delivered and recorded in 2023, available for viewing by anyone in the firm. In 2024 we launched our first multi-session training for sustainability leads, with the intent to repeat the training annually.
<p>Onboarding</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> • Monthly onboarding for new employees includes: <ul style="list-style-type: none"> » Required viewing of <i>Sustainability Essentials: Intro to Sustainability at HGA</i> » A sustainability meet & greet session with a member from the Sustainability Network. They share the firm's commitments and expectations, demonstrate how to find sustainability resources on HGA's intranet, and guide new hires through an exercise to identify their individual "why" - why sustainability matters to them.
<p>Synchronous Learning Sessions</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> • Each month, HGA offers a variety of education opportunities for employees to receive in-house training on a variety of subjects including leadership, sustainability, and project processes. Participation is voluntary, though sustainability topics are encouraged and promoted to target audiences. As approved by leadership, employees may bill their time to overhead. AIA continuing education is tracked and reported on their behalf. • Dedicated sessions for research summarize the research questions, methodologies, and outcomes of HGA- and/or client-funded research. This has included sustainability topics such as the post-occupancy outcomes of WELL certification and grant-funded research on mass timber applications on the east coast. • <i>Equity Speaks</i> brings diverse voices and perspectives into the firm. Topics have included designing for equitable communities, going beyond land acknowledgments, and fostering culture change. • <i>HGA Tech Talks</i> is an annual, virtual conference highlighting how technology is leveraged to achieve inspired, interdisciplinary design. Each session is 30-60 minutes and features a technology tool and how it has been used on projects, which has included daylighting analysis, ENERGY.script, and templates for project goal-setting using the AIA Framework for Design Excellence. Sessions are recorded and available on HGA's intranet. • <i>The Design Conversation Series</i> invites internal and external design leaders to speak to the firm, providing deep insights that inspire. Speakers have ranged in discipline, experience, and multiple dimensions of diversity and many have demonstrated how specific sustainability subject matter expertise, and/or an integrated approach to sustainability in design, can result in elegant and impactful design outcomes. • <i>Interior Design Pop-ups</i> offer monthly education for interior designers, and have featured multiple sessions related to sustainability topics, including how to use the "HGA Healthier & Sustainable Materials Guide," design for circularity, and how to compare EPDs and HPDs. These sessions are curated and presented by interior designers for peer-to-peer learning.
<p>Other</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> • Dedicated trainings are offered on an as-needed basis, including Cal Green and Title 24 sessions for California offices and sector or office-specific sustainability trainings.

LEARNING & DEVELOPMENT



SUSTAINABILITY
HGA LEARN

<div style="text-align: center; font-size: 2em; font-weight: bold; margin-bottom: 10px;">Just.</div> <p>Organization Name: HGA Organization Type: National Interdisciplinary Design Firm Headquarters: N/A Number of Employees: 1,085</p> <p>Social Justice Indicators:</p> <table style="width: 100%; font-size: 0.8em;"> <tr> <td style="width: 50%;">Diversity & Inclusion</td> <td style="width: 50%;">Employee Benefits</td> </tr> <tr> <td> <input checked="" type="checkbox"/> Gender Diversity <input checked="" type="checkbox"/> Ethnic Diversity <input checked="" type="checkbox"/> Inclusion <input checked="" type="checkbox"/> Engagement </td> <td> <input checked="" type="checkbox"/> Health Care <input checked="" type="checkbox"/> Retirement Provision <input checked="" type="checkbox"/> Family/Medical Leave <input checked="" type="checkbox"/> Training/Education </td> </tr> </table>	Diversity & Inclusion	Employee Benefits	<input checked="" type="checkbox"/> Gender Diversity <input checked="" type="checkbox"/> Ethnic Diversity <input checked="" type="checkbox"/> Inclusion <input checked="" type="checkbox"/> Engagement	<input checked="" type="checkbox"/> Health Care <input checked="" type="checkbox"/> Retirement Provision <input checked="" type="checkbox"/> Family/Medical Leave <input checked="" type="checkbox"/> Training/Education	<div style="text-align: center; font-size: 1.5em; font-weight: bold; margin-bottom: 10px;">Sustainability Services Snapshots</div> <p>Learn more about the wide array of sustainability services offered at HGA</p>
Diversity & Inclusion	Employee Benefits				
<input checked="" type="checkbox"/> Gender Diversity <input checked="" type="checkbox"/> Ethnic Diversity <input checked="" type="checkbox"/> Inclusion <input checked="" type="checkbox"/> Engagement	<input checked="" type="checkbox"/> Health Care <input checked="" type="checkbox"/> Retirement Provision <input checked="" type="checkbox"/> Family/Medical Leave <input checked="" type="checkbox"/> Training/Education				
<div style="text-align: center; font-size: 1.5em; font-weight: bold; margin-bottom: 10px;">ENERGY.script</div> <p>Learn about ENERGY.script at HGA. Setup, Simulation, Optimization, and QA/QC</p>	<div style="text-align: center; font-size: 1.5em; font-weight: bold; margin-bottom: 10px;">HGAU: Sustainability</div> <p>HGAU session recordings on sustainability topics</p>				

- SE 2050
- AIA 2030
- MEP 2040
- AIA Materials Pledge

ON-DEMAND LEARNING

Video modules available on HGA LEARN—our learning management system—for self-directed learning to supplement instructor-led sessions.

<p>Sustainability Essentials - Intro to Sustainability at HGA</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● <i>Introduction to Sustainability at HGA</i> is required viewing for the Sustainability Network, Onboarding, and several Special Programs. Topics include: <ul style="list-style-type: none"> » Why Sustainability? Why does this matter (to the globe, to humans, and to HGA) and how is this a part of our strategic plan? » Establishing a Project Vision that begins with the client's values » Process, Tools and Resources to integrate sustainability into practice ● We are building out introductory videos to help our teams understand the "how" of multiple sustainability topics, ranging from geothermal to certifications, using climate projections in design to healthier materials. This series will launch in 2025.
<p>Sustainability Service Snapshots</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● These short videos that introduce the variety of sustainability services offered at HGA are rolling out in 2024. They answer the common questions asked by Principals, Business Developers, and Project Managers: what value can we bring our clients with this service, who does it, how much time will it take, and how much will it cost?
<p>Recorded Synchronous Learning Sessions - Topic Specific</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● Previously presented learning sessions are available on-demand for future viewing. Topics include: <ul style="list-style-type: none"> » AIA 2030 and Early Energy Analysis » Prioritizing Healthier Materials » The Inflation Reduction Act » Sustainability Leads » Net Zero Carbon Labs » CalGreen » WELL Health Safety » Mass Timber
<p>ENERGY.script training series</p> <p>● ●</p>	<ul style="list-style-type: none"> ● A series of short videos available to guide architects through using ENERGY.script, a Grasshopper script developed by HGA and CAUSE Sustainability to provide an easy and vetted process for design teams to execute early energy analysis on their projects with no prior experience with Grasshopper.

EXTERNAL RESOURCES

Subscriptions that provide access to on-demand education content

<p>Building Green Premium</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● A premium subscription allows for a certain number of staff to stay aware of posts, resource guides, and education content and share lessons learned with colleagues.
<p>LEED User Premium</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● The certifications team have a subscription to LEED User.
<p>Other (ex: USGBC, ILFI, AIA)</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> ● HGA's sponsorships and subscriptions can include access to education content for a limited number of individuals. Staff are also encouraged to use the Career Growth Policies [see page 37] to purchase continuing education courses.

MENTORSHIP & FIELDWORK



While we aim to accommodate a wide range of learning styles, we also know most learn best by applying knowledge to a project application. The pandemic disrupted decades of organic mentorship in our firm, requiring an even more intentional approach to mentorship that we are still fine-tuning. Firmwide, we are developing a national mentoring program, clarifying career pathways and core competencies expected in each role, and are rolling out training for leaders to strengthen their management and mentorship skills.

Learning about sustainability on the job involves subject matter experts working with staff less knowledgeable on those topics; in some cases, our most senior designers and engineers are also learning about new technologies and ways of working. Our Sustainability Network is designed so no individual at HGA is more than two degrees of separation from the person or answer they need, so that SMEs can provide critiques, quality reviews, and mentorship on projects.

ELEVATING SUSTAINABILITY SKILLS - FIELDWORK

HGA's Field Guide to Holistic Design



- Available to internal teams, the Field Guide shows how and when sustainability tasks can be integrated into the design process. At each step, the Field guide includes: sustainability baseline tasks, optional tasks for digging deeper into topics, and key questions for a project team to ask themselves and their client.
 - » This document will continue to be updated as HGA's sustainability baseline is elevated, and includes information for when actions related to our sustainability commitments should occur.

Visioning and goal setting facilitation support



- Miro template for holistic project visioning and goal setting using the AIA Framework for Design Excellence.
- Sustainability Network can be tapped to support project kickoffs and visioning exercises, whether as facilitators, mentors to new Sustainability Leads and other project team members, or participants to offer a specific perspective.

Design Charrette

- Sustainability SMEs can be leveraged by project teams in design charrettes, offering insight and bringing questions to the team to help deepen the project's sustainability approach. We leverage our Sustainability Overhead budgets to supplement project budgets if needed.

Quality Reviews

- Once project goals are set, a quality plan is established to have the drawing set reviewed at key intervals by a quality reviewer. While historically the quality reviewer(s) have focused on life safety, we are working to expand the quality review process to reflect elevated project performance and sustainability expectations.

Job Shadowing

- Our project leaders seek opportunities to give less experienced staff exposure to parts of the design process they may not otherwise participate in: coordination meetings, OAC meetings, client workshops, job site tours, etc. Transitioning many meetings to virtual or hybrid has allowed for more individuals to participate in meetings for this purpose.
- Department leaders can supplement the project budget with a portion of their professional development budgets for less experienced staff to job shadow, including travel expenses to participate in client workshops they might not otherwise have been able to attend.

Certification - Credit Documentation

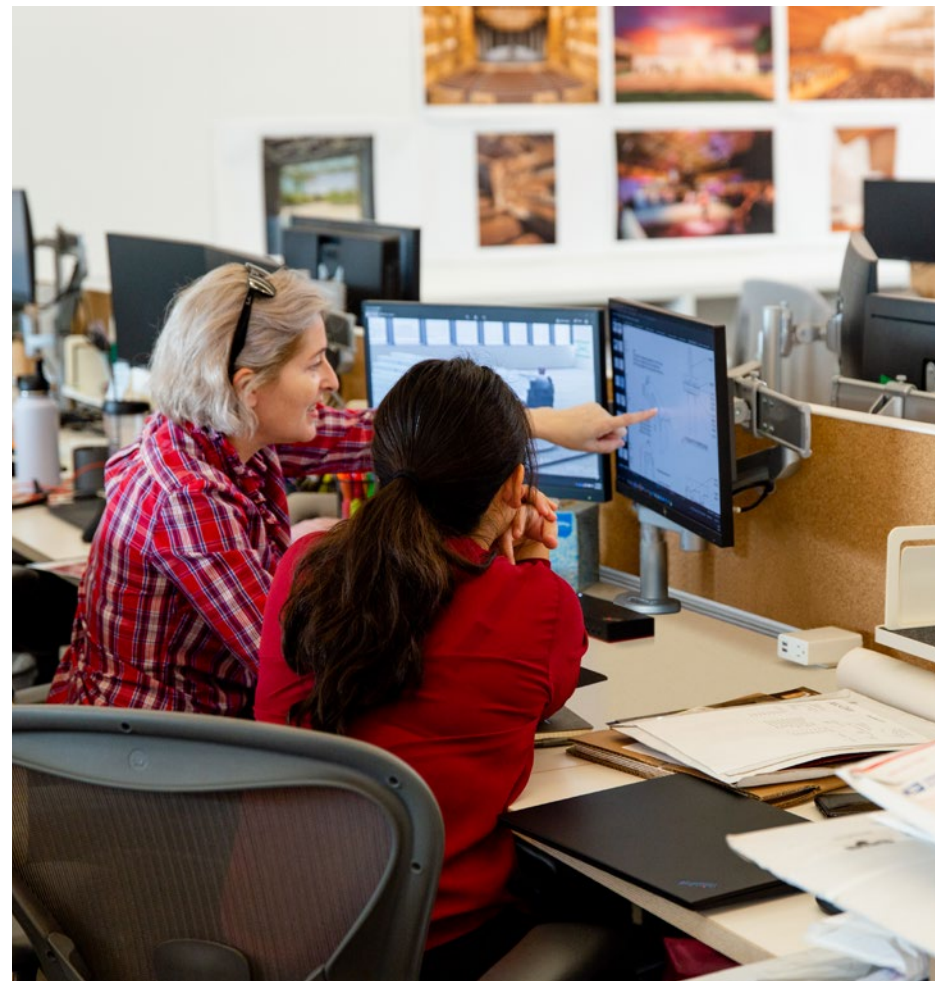
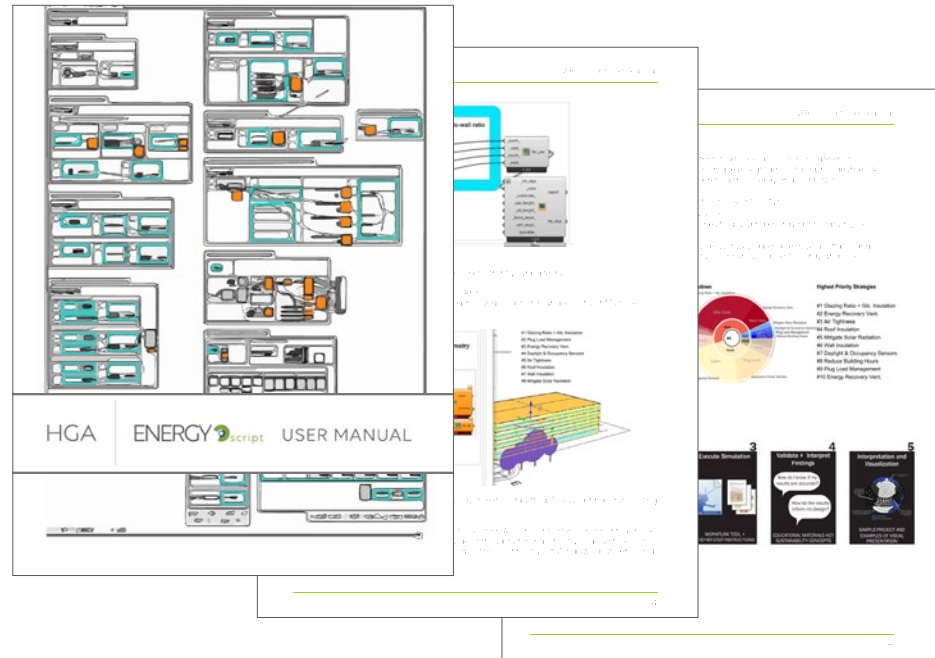
- Our Third Party Certifications team mentors other disciplines on every project pursuing certification. While an architect or engineer may only complete credit documentation a few times over the course of several years, the certifications team bring expertise, tools, and templates to the table and can guide their colleagues through the documentation process.
- Employees seeking to renew their LEED AP with Specialty leverage receive GBCI CE credit on LEED projects. Some staff seek out this experience even if their current projects are not pursuing certification.

Subject Matter Expertise Mentorship

- We are seeing incredible growth of our sustainability services, and need to grow the network of people who can deliver them. Subject matter experts in topics such as Geothermal and Solar PV design, Energy Modeling, and Embodied Carbon are collaborating with engineers, designers, and sustainability leads to use active projects as opportunities to mentor individuals on these topic areas. SMEs act as quality reviewers and help their learning colleagues navigate the nuances and challenges of the project application.

- SE 2050
- AIA 2030
- MEP 2040
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MENTORSHIP & FIELDWORK



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<p>ENERGY.script</p> <p>● ●</p>	<ul style="list-style-type: none"> ENERGY.script installation package on HGA's Software Center, and instructions for installation on HGA's Intranet ENERGY.script course on HGA LEARN Subject Matter Experts include ENERGY.script developers, HGA's Digital Practice Group, and ENERGY.script simulators and connectors, people who have used the script and who can connect to education, resources, FAQs, and technical support ENERGY.script User Manual available on HGA's Intranet
<p>Mentorship Program</p>	<ul style="list-style-type: none"> Mentorship programs have been set up to meet the needs of specific departments and sectors, including a national engineering mentorship program, national interior design, and office-based architecture mentor programs. Mentees request their ideal mentor(s), and program facilitators make the pairings. While there are no formal sustainability criteria in the mentor program, depending on the mentees goals, the program can be a valuable opportunity to build a relationship with a SME and develop specific knowledge to help advance their career and personal sustainability goals.
<p>Product Specifications & Material Identification List</p> <p>●</p>	<ul style="list-style-type: none"> Our MasterSpec includes optional language for certifications that is added to spec sections when needed. Depending on the project goals, the team may decide to use some of this language even if the project is not pursuing certification. This results in a dialogue between spec writer and other design team members, often resulting in education on sustainable materials while refining specification language. The Materials Identification List includes columns for designers and spec writers to track which products contribute to HGA's baseline criteria with columns for chemical content, IEQ, and embodied carbon.
<p>Sustainability G Sheet</p> <p>● ● ● ●</p>	<ul style="list-style-type: none"> To capture sustainability and holistic design goals aligned with the AIA Framework for Design Excellence, we have created a new "for information only" sheet in our Revit starter project. The project sustainability objectives and performance metrics are captured in a single location in the drawing set, kept up-to-date by the Sustainability Lead. Moving forward, we are seeking opportunities to automate more of the information on this sheet, and eventually aim to have the data automatically tied to our data warehouse.
<p>Project-Based Research or Application</p>	<ul style="list-style-type: none"> Projects often present the opportunity to test a new workflow, material, or apply research. We aim to iterate quickly, applying lessons learned on one project and shared through the Sustainability Network or other knowledge sharing platforms to the next project, tapping SMEs for support as needed. LCA, mass timber, whole carbon balancing, and climate adaptive design have all advanced at HGA in this iterative way. In some cases, we see a strategic opportunity to answer a research question through deeper analysis and will leverage the project for research, funded by HGA and/or the client.
<p>Marketing Pursuit or Design Competition</p>	<ul style="list-style-type: none"> Marketing pursuits are an opportunity to bring all of our best ideas to the table. We can collaborate in new ways, give less experienced staff opportunities to explore ideas, and brainstorm "out of box" concepts with consultants and partners. We often leverage pursuits to try something new, which we can then apply to other relevant active projects. Design competitions can be a tool for learning outside of the constraints of a project. Whether for a project pursuit or an association or organization's competition, these opportunities can spark innovative thinking and allow our staff to try out software, tools, and ideas before applying to projects with our clients.

KNOWLEDGE SHARING & COMMUNICATION

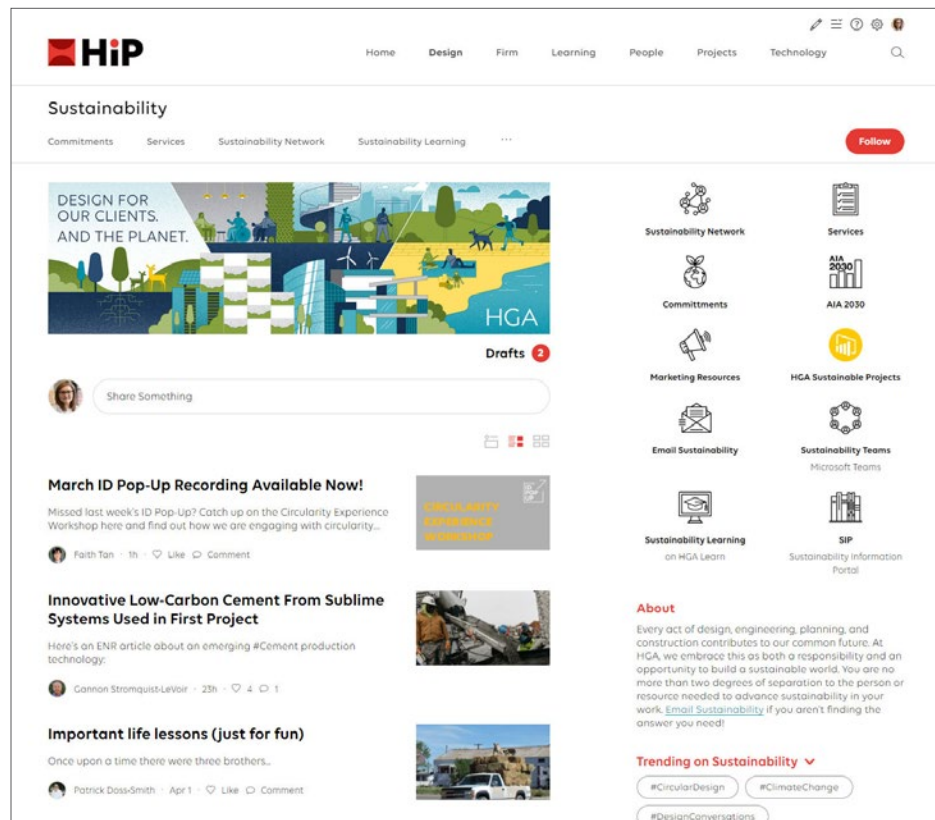


Most adult learners need to be exposed to new information seven times, in different ways, before they can remember and use the information effectively. Our communication strategy for sustainability aims to bring the information, resources, and tools to the audiences who need them, considering where each audience is along the Prosci ADKAR Change Management Spectrum. Messaging is focused on at least one of the following objectives:

- Raising **awareness**.
- Explaining the WHY behind a change to spark a **desire** to participate.
- Providing information to elevate **knowledge**.
- Demonstrating how that knowledge can be applied, asking participants to practice (**ability**).
- Celebrating wins and providing transparency around results for **reinforcement** and accountability.

The Prosci ADKAR® MODEL

ADKAR® Element	Definition	What You Hear
Awareness	of the need for change	"I understand why..."
Desire	to participate and support the change	"I have decided to..."
Knowledge	on how to change	"I know how to..."
Ability	to implement required skills and behaviors	"I am able to..."
Reinforcement	to sustain the change	"I will continue to..."



- SE 2050
- AIA 2030
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ELEVATING SUSTAINABILITY AWARENESS AND KNOWLEDGE

Sustainability Page on HiP (Intranet)

- The HGA Information Portal (HiP)—our intranet—is a knowledge management platform for firmwide information. Sustainability resources include:
 - » Commitments
 - » AIA 2030 reporting resources
 - » Services
 - » Sustainability Network - who to contact for what
 - » Learning resources
 - » Marketing resources
 - » HGA Sustainable Projects - Power BI dashboard with certifications and project performance
 - » HGA's Field Guide to Holistic Design
 - » Resilient Design Process Guide
 - » Healthier & Sustainable Materials
- In 2024, we are working on building out:
 - » Embodied Carbon (including SE 2050 and MEP 2040)
 - » HGA Carbon Neutrality

Sustainability Network Teams

- Our Teams is used for informal communication and collaborative tool and resource development by our Knowledge Communities

HGA Library

- HGA's research library has print and electronic resources, including articles, codes and standards, and exam preparation materials. The library provides research services as requested for projects and pursuits, and regularly acquires new books related to the latest topics in sustainability.

KNOWLEDGE SHARING & COMMUNICATION



- SE 2050
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Monthly Meetings	<ul style="list-style-type: none"> ● We leverage existing meetings to communicate need-to-know sustainability information, including: <ul style="list-style-type: none"> » CDS-Sustainability and Executive Management Team. Sustainability leadership provides updates on sustainability progress and discusses barriers that need to be addressed by executive sponsors. » Sustainability Network. The monthly meeting rotates through workshops, knowledge sharing, education, and strategic planning. » Local Office All-Hands Meetings. The CDS-Sustainability team and Sustainability Council leaders identify key topics that need broad distribution and the local council leaders present prepared slides to their offices, using the talking points provided. Local councils also add their own content to promote local initiatives. » Market Sector Meetings. Typically focused on prepositioning strategy, marketing pursuits, and knowledge sharing, the national market sector meetings have presented an opportunity to embed sustainability into the typical agendas. Some sectors have had dedicated sustainability stories shared by project leaders, and others are looking to integrate sustainability into other agenda items. The approach is led by market sector leaders, market strategists, and/or the sustainability steering committee member. » Practice Group and Department Meetings. In each office, department and practice group leaders gather their staff for a monthly meeting for knowledge sharing, strengthening culture, and conversation. In 2024, we are exploring how to strengthen the presence of sustainability at these meetings. Some offices have liaisons from each department to the local council, and those liaisons are responsible for providing updates to their departments. Some practice groups have requested additional sustainability education in these monthly meetings, which the Sustainability Network will provide in collaboration with a leader from that group.
Sector Planning Retreats and Shareholder Meetings	<ul style="list-style-type: none"> ● In the fall, each sector has a strategic planning retreat to identify market opportunities and develop marketing plans for the following year. These retreats have sometimes included sustainability focused opportunities, informed by market research. ● HGA is an employee-owned company, with approximately 30% of the firm as shareholder-owners. Our annual shareholder meeting includes sector and department specific working sessions, many of which have incorporated sustainability knowledge sharing and strategy workshops. These are generally an opportunity to raise awareness and build buy-in for sustainability strategic priorities.
Inside HGA videos	Internal news-like updates released monthly. Sustainability firmwide announcements, like achieving carbon neutrality, are shared in video segments where staff can hear from targeted individuals. This tool is used for raising awareness and reinforcement.
Board Reports	CDS-Sustainability provides twice annual updates on strategic initiatives to HGA's Board of Directors

CAREER GROWTH POLICIES



- SE 2050
- MEP 2040
- AIA 2030
- AIA Materials Pledge

HGA staff are encouraged to leverage these career growth policies and programs to advance their sustainability knowledge and expertise. Each department has an expense budget for professional development, which can be supplemented by the Sustainability budget when individuals in the Sustainability Network would like to develop expertise on a topic or skill identified by Sustainability leadership as a need in the firm.

After attending a class, seminar, conference, or workshop, staff are expected to share pertinent information with others - their department, colleagues on project teams, and the Sustainability Network. Sharing may be written and shared on our Intranet, the Sustainability Network Teams, or may be a presentation or verbal report-out.

ELEVATING SUSTAINABILITY KNOWLEDGE AND SKILLS - CAREER GROWTH POLICIES

Professional Memberships	<ul style="list-style-type: none"> Professional memberships help enhance staff technical knowledge and offer the opportunity to stay abreast of the developments in the marketplace. HGA pays for membership in one professional association directly related to our business, and we encourage regular and active participation in the association. For a number of hours per year (more for leadership roles in the organization), individuals may bill their participation to a firm overhead number. We have firm memberships to USGBC and ILFI, which include a number of individual memberships and discounted rates for continuing education and accreditation exams.
Professional Accreditations LEED GA and AP with Specialty, WELL AP, EDAC, LFA, PHIUS, Fitwel Ambassador, SITES AP	<ul style="list-style-type: none"> Professional accreditations are strongly encouraged, as they bring value to the individual, our firm, and our clients. HGA pays the full fee for accreditation exams appropriate for each role, pass or fail. If needed, the firm will reimburse 50% of a second exam fee if the exam is taken within six months.
External Training, Seminars, Workshops, and Conferences	<ul style="list-style-type: none"> We encourage supplemental professional training - including seminars and conferences - on topics not readily available through internal training efforts. Requests for attendance at external training classes are reviewed and approved by supervisors, and HGA pays for all associated registration and travel expenses.
Tuition Reimbursement	<ul style="list-style-type: none"> After six months of employment, those working a minimum of 24 hours per week may be eligible to receive partial payment for tuition (includes costs for tuition, books, registration, and lab fees) when pursuing an advanced degree for programs that are job-related or pertain to their career development and fulfills needs of the firm.

OUR COMMITMENTS: EDUCATION STRATEGIES

AIA MATERIALS PLEDGE

The *Materials Knowledge Community* developed and published the “Healthier & Sustainable Interior Materials Selection Guide,” and has delivered several synchronous learning sessions on the topics covered, which were recorded for future viewing. Interior Designers have been encouraged to enroll in the *Parsons Sustainable Building Materials Certificate* and share what they have learned with their colleagues. In 2024, goals include:

- Clarify the HiP home for materials guidance and resources for all disciplines
- Publish a Healthier & Sustainable Furniture Selection Guide
- Educate and share baseline tracker tool to collect data on our materials baseline
- Deliver a synchronous learning session on materials research

AIA 2030

The *AIA 2030 Reporting Knowledge Community* has provided mentorship to teams at two key points during the year: end of year reporting in Q1 and a Q3 mid-year check-in. One of the recorded learning sessions provides an overview of AIA 2030 and what the commitment means for project teams, and the reporting guide available on HiP walks teams through how to benchmark, set targets, and report on EUI and LPD. This session will be updated in 2024.

When the *MEP 2040 Reporting Knowledge Community* presents to MEP Engineering, they will also highlight our continuing AIA 2030 commitment and promote early energy benchmarking to meet the EUI and LPD targets.

MEP 2040

The *MEP 2040 Reporting Knowledge Community* provides regular updates at MEP Engineering Knowledge Sharing meetings, sharing research findings and facilitating engagement with engineers, gathering input and building buy-in. Initially, these meetings have included introductory content to define operational carbon, embodied carbon, and the MEP 2040 Commitment. In 2024, this presentation series will become a more in-depth forum on topics such as ASHRAE 240P/ CIBSE TM65, MEP LCA example calculation methods, and low-GWP refrigerants.

The team is working to provide recommendations to update the *Holistic Design Field Guide* with embodied carbon strategies for MEP and expand on “The Embodied Eight.” We are expanding our HiP resources to include a home for Embodied Carbon, which will include MEP 2040 research and resources for use by project teams.

SE 2050 REQUIREMENTS: EDUCATION

REQ.	ELECTIVES	IMPLEMENTATION
✓	Provide a narrative of how the Embodied Carbon Reduction Champion will engage embodied carbon reduction at each office.	<ul style="list-style-type: none"> • Our embodied carbon champion will be focused on specification updates in 2024, including completing a performance-based concrete specification. We will also require material quantity submissions during the construction phase for all projects with structural scope. This will assist us in quickly collecting data for benchmarking and SE 2050 reporting. After this, the focus will be on updates to our steel, masonry, and wood specifications to focus on embodied carbon reduction. The SE 2050 specification guidance will be used as a starting point.
✓	Present at least (1) webinar focused on embodied carbon and make a recording available to employees. This could be created internally, pulled from an external source (with permission) or pulled from a publicly available source. Include this resource in your orientation and on-boarding program.	<ul style="list-style-type: none"> • In 2023, we gave a firmwide presentation on the embodied carbon updates to CalGreen to familiarize staff in our six California offices with embodied carbon and the upcoming changes that will impact their projects. • In 2024, we will present on the outcomes of internal research exploring early carbon analysis tools.
	Incorporate embodied carbon education in your onboarding process for all new employees.	<ul style="list-style-type: none"> • Onboarding includes the <i>Intro to Sustainability at HGA</i> video series, which introduces the SE 2050 commitment. In 2024, we are developing additional onboarding videos and will be launching videos that expand on embodied carbon education in 2025.
	Train all of your firm’s structural engineers on the core concepts and skills required to measure, reduce, and report embodied carbon.	<ul style="list-style-type: none"> • As we work to embed embodied carbon expertise into our process and designs, education efforts will leverage existing channels within HGA. These include our cross-office structural knowledge sharing meetings and larger firmwide meetings and events. Our structural-specific meetings will focus on helping structural engineers understand their agency as it relates to embodied carbon and how to initiate impactful conversations with project teams and clients. Firmwide meetings will help to elevate the base level of embodied carbon knowledge throughout the firm. • In 2024 HGA will be rolling out a training series (synchronous learning) for structural engineers. This training will provide the basics of embodied carbon as well as outline our data collection process and what is required of every structural engineer to meet our SE 2050 goals.
	Initiate an embodied carbon interest group within your firm and outline their goals. This group may more broadly address sustainability, but they must include embodied carbon.	<ul style="list-style-type: none"> • HGA’s <i>Embodied Carbon & Life Cycle Assessment</i> and <i>SE 2050 Reporting Knowledge Communities</i> are committed to embodied carbon reduction and have led the education efforts on LCA workflow development and implementation. They collectively sift through research and collect data, helping inform designers of available embodied carbon reduction strategies and offering instruction and guidance on their implementation. The cross-disciplinary EC/LCA team synthesizes research to formulate resources and workflows for designers, with the goal of making embodied carbon reduction efforts more widely a part of everyday practice at HGA.
	Create an Embodied Carbon digital resource wiki and/or forum on your firm’s internal website for staff to create, share, and discuss Embodied Carbon educational resources.	<ul style="list-style-type: none"> • Currently, staff can ask questions about embodied carbon and resources are posted both on our intranet and the Sustainability Network Teams page. In 2024, we will launch an Embodied Carbon page on our intranet (HiP), which will hold all existing resources developed to-date and provide a community for questions and dialogue.
	Engage with a CLF Regional Hub. This could mean: <ul style="list-style-type: none"> • Attending presentations or working sessions and reporting back to the firm • Co-chairing a hub 	<ul style="list-style-type: none"> • HGA staff have been engaged with CLF Regional Hubs in Minnesota, Wisconsin, and San Francisco, bringing lessons learned back to our internal knowledge communities.

OUR COMMITMENTS: REPORTING APPROACH

Transparency encourages responsible actions and drives positive change. We actively track and annually report our efforts to achieve industry commitments and meet our internal goals. In disclosing our efforts to reduce carbon emissions and achieve healthy communities - and by learning from others who do the same - we contribute to the collective shift.

We can't change what we don't measure and we know public reporting is key to progress. We are continually working on streamlining project data collection, improving reporting tools, and refining our workflows so capturing baselines, targets, and modeled data becomes integral to our work.

SUSTAINABILITY LEAD ON EVERY PROJECT

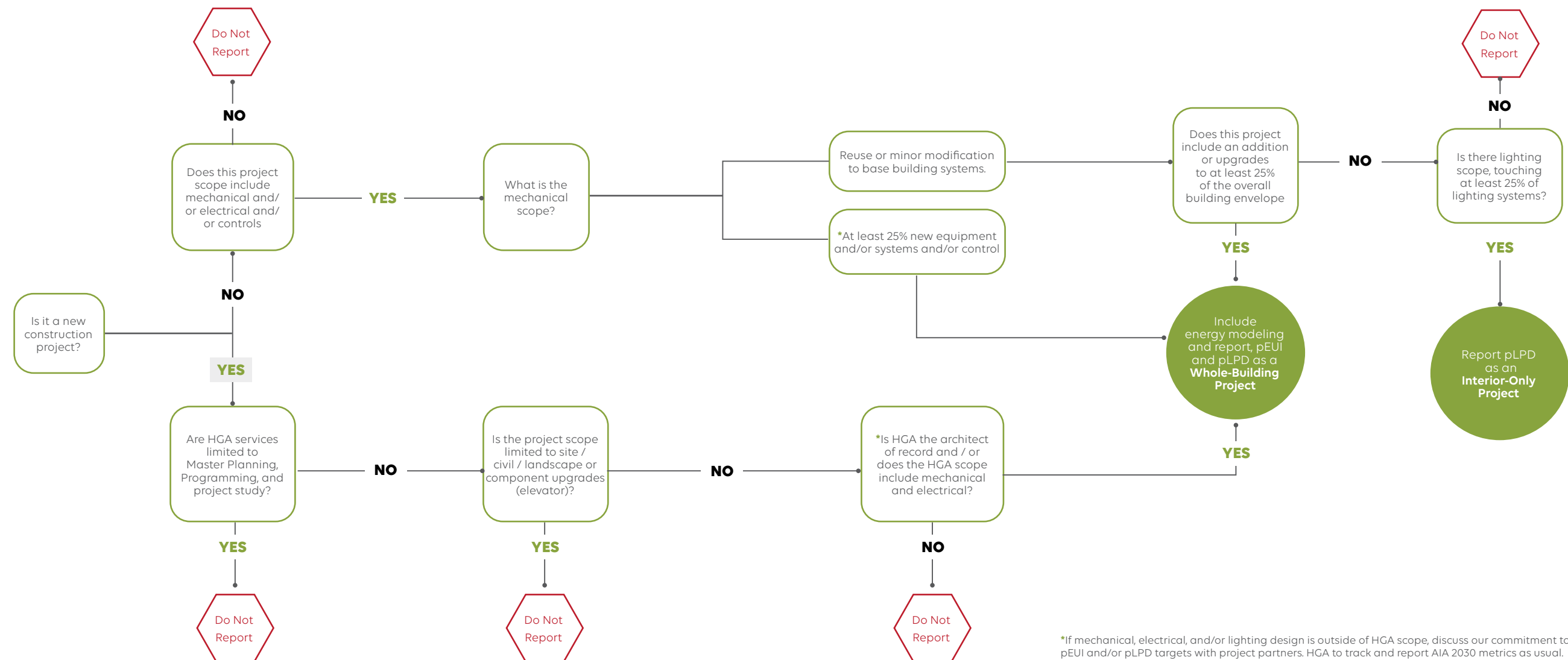
A new project number cannot be set up without identifying a sustainability lead on the project team. However, we don't have a clear way to identify which project teams are authentically engaging that lead and setting project specific sustainability goals. In the next few years, we are working on improving how we track and report on multiple metrics associated with the holistic design process, including qualitative metrics such as equitable, authentic engagement of disciplines on projects.

Once eligible projects are determined, we ask those project teams to participate in reporting. AIA 2030 reporting for HGA projects is continually improving, and this reporting is directly tied to the operational carbon reduction portion of MEP 2040.

AIA 2030 + MEP 2030

We aim to report on 100% of our eligible projects, using a flow chart to help project teams determine eligibility.

DOES MY PROJECT NEED TO BE REPORTED TO AIA 2030?



AIA 2030 REPORTING APPROACH

Responsible Parties	<ul style="list-style-type: none"> Sustainability Leads are asked to enter 2030 reporting data for their projects into our accounting and project planning software. They engage other team members as required, including Mechanical Engineers, Lighting Designers, and Energy Modelers. In cases where we have out-of-house consultants or MEP systems are design-build, our teams work with those consultants to get the predicted EUI and LPD. These expectations are integrated into our legal templates for subconsultant agreements. CDS-Sustainability exports data in aggregate and uploads to DDx
Reporting Frequency	<ul style="list-style-type: none"> While teams are encouraged to do this throughout the project, most update when nudged. Currently, the largest reporting push is in Q1, and we do a mid-year reminder in Q3 We aim to make reporting a more ongoing process, integrated into the holistic design process, and are working on the technical and cultural changes required
Outreach to encourage reporting	<ul style="list-style-type: none"> The <i>AIA 2030 Reporting Knowledge Community</i> reaches out to project Sustainability Leads and PMs Reinforcement outreach for peer-to-peer nudging leverages local Sustainability Council leaders and Steering Committee members As we approach our internal reporting deadline, the Director of Sustainability, Market Sector Leaders, and Office Directors do additional outreach to hold teams accountable to completing their reporting We provide reporting updates on our intranet and to the Sustainability Network to make progress transparent In 2024, we set up a reporting dashboard so the Sustainability Network could see progress by sector and office We aim to have an ongoing reporting dashboard, tied to our project planning software, so reporting progress can be seen in real time
Tools and Resources	<ul style="list-style-type: none"> On our AIA 2030 Intranet page, we link to: <ul style="list-style-type: none"> » Zero Tool » Labs 21 Benchmarking Tool » An excel-based early energy benchmarking and targets tool » Progress reports, comparing our project performance to the industry results published by AIA » Our AIA 2030 Reporting Guide, which has step-by-step instructions to complete the reporting process. » The <i>AIA 2030 Reporting Knowledge Community</i> updates this guide each year to accommodate changes in AIA expectations around required reporting metrics. » An email link to reach out to our <i>AIA 2030 Reporting Knowledge Community</i> members During Q1 reporting, our Knowledge Community hosts <i>AIA 2030 Office Hours</i>, drop-in zooms available for anyone who has questions about reporting Our Knowledge Community meets for 1:1 conversations with any project team that requests additional support
Billing Time	<ul style="list-style-type: none"> The Sustainability Lead bills all AIA 2030 related activity, including reporting, to the project. In a holistic design process, energy goals are integrated into the workflow, and reporting takes no more than a few minutes. Time spent by our <i>AIA 2030 Reporting Knowledge Community</i> is part of our overhead budget. We invest a significant number of hours into this effort, and are continually looking for opportunities to streamline and simplify the workflow.
Feedback Loops	<ul style="list-style-type: none"> We are continually improving this process with input from across the firm. Feedback loops are formal and informal, including: <ul style="list-style-type: none"> » A survey to Sustainability Leads and PMs » Feedback solicited via email and in conversations » A plus/delta conversation with the <i>AIA 2030 Reporting Knowledge Community</i> after each reporting cycle (Q1 and Q3), with deltas informing immediate process improvements » Ideation sessions with our data and analytics team to illustrate barriers and discuss strategies to continue working towards automation

AIA MATERIALS PLEDGE

While AIA is seeking out reliable and consistent metrics to support this pledge, we have been exploring how we can track specifications that align with the pledge statements. Members of our *Materials Knowledge Community* have tested a tracking tool on projects, summarizing percentages of products specified that did/did not comply with HGA's materials baseline and each pledge statement. This tool is integrated into our Material Identification List, and could be compiled with other projects for a set of metrics that could illustrate firmwide adoption of our baseline criteria. We would like this process to be scalable, but currently it is a manual workflow. This will be a continued area of focus as we integrate sustainability into data and analytics goals in the coming years.

MEP 2040 | EMBODIED CARBON

HGA aims to measure and report embodied carbon on two projects in 2024 from two of our market sectors (Arts, Community and Education; Public Corporate; Healthcare; Science and Technology). Our *MEP 2040 Reporting Knowledge Community* is identifying projects and will be completing the life cycle assessments. This work has already begun on several projects, where the team is using high level values from outside research and are testing One Click for MEP. We are uncovering questions around data validity and reliability and are exploring how the MEP systems LCA relates to the Whole Building LCAs we complete for LEED Certification (structure and envelope), the data we are gathering for SE 2050, and interior material LCA comparisons.

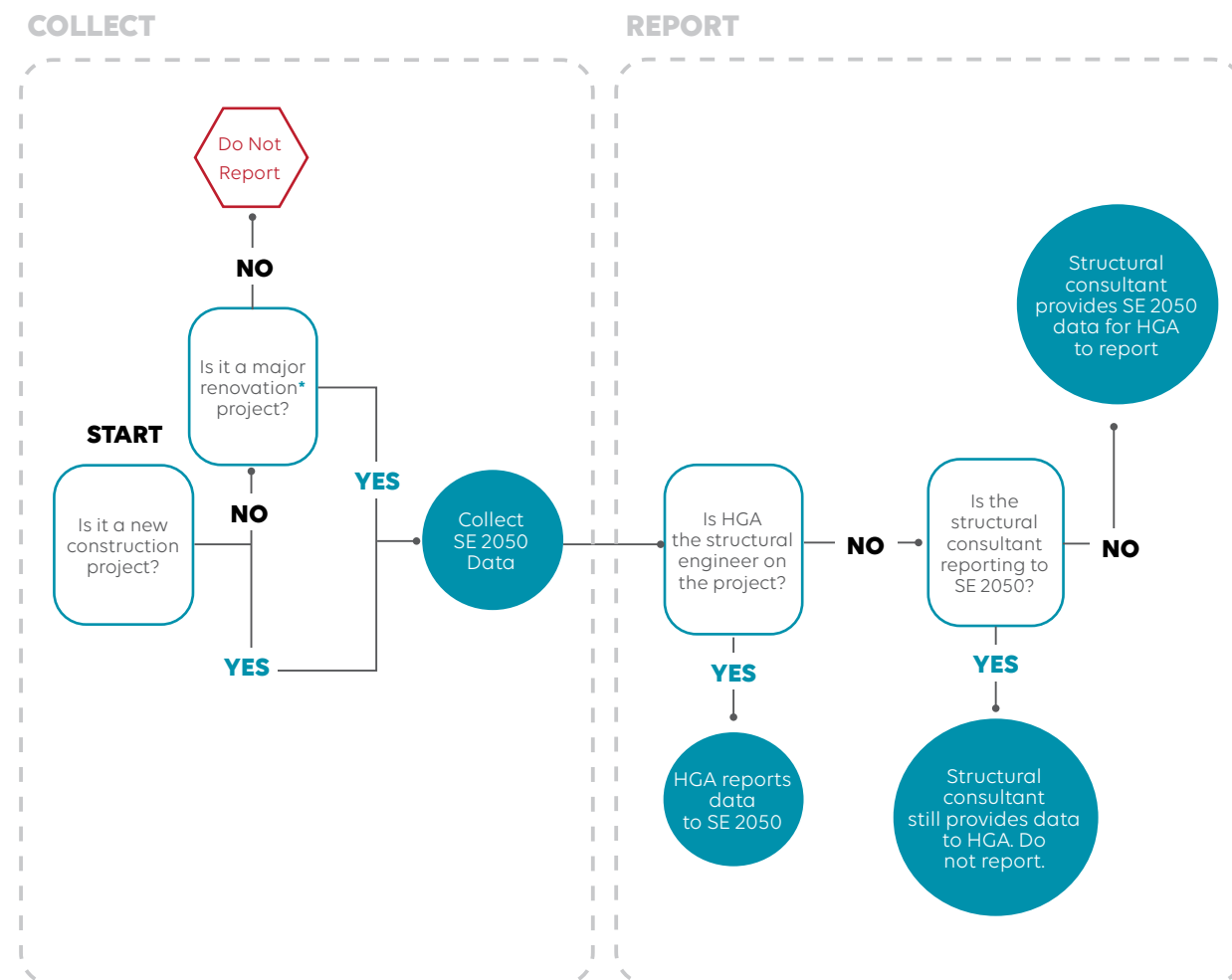
The results will be used to develop a reduction target in 2025, either as a percent reduction below a baseline or a more concrete not-to-exceed CO₂e value. The work in 2024 will also help to solidify our MEP LCA workflow, and develop a team of experts.

SE 2050

After signing SE 2050, we began with conducting LCAs on past projects within each of our project sectors, using material takeoff data from contractors. Analyzing past projects has helped us formulate internal baselines and is informing project embodied carbon goals based on project type. In 2024, we aim to report on 75% of applicable projects, and in 2025 we aim to report on all new construction projects with HGA structural engineering services. Structural engineers use the following flow chart to determine project eligibility.

Once eligible projects are determined, we ask those project teams to participate in reporting. AIA 2030 reporting for HGA projects is continually improving, and this reporting is directly tied to the operational carbon reduction portion of MEP 2040.

DOES MY PROJECT NEED TO BE REPORTED TO SE 2050?




*Major renovation includes projects with significant removal, addition, or remediation.

SE2050 REPORTING APPROACH

Responsible Parties	<ul style="list-style-type: none"> Structural Engineers are asked to provide our <i>SE 2050 Reporting</i> Knowledge Community with the reporting data for their projects, using material takeoffs provided by the contractor. In a growing number of cases, the reporting is based on design phase LCAs that have been completed for third-party verified certifications such as LEED and Minnesota B3. On these projects, the LCA specialist provides the data needed for reporting. Projects with out-of-house structural engineering are not currently reporting for SE2050. We have a long-term goal to integrate this reporting into all projects touched by HGA, but have not yet identified a timeline or strategies to achieve this. The Embodied Carbon Reduction Champion shares reporting data to SE2050.
Reporting Frequency	<ul style="list-style-type: none"> While LCAs are conducted throughout more projects every year, reporting is only currently happening in Q1. We aim to make reporting more integrated with AIA2030 and a more ongoing part of our holistic design process. We are working on the technical and cultural changes required to achieve this goal.
Outreach to encourage reporting	<ul style="list-style-type: none"> The Embodied Carbon Reduction Champion reaches out to Structural Engineers, and shares the flow chart to determine eligibility. Engineers on eligible projects are asked to share their data by a certain date. As we approach our internal reporting deadline, the Structural Engineering Practice Leader does additional outreach to hold engineers accountable to completing their reporting.
Tools and Resources	<ul style="list-style-type: none"> We are using multiple LCA tools: <ul style="list-style-type: none"> » One Click LCA: primary whole building LCA tool » EPIC Care Tool: early phase analysis » One Click LCA's Revit Integration Tool: detailed material extraction » SE2050 ECOM Spreadsheet: used on projects that do not have material specific EPDs, including bay studies We have compiled a specification resource chart from EPDs in One Click LCA of common structural materials that represent industry standards for the regions we most often work in. This resource allows for comparable baselines to be developed between projects and project types. Teams can then compare selected materials against the baseline, industry standard selections. A workflow document outlines how to use One Click LCA to discover opportunities for embodied carbon reduction and informs the LCA capabilities in every design phase. While we initially intended for this document to educate structural engineers and expand One Click LCA use beyond the LCA specialists, we have recognized the importance of the specialists, and are now leveraging this resource to help educate staff who are interested in growing LCA expertise. In addition to the SE2050 database, we maintain our own Life Cycle Analysis Database that our Structural Engineers and <i>Embodied Carbon & LCA</i> Knowledge Community can reference for benchmarking. In 2024, we will be looking at how to integrate this database into the Sustainability Metrics dashboard we have for AIA2030 and certifications metrics. In 2024, we are building out an intranet page for SE2050 reporting resources, including a step-by-step guide on how to report (following the precedent set by the "AIA 2030 Reporting Guide").
Billing Time	<ul style="list-style-type: none"> We aim to have Structural Engineers and LCA specialists bill all time, including reporting, to the project. That said, we are still working on streamlining reporting, and have leveraged overhead budgets to supplement the project budget at times. Time spent by our <i>SE 2050 Reporting</i> Knowledge Community is part of our overhead budget.
Feedback Loops	<ul style="list-style-type: none"> We are continually improving this process with input from across the firm. Feedback loops are formal and informal, including: <ul style="list-style-type: none"> » Requests for ideas and feedback at structural engineering local department and national practice meetings » Feedback solicited via email and in conversations » A plus/delta conversation with the <i>SE 2050 Reporting</i> Knowledge Community after each reporting cycle, with deltas informing immediate process improvements » Ideation sessions with CDS-Sustainability to illustrate barriers and discuss potential actions.

SE 2050 REQUIREMENTS: REPORTING

REQ	ELECTIVES	IMPLEMENTATION
	<p>Submit a minimum of (2) projects per US office with structural engineering services to the SE 2050 Database. You are not required to submit more than (5) total projects across your firm, but we encourage you to submit as many as possible! Firms are expected to follow with the spirit of the SE 2050 Program in determining how many total projects your firm must submit.</p>	<ul style="list-style-type: none"> HGA has structural engineering in 6 offices: Minneapolis, Milwaukee, Washington D.C., Sacramento, Los Angeles, and Boston, with the latter two being "satellite" teams with 1-2 engineers in each office. Many projects are staffed across offices, so we consider HGA structural to be one national team. We are still working on how we can determine what number of projects are eligible. In 2024 we will finalize this so we can understand the percentage of eligible projects that are reporting. Currently, eligibility is determined by structural engineers who are engaged with SE 2050, and reporting is a manual process. This limits the number of projects that can report. We have submitted 7-8 projects to SE 2050 each year.
	<p>For multi-office firms, describe how each office is measuring and reporting embodied carbon.</p>	<ul style="list-style-type: none"> To aid in early design decisions, structural engineers often conduct itemized LCAs of standard structural materials and details to highlight differences in embodied carbon, including single bay LCAs that can be extrapolated over the building footprint. These early studies are shared with the architects and owners and have often helped build buy-in for low-carbon alternatives. In later design phases, teams extract material quantities and track impact categories by using the One Click LCA Revit model integration tool. LCAs include life cycle stages A1-C-4, though we primarily focus on A1-A3 since EPDs have more consistent data available for those stages. See the "reporting approach" table above for more details.
	<p>Compare the embodied carbon emissions from multiple projects across your firm. Analyze and document what data or pieces of information are most important and communicate the findings to your firm.</p>	<ul style="list-style-type: none"> HGA developed a Life Cycle Analysis Database to enhance project data tracking, progress assessment, and results comparison. This database allows us to collect all information from Life Cycle Analyses performed from 2021 to present. This database contains: <ul style="list-style-type: none"> » Project information including climate zone, market sector, size, location, timeline » Structural Engineer(s) and other relevant project contacts » Analysis software/tools utilized » LCA evaluation results Filters are set up to allow for project comparisons, identify areas of success, and establish criteria for further improvement. As additional projects undergo the LCA process, the database will grow and provide exponentially enhanced value to the firm.
	<p>Include all structural material quantities in your submissions to the SE 2050 database.</p>	<ul style="list-style-type: none"> We have included materials quantities on both projects that had early design phase LCAs and those in construction or complete where we have submitted contractor-provided material quantities.
	<p>Propose other actions that promote the reporting of embodied carbon data and describe their value.</p>	<ul style="list-style-type: none"> Our SE2050 eligibility flowchart aims to help engineers understand their responsibility in SE 2050 reporting and clarify when a project is required to report. This flowchart concisely breaks down project reporting applicability using simple a yes/no format.

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When something works well in sustainable design, it is our responsibility to share it. We are in a global climate crisis! There is no time to prioritize competitive advantage when we can accelerate climate action by scaling up that great idea, workflow, or tool more quickly by sharing it externally.”



Ariane Laxo CID, LEED AP BD+C, LEED AP ID+C, EDAC
Director of Sustainability

To build a healthier world for future generations, we are working with professional associations, research partners, educators, clients, and peers to accelerate the progress our industry is making on climate change mitigation and adaptation. When it comes to climate action, we join many of our peers in a culture of sharing best practices. When one firm figures out something that works well, it is our responsibility to share it. We use several platforms for sharing commitments, strategies, project stories, and best practices externally, detailed in the following tables.



FBI Central Records Complex

EXTERNAL KNOWLEDGE SHARING, ADVOCACY, AND OUTREACH

HGA'S WEBSITE	
About - Sustainability	<ul style="list-style-type: none"> • Our sustainability philosophy, commitments, and impact
Impact Report	<ul style="list-style-type: none"> • This annual report shares how we are leaving a lasting impact with our work, including metrics demonstrating progress on our sustainability commitments.
Sustainable Design Services	<ul style="list-style-type: none"> • An overview of our sustainability services with select project case studies and Sustainable Design Leadership
News & Events	<ul style="list-style-type: none"> • Press releases, new commitments, awards, and research outcomes • Sustainability news is posted several times per year, and has included: <ul style="list-style-type: none"> » HGA Signs MEP 2040 Commitment to Meet Carbon Neutrality Goals » HGA Sets Carbon Neutrality Goals for Internal Business Operations » HGA Joins Industry Leaders in Urging Biden-Harris Administration to Take Action on Green Building
Insights	<ul style="list-style-type: none"> • Ideas that demonstrate thought leadership, illustrate best practices, share resources/tools, and tell project stories • Sustainability Insights are posted multiple times per year, and have included: <ul style="list-style-type: none"> » Engineering Innovation Video (I.V.) - Decarbonization » The Value of Decarbonizing Interior Materials » Ready for Anything: An Archives Facility Built for Resilience
ENERGY.script	<ul style="list-style-type: none"> • An overview of the custom grasshopper script we created with CAUSE Sustainability for early design phase energy analysis, where others can request the script for their own use

KNOWLEDGE SHARING	
Conference Presentations	<ul style="list-style-type: none"> Each year, HGA staff present workflows, tools, project stories, and best practices at a variety of sustainability and sector-specific conferences, including: <ul style="list-style-type: none"> » AIA National and Regional Conferences » American Alliance of Museums (AAM) National and Regional Conferences » American Society of Health Care Engineering (ASHE) » ASHRAE Conferences » Association for the Advancement of Sustainability in Higher Education (AASHE) » Greenbuild and Regional USGBC Conferences » International Institute for Sustainable Laboratories (I2SL) » International Mass Timber Conference » National Adaptation Forum and Regional Climate Adaptation Forums » Net Zero Conference Where possible, we prioritize workshops over lecture style formats, aiming to teach skills to conference participants.
Peer-to-Peer Sharing	<ul style="list-style-type: none"> Sustainability knowledge sharing with peers in the industry has included: <ul style="list-style-type: none"> » AIA Large Firm Round Table Sustainability Committee. Since the Large Firm Round Table was founded in the 1980's, HGA has participated in peer-to-peer knowledge sharing with other large architecture firms. The Sustainability Committee includes sustainability leaders from each member firm, and this group makes recommendations for shared commitments across the member firms that are reviewed and adopted by the CEOs, such as erational carbon neutrality goals and project performance metrics data transparency. » Building Green Sustainable Design Leaders. A forum for sustainability leaders at architecture and engineering firms. » Carbon Leadership Forum. HGA participates in the Minnesota and San Francisco hubs, sharing our own embodied carbon research with peers and contributing to resources to accelerate carbon reduction across building materials. » Minnesota Resiliency Collaborative. HGA founded an informal community of practice for climate adaptation practitioners across public, private, and education ctors. The group met a few times per year from 2016-2022, when the University of Minnesota Climate Adaptation Partnership received funding from the Minnesota Legislature to create a climate projection model for the State of Minnesota. Knowledge sharing now is more broadly available through MCAP and other forums in Minnesota that did not yet exist when the Collaborative was founded.
Adjunct faculty and guest lecturers	<ul style="list-style-type: none"> Many HGA staff have adjunct positions with colleges and universities, and even more present as guest lecturers at the invitation of faculty. These are rich opportunities to compliment curricula with practice-based knowledge about sustainability in the built environment. Institutions have included: <ul style="list-style-type: none"> » California State University » Dunwoody College of Technology » Kent State University » University of Minnesota

COLLABORATIVE RESEARCH	
Research Partnerships and Consortia	<ul style="list-style-type: none"> Research partnerships and participation in consortia enables our research portfolio of primary and secondary studies across multiple topics - including sustainability and resilience. Current and past relationships include: <ul style="list-style-type: none"> » University of Minnesota College of Design Consortium for Research Practices. Since 2012, HGA has hired students each year who are enrolled in the MS Research Practices program in the School of Architecture to complete research projects, the majority of which have been within the Climate Change, Clean Water & Sustainable Ecosystems and Just Communities topic areas. Many have been hired full-time by HGA after graduation, and continuing to advance those topics in practice. » University of Minnesota Climate Adaptation Partnership (MCAP). HGA and MCAP completed a multi-faceted, comprehensive effort in 2022 to characterize the climate information needs of architecture and engineering (A&E) professionals, challenges they encounter accessing, understanding, and applying this information, and opportunities to advance climate resiliency actions and services provisioned by the A&E sector. » University of Minnesota Center for Sustainable Building Research (CSBR). HGA has partnered with CSBR on several efforts to advance climate change adaptation and resilience in the built environment. » HGA partnered with Carnegie Mellon University's Center for Building Performance and Diagnostics to model light conditions and design methods to manage light and heat entering the building, promote natural daylight, and lessen bird strikes on UPMC Presbyterian Hospital. HGA leveraged the Center for the Built Environment (CBE) post-occupancy evaluation survey for multiple projects, and was an Industry Partner for many years In collaboration with the Minnesota Department of Health, HGA conducted a national assessment of state climatology offices, identifying which had climate projection data available and the source of those data. This study informed future work with MCAP and advocacy with the Minnesota Legislature to fund a dynamical downscaled climate projection model for the entire state.
Research Publications	<ul style="list-style-type: none"> Many of HGA's internally funded research projects are published and presented at EDRA and other conferences. Over the last seven years, >30% of 105 research projects funded by internal grants have related to sustainability topics. We publish the results of many sustainability research projects, whether white papers or peer-reviewed journals. For example: <ul style="list-style-type: none"> » The Benefits of WELL Certification: A Post-Occupancy Evaluation of McGough Headquarters » Climate Forward? How Climate Projections Are(n't) Used to Inform Design, co-published with MCAP » Projected climate data for building design: barriers to use, co-authored policy analysis published in Buildings & Cities » Furthering Mass Timber Construction A case study on the first commercially scaled mass timber project in the state of Maine that features the HGA-designed Barry Mills Hall and the John and Lile Gibbons Center for Arctic Studies at Bowdoin College. This case study was funded in part by the United States Endowment for Forestry and Communities through the 2019 Mass Timber University Grant Program.
Association and Committee Involvement	<ul style="list-style-type: none"> HGA staff regularly serve as national and local/regional board and committee members of AIA, ASHRAE, USGBC, and other professional associations and organizations. Individuals in leadership roles may bill a portion of their participation time to a firm overhead number. Notable involvement has included: <ul style="list-style-type: none"> » Wisconsin AIA Committee on the Environment, which was co-founded by Dan Kalkman, an HGA architect » Participation in national AIA committees, including the Resilience and Adaptation Advisory Group and the Committee on the Environment's AIA Framework for Design Excellence sub-committee » USGBC Chapter boards, the Chapter Steering Committee, and Emerging Professionals National Committee

OUR COMMITMENTS: ADVOCACY STRATEGIES

AIA MATERIALS PLEDGE

HGA Interior Designers have openly shared the resources developed by the *Materials Knowledge Community* externally, including:

- [Wellbeing and Design: Healthier & Sustainable Interior Materials Selection Guide](#), an Insights Post on HGA.com
- Workshops and presentations to local industry association chapters and universities.

AIA 2030

HGA's project performance metrics (EUI and LPD percent reduction) are included as part of our [Impact Report](#), as compared to the results published by AIA for all signatory firms.

MEP 2040

As a MEP 2040 signatory, HGA participates in quarterly forums and working groups to learn from others in the industry. We are currently involved in the *MEP2040 Data Analysis and Reporting* and *Manufacturers and EPD* working groups and are identifying additional staff to engage with the other working groups. Our MEP teams have begun to ask equipment manufacturers to discuss the embodied carbon of their products when at lunch & learns and when providing product updates. Engineers have also begun to request EPDs from manufacturers when exploring systems options for projects.



SE 2050

HGA's project embodied carbon metrics are included as part of our [Impact Report](#). We share embodied carbon and mass timber knowledge and case studies broadly to push the industry forward faster.



Marlboro Music Reich Hall

SE 2050 REQUIREMENTS: ADVOCACY

REQ.	ELECTIVES	IMPLEMENTATION
	Describe the value of SE 2050 to clients. How can your design teams collaborate to reduce embodied carbon? Please attach any associated marketing materials.	<ul style="list-style-type: none"> On many projects, we begin discussing embodied carbon as early as the pursuit, which we define as the sum of all the greenhouse gas emissions (primarily carbon dioxide) resulting from mining, harvesting, processing, manufacturing, transportation and installation of building materials. We explain the importance of reducing embodied carbon now in the context of global carbon emissions reduction targets, and often cite Architecture 2030, which states that embodied carbon will be responsible for nearly half of total new construction emissions between now and 2050. SE 2050 is introduced as a tool for embodied carbon reduction. <ul style="list-style-type: none"> We have worked with multiple disciplines to illustrate to our clients how structural systems fit into the whole life carbon assessment of the project and a whole carbon balancing approach On California projects, we are beginning to discuss the CalGreen embodied carbon criteria with clients HGA is working on three of the eleven projects participating in a 6-month GSA Low Embodied Carbon Pilot, which leverages the U.S. government's vast purchasing power to spur demand for construction materials that are made with substantially lower levels of embodied greenhouse gas emissions. The value of mass timber as a low-carbon structural system is highlighted on our Mass Timber page on HGA.com Thought Leadership posts on HGA.com, which are viewed by current and prospective clients, include: <ul style="list-style-type: none"> Engineering IV - Embodied Carbon, an introduction to embodied carbon reduction An overview of HGA efforts to develop a performance-based concrete master specification and associated reference guide External publications educating technical and broad audiences on topics related to embodied carbon include: <ul style="list-style-type: none"> Mass Timber: Sustainable and Enduring, a case study of Bowdoin College published in <i>Engineered Systems Magazine</i> Ethan Fogle, our Embodied Carbon Champion, was a featured guest on episode #72 of the Structural Engineering Podcast, where he spoke about the benefits of embodied carbon reduction in structural engineering, benefits to both projects and their communities, & current and future impacts on the industry. This was a unique advocacy opportunity to broadcast the basics of embodied carbon reduction and to share SE 2050's goals.
	Publicly declare your firm as a member of the SE 2050 Commitment.	<ul style="list-style-type: none"> HGA announced our public commitment to SE 2050 on February 11th, 2021 The news was shared in a client email newsletter in spring of 2021 We state our SE 2050 commitment in our marketing language, including on the Sustainable Design Services page on HGA.com
	Give an external presentation on embodied carbon that demonstrates a project success or lessons learned.	<ul style="list-style-type: none"> HGA structural engineer Lauren Piepho, a subject matter expert on mass timber, presented several case studies and best practice workshops, including: <ul style="list-style-type: none"> Advancements in Timber: Cutting-Edge Mass Timber Research and Design at the 2024 International Mass Timber Conference Advanced Workshop: Mass Timber Use in Storm Shelter Construction at the 2024 International Mass Timber Conference, featuring the Blake School Early Learning Center in Hopkins, MN CLT Shearwall Design at Bowdoin College Connections, Seismic Analysis and Details on WoodWorks YouTube series Mass Timber How-Tos Embodied Carbon Assessments of Wood: From Early-Stage Analysis to WBLCA, a WoodWorks webinar
	Engage with structural material suppliers in your region to communicate the importance of EPDs and low-carbon material options.	<ul style="list-style-type: none"> On a project in North Dakota, HGA's lead structural engineer Kevin Borth worked with a researcher to prepare concrete mix design parameters for local suppliers to meet new embodied carbon goals put forth by the client - the U.S. General Services Administration (GSA). This approach has been shared within HGA's structural engineering team and is being replicated on other projects in other regions.
	Engage with local, state, and federal governments to communicate the importance of low-embodied carbon procurement and construction policies, and provide expert testimony to this effect.	<p>HGA structural engineer Jon Wacker serves on the Minnesota Environmental Standards Procurement Taskforce, which was established under Minnesota Laws 2023, Chapter 60 and Chapter 62 "to examine the implementation of a program requiring vendors of certain construction materials purchased by the state to:</p> <ol style="list-style-type: none"> submit environmental product declarations that assess the material production life cycle environmental impacts of the materials to state officials as part of the procurement process; and meet standards established by the commissioner of administration that limit greenhouse gas emissions impacts of the materials."

WALKING THE TALK: HGA OPERATIONS

In addition to our work with clients, we recognize that our own operations present an opportunity to live our sustainability values and demonstrate accountability. We aim to foster regeneration, ecological and financial balance, and healthy communities.

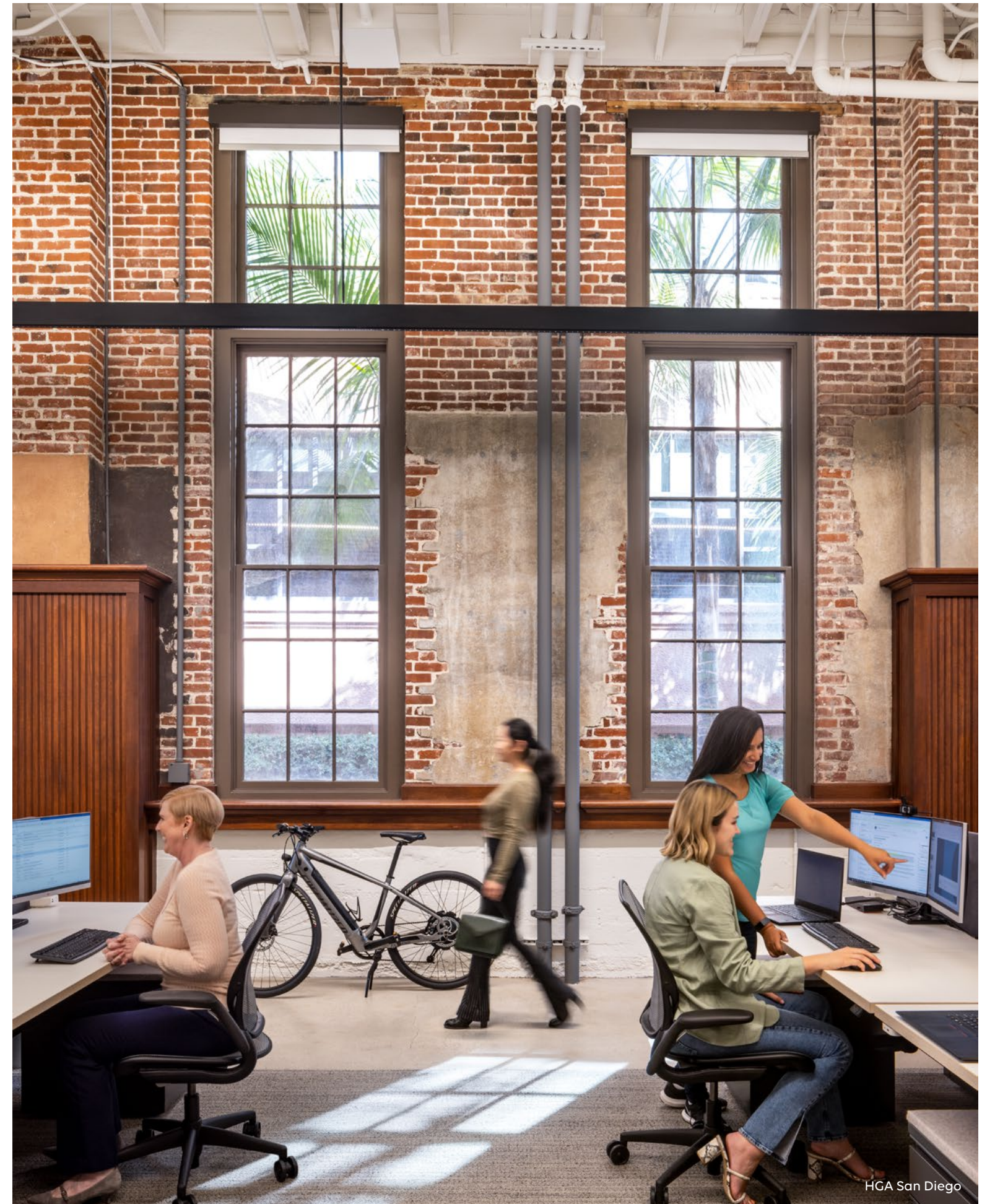
OFFICE CERTIFICATIONS

We are committed to using every lease renewal, expansion, or move as an opportunity to evaluate third-party certification programs. Each of our 13 offices is required to be certified through WELL Health Safety and an additional certification of their choice. Four offices have LEED Gold or Platinum certifications, with a fifth expected by the end of 2024. We are exploring WELL and Fitwel for upcoming office moves.

LEADERSHIP AND POLICIES

Each office has implemented different sustainability initiatives led by the office director, local sustainability council, and administrative staff. Leadership examples include our net zero energy office in Madison and a waste audit conducted in Minneapolis that informed waste stream education. Several policies and strategies are implemented in the majority of offices, including:

- **Transportation Reimbursement.** HGA pays for 20% of the cost of public transit passes for employees
- **Bike Parking.** We offer bike parking and showers to encourage carbon-free transportation.
- **Fitness Facilities.** Many offices include on-site fitness facilities, showers, and locker rooms at no cost to employees
- **Reduced Energy Consumption.** Energy use in offices is reduced with daylighting strategies, LED lighting, automatic lighting controls, and occupancy sensors.
- **Water Use Reduction.** Our offices use low flow plumbing fixtures and are located within buildings that minimize water use for landscaping.
- **Waste Reduction.** Our goal is to reduce waste and associated carbon emissions in all office locations. Several offices use compostable products. Recycling is accessible throughout every office. Our firmwide purchasing program includes compostable cutlery, dishware, cups, and feminine hygiene product packaging. We provide filtered water in kitchens and have a preferred caterer program for companies offering compostable or recyclable packaging and dishware.
- **Wellness.** Our office locations offer enhanced air quality and pollutant control with HVAC system design and high-performance filters, material selections minimizing chemicals of concern, and walk-off mats at every entrance. In the midst of COVID-19, we felt confident in the safety of our offices, and now nine of our offices have WELL Health Safety Certifications, with the remainder underway in 2024. Additionally, our HR department facilitates annual wellness programs that support all dimensions of employee well-being: physical, intellectual, emotional, financial, and environmental.



CARBON NEUTRALITY AND A PATH TO NET ZERO

We aim to operate as a carbon neutral firm, looking beyond offsets to reducing **Scope 1, 2, and 3 emissions** in our operations with time-stamped goals. While we have good examples of sustainable leadership and policies, we knew we needed a focused roadmap to achieve carbon neutrality. This effort has been led by Alissa Kingsley, Sustainability Operations Leader, and Sarah Berseth, Director of Operations.

Working with the Minneapolis office director, we conducted a pre-pandemic carbon footprint analysis based in 2019 data, and extrapolated the results across all offices at that time to establish a baseline.

In 2022, we conducted our first firmwide carbon assessment, including data from all offices and estimating commuting based on employee address and our culture of hybrid work. The 2023 assessment refined this effort and included a survey for employee commuting habits. In early 2024, we achieved our goal of becoming carbon neutral by using third-party, verified carbon offsets, acknowledging carbon as an inherent cost of doing business.

Now we are working on a decarbonization strategy and a path to net zero emissions in our operations, which will include strategies around transportation, building and equipment efficiency, renewable energy, and purchasing. By 2030, we will have reduced our carbon emissions by 50 percent below the 2019 baseline, regardless of growth.

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For too long, carbon has been a hidden cost of doing business. With our pathway to net zero, we are changing the equation.



Alissa Kingsley, AIA, LEED AP
Sustainability Operations Leader

HGA'S 2023 CARBON FOOTPRINT

SCOPE 1:

DIRECT EMISSIONS

- Mobile Combustion 0%
- Refrigeration & AC 0.2%
- Stationary Combustion 7%

SCOPE 2:

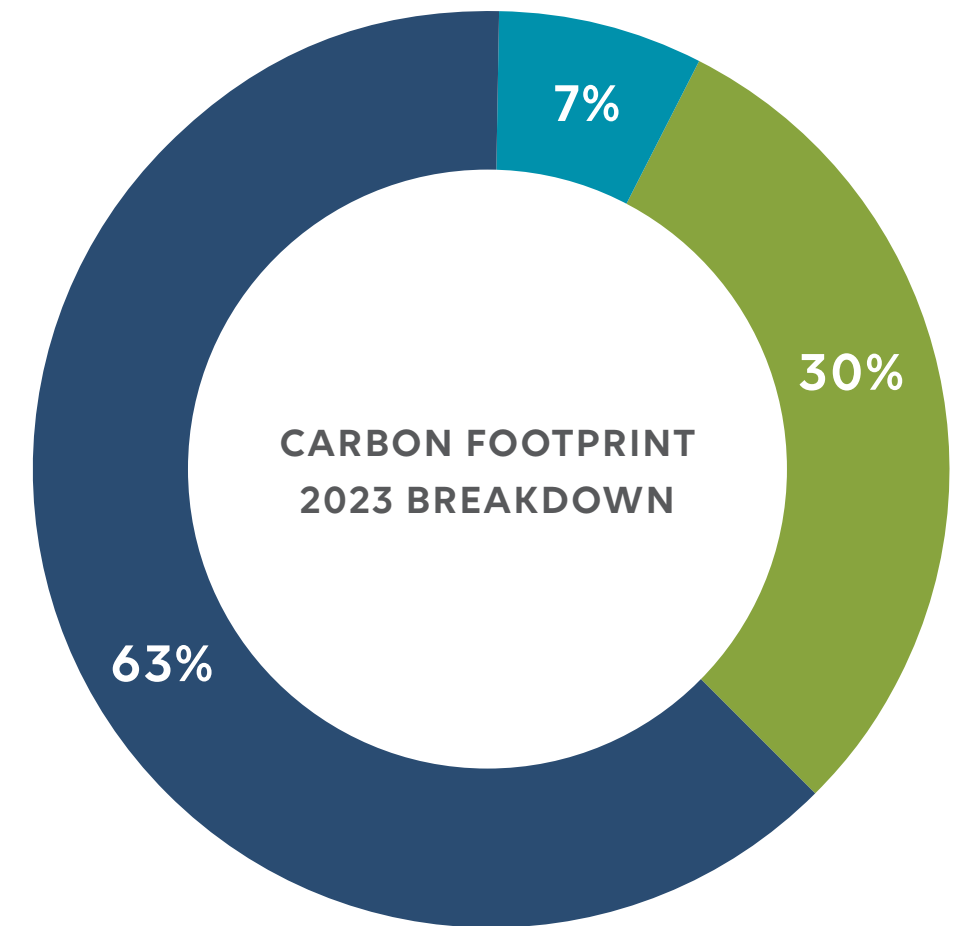
INDIRECT EMISSIONS

- Purchased Steam & Chilled Water 0%
- Purchased Electricity 30%

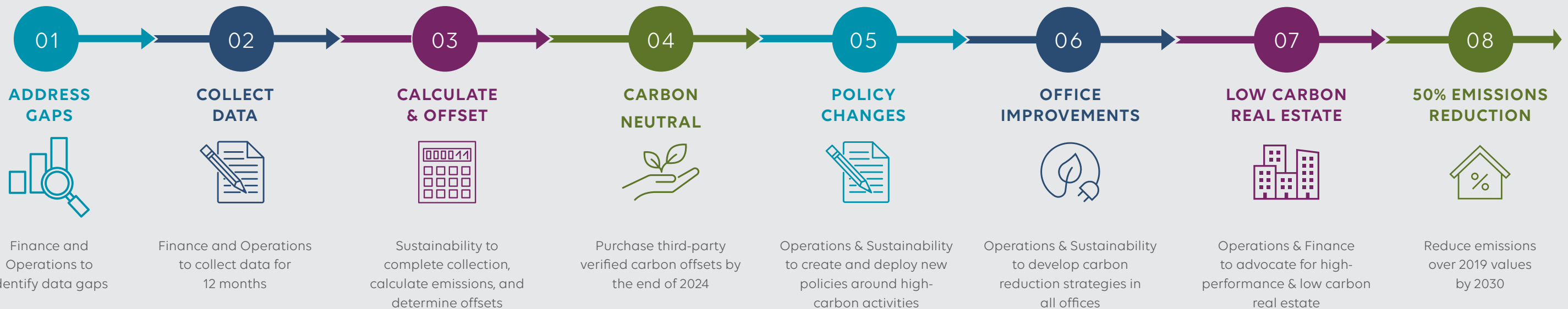
SCOPE 3:

TRAVEL & COMMUTE

- Business Travel 29%
- Employee Commute 34%



OUR PROCESS TO CREATE A NET ZERO PATHWAY FOR FIRM OPERATIONS





HGA Minneapolis

Just.

Organization Name: HGA
Organization Type: National Interdisciplinary Design Firm
Headquarters: N/A
Number of Employees: 1,085

Social Justice Indicators:

Diversity & Inclusion

- Gender Diversity
- Ethnic Diversity
- Inclusion
- Engagement

Employee Benefits

- Health Care
- Retirement Provision
- Family/Medical Leave
- Training/Education

Equity

- Full-Time Employment
- Pay-Scale Equity
- Freedom of Association
- Living Wage
- Gender Pay Equity

Stewardship

- Local Communities
- Volunteering
- Animal Welfare
- Charitable Giving
- Positive Products

Employee Health

- Physical Health
- Well-Being

Purchasing & Supply Chain

- Equitable Purchasing
- Supply Chain

THE SOCIAL JUSTICE LABEL 2.0

HGA-001

EXP. 08/01/2025

INTERNATIONAL LIVING FUTURE INSTITUTE™

WE ARE A JUST ORGANIZATION

Designed like a nutrition label by the International Living Future Institute (ILFI), the JUST label provides an objective perspective on how we are contributing to a more equitable and inclusive world.

Our strongest scores represent the benefits of focused equity efforts. Our lower scores show where we must improve to have a greater impact.

Insight gained from this process has informed goals and initiatives and updates to our firmwide strategic plan, helping us prioritize our focus while investing in areas we can improve. Publicly sharing our label allows our current and prospective employees, as well as clients, to see how we are living our values.

ESTABLISHING A BENCHMARK FOR EQUITY & ENGAGEMENT

How are we doing? How can we do better? In March 2023, 722 of 1,023 employees responded to a survey conducted by McLean & Company. Questions looked at common drivers of engagement as well as employee experiences, helping us understand what we are doing well and where we need to focus our efforts. Of the respondents:

80% say HGA supports an inclusive environment where individual differences are valued and respected

76% say they are comfortable being themselves at work

88% say their contributions are important to the success of their department



“A genuine understanding of equity is to recognize that it is not something to achieve; it is an ever-evolving commitment to see the world and consider every interaction through an equity lens.”

Terri Howard
 Director of Equity

06
OUR FUTURE



Rising to the Challenge

HGA is committed to making a positive impact through our work, and to take urgent, meaningful climate action. We aim to create sustainable, resilient spaces that are embraced by owners, users, operators, and the greater community - now and many generations into the future. A beloved building—one so treasured it lasts for generations—is beautiful and truly sustainable. This Sustainability Action Plan summarizes our commitments, strategies, and actions, and our annual Impact Report will report on progress. We will hold our industry accountable to these commitments and ask that our peers and clients do the same for us!

WE ARE ALL IN

Creating a sustainable, equitable world for all is a collective endeavor. Change at this scale requires public commitments, collaboration, and transparency. Our industry can evolve and transform the built environment to better address climate change and social inequities only if we challenge each other, demanding action and accountability. At HGA, we are all in.

