

Sustainability Action Plan

2030 Commitment





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our commitment

Philosophy and Approach

People are the focus of our work and at the center of our process. We believe that deep collaboration with clients, communities and colleagues is the best way to solve complex problems and create enduring architecture - people contribute to, as well as experience, the outcomes of our projects. Health and wellbeing is significantly impacted by both natural and man-made environments. Therefore, it is incumbent upon us as designers of the environment, to pursue comprehensive sustainable design wherever possible, and to work collaboratively with our clients to understand the long-term benefits of environmentally responsible design.

“People are the focus of our work and at the center of our process...”

Our Work, Our Impact

As a firm, we have committed to the goals and requirements of the AIA 2030 Challenge – to work toward carbon neutral construction by prioritizing the energy performance of our projects. This commitment will impact both what we design as well as our design processes. To meet the challenge, we will need to grow in our knowledge of the concepts of energy efficient design, become versed in the tools to analyze these efficiencies, and collaborate with clients and project partners in this effort. We look to achieve the goal in balance with embodied energy considerations.

A large percentage of our work seeks to refresh, revitalize, reuse or expand existing buildings. Smart use of built, as well as natural, resources is a key facet of sustainability and carbon impacts. We embrace the challenge of optimizing the use of these resources.

Our deep knowledge of regional mobility systems allows much of our work to support the optimization of public transportation through design, planning, and advocacy. Many of our projects also support and prioritize alternate modes of mobility that favor lower carbon impacts and/or easily accessible links to public transportation whenever possible. Our experience with regional transportation systems helps inform these design choices even in projects that are not transportation-oriented.

We create environments. Framed by our values, we endeavor to create places – building interiors as well as exterior spaces - that are built responsibly, healthy, and enduring.

challenges



Sustainable design literacy of studio



Client values and needs, knowledge of sustainable design



Project budgets, schedules & design fees



Project partners capabilities, especially mechanical engineering



Achieving energy efficiency with renovations

design + approach

energy modeling workflow

The design approach is not intended to be a linear process but an iterative one. By harnessing the power of energy modeling and Life Cycle Assessments we can make more informed design decisions throughout the process as we track our progress towards reducing greenhouse gas emissions.

1. Scope & Fee

In scope and fee development, account for Life Cycle Assessments & energy modeling. Time spent on energy modeling and/or LCAs which provides an added value to our clients and enables us to deliver a better project as a whole. These services will become an integral part of our process and should be accounted for when developing project proposals and associated fees.

2. Set Performance Goals

Work with stakeholders to establish performance & sustainable design goals and guide in selecting appropriate benchmarks for the project typology. These goals and the benchmark will be recorded along with conditions for success and shared among the stakeholders and project team for continued reference.

3. Integrated Design Process

Successful energy modeling requires an integrated design process. We will collaborate early and often with stakeholders and consultants to find the most suitable mix of design strategies and active systems to meet the performance goals established at the outset of each project.

4. Site Analysis

Site Climate analysis will be performed in order to identify passive strategies appropriate for the region. (Software Example: Climate Consultant)

5. Iterative Energy Modeling Passive Design Strategies

In the early stages of design, energy-reduction strategies and program requirements will be tested and balanced in-house using energy modeling software (Examples: Autodesk Insight, Cove Tool). Passive design strategies will be utilized whenever possible in order to maximize efficiency and minimize design loads.

6. Operational Energy Vs Embodied Energy

As projects moves into design development, whole building energy models will be developed with energy modeling and MEP consultants. These models will be used to inform building systems selection and further hone passive strategies.

Additionally, the embodied energy and life cycle cost analyses will inform the selection of materials and systems. (Software example: Tally)

This two-pronged approach will enable our firm to take a holistic look at the project design in order to understand the impacts that operational energy savings may have on embodied energy and visa versa.

7. Internal Review - QA/QC

A sustainability review will be incorporated as part of the internal QA/QC process

8. Post Occupancy Assessment

Post occupancy assessment protocols will be developed in order to collect insight into project execution as well as potential future improvement upon completion. Whenever possible, data will be collected in order to compare the predicted Energy Use Intensity (pEUI) vs actual Energy Use Intensity (EUI.)

evaluation + reporting

Reporting

Annual reporting of the project portfolio is at the heart of FM's 2030 commitment, as what is measured is what can be improved. While FM's approach to sustainable design is a holistic one, our statistical reporting will focus on two measures of sustainability and energy performance:

1. predicted energy use intensity (pEUI) reported through AIA 2030 DDx, and
2. embodied energy carbon of the project over its lifetime determined through a comprehensive life cycle analysis (LCA).

We intend the process of tracking sustainability measures to be an integrated, iterative process, moving away from compliance models and towards harnessing the power of energy modeling tools and consultant collaboration to positively influence energy performance during project design. This iterative process necessarily invites more *'moving parts'* into the project workflow.

To manage this, each project team at FM will appoint a sustainability coordinator who will direct the sustainability-related metrics of the project as well as communicate progress to the office's sustainability committee at regular intervals. Defining and reaching sustainability goals is a team effort, and so it is intended that the sustainability coordinator acts more as a point person, encouraging each team member to take ownership of the design thinking and project tasks critical to the achievement of the project's stated sustainability goals.

In order to better support each sustainability coordinator and the studio as a whole, members of the sustainability committee will be assigned to specific focus groups. These focus groups will help to cultivate *"reporting experts"* for each major project type within our firm's portfolio.

At the inception of each project, project teams will collectively determine a target pEUI (or LPD for interior only projects) that will be used in reporting to the 2030 DDx database. It is encouraged that discussion of pEUI be extended to the client, whose design choices and post-occupancy behavioral patterns are perhaps the largest factors affecting a project's energy performance and consumption.

In order to streamline our reporting efforts for 2019, the sustainability committee will begin reaching out to individual project teams to gather reporting data starting in January of 2020. This information will be entered into a master spreadsheet in order to use the "batch upload" feature, importing our firm's entire portfolio into the 2030 DDx. The intent is to then transition to a more decentralized and integrated approach to reporting, by shifting the responsibility to each team's sustainability coordinators who can then begin to track performance throughout the design process.

Reporting will ideally occur at the end of each project phase (SD, DD, CDs, and Closeout) as schedule allows. FM's 2030 DDx reporting can be broken down into short and long-term goals as follows:

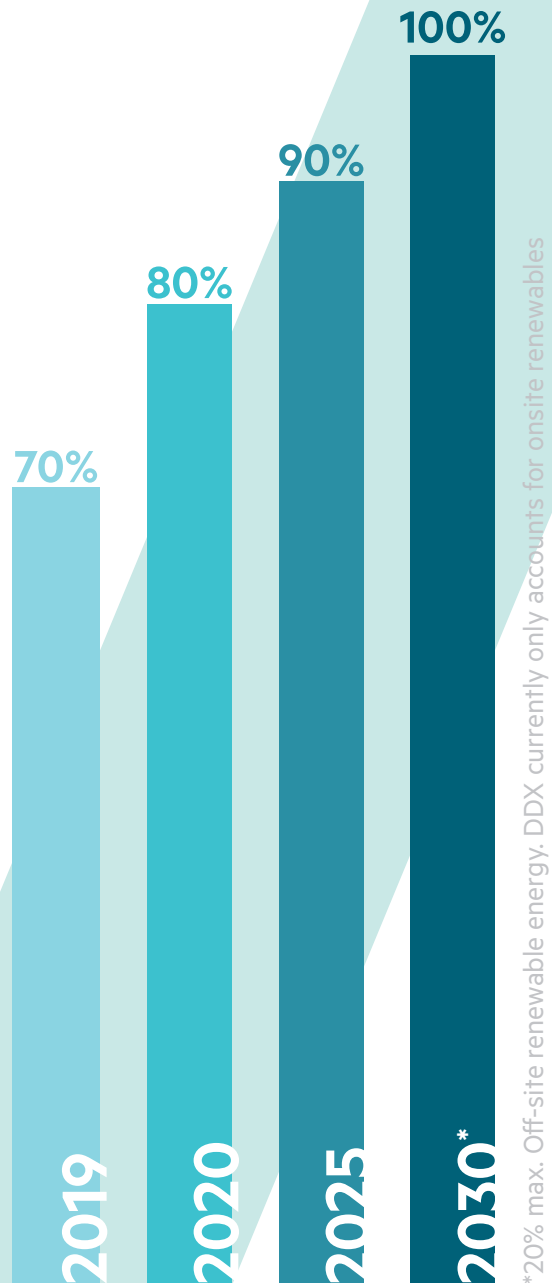
Short Term

- Report entire office portfolio for next reporting period (due end of March 2020)

Long Term

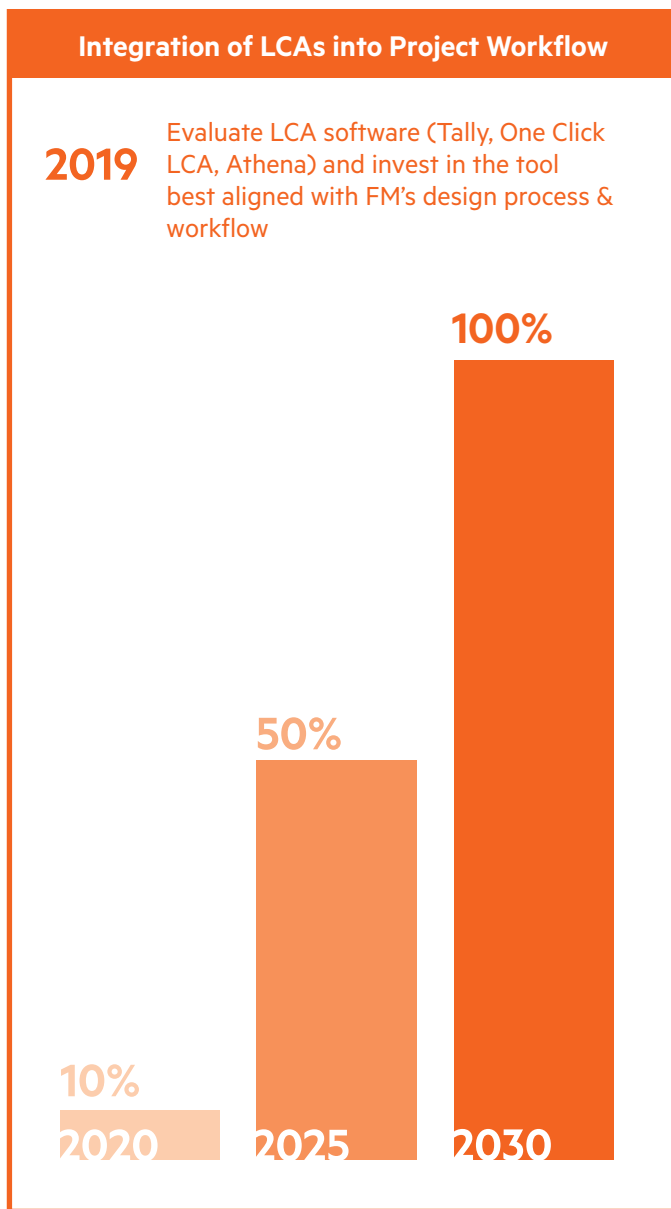
- Collect actual project performance (EUI) based on commissioning data to compare to PEUI portfolio data
- Incorporate pre/post occupancy comfort surveys on appropriate projects to inform design and evaluate level of success achieved

FM's goal-setting will follow the standard 2030 Challenge targets in baseline EUI reduction:



Evaluation

Reducing and eventually eliminating the operational carbon of our buildings is critical, however is equally important that we lay out a framework for reducing embodied carbon alongside this effort. FM's integration of LCAs into project workflow will track alongside the 2030 reporting process as we learn to conduct and evaluate LCAs. This process can again be broken into incremental goals:



LCAs should be incorporated when applicable, on a case by case basis, at various stages of a project. In the early stages during schematic design, LCAs can be used to evaluate major structural systems and the impact this has on total embodied carbon. As the project moves into design development LCAs can help inform envelope studies and provide façade comparisons. Whole building LCAs can then be used to identify the top 10 material impacts on any given project.

Once these categories have been identified, project teams can develop strategies to reduce or optimize these materials. For example, if the design team has a project that requires a concrete structure, and reducing the total volume of concrete used is not an option, then teams should focus on strategies to optimize the concrete mix in order to minimize the embodied carbon footprint and subsequent global warming potential of that material.

When embarking on a whole building LCA, teams should establish which method will be used to determine a baseline, in order to set a reduction goal and track improvements relative to that baseline. As we begin to incorporate more LCAs into our design process we will build a database of information by project type, eventually creating our own benchmarks for tracking improvement and setting embodied carbon reduction goals for the future.

Following the submission of the annual DDx reporting at the end of March, FM's sustainability committee will analyze the data and prepare an annual report discussing the firm's progress towards its sustainability goals. The report will seek to discover how FM's performance sizes up to its regional and national peers through the comparative analysis of the AIA and BSA annual 2030 reports, published each Fall. The annual report will be launched each year at a reserved Forum date where the firm as a whole can come together to celebrate successes and discuss opportunities for insight and improvement.

outreach + advocacy

FM Transportation Advocacy

FM's comprehensive knowledge of regional transportation systems enables us to think about ways to incorporate sustainable modes of transportation into all of our projects. We actively work with clients to identify and support opportunities for walkable, bikeable, and public transit connections whenever and however possible.

We also advocate for sustainable forms of transportation through sponsorships with organizations that include *WalkBoston*, whose mission focuses on creating more walkable communities across the state, and mentoring the *Girls Science Club of Cambridge*, leading the next generation of designers through transportation charrettes.

Collaborating with Clients and Partners

Bearing return on investment in mind, a crucial element of the client decision-making process, FM will leverage building performance data, post-occupancy evaluations, and other related metrics to empower the client to make sustainably-conscious decisions aligned with their business interests, whether that be related to building systems, materials, emissions reductions, and beyond.

We recognize that no single firm will significantly alter the design landscape enough to meet the goals of the 2030 Commitment. In addition to our own efforts, we will engage with like-minded firms to leverage the collective knowledge of the entire design community, building a stronger and more unified voice to more effectively execute on our larger sustainable design goals. This will manifest in how FM builds its project teams, as we will partner with engineers, designers, and consultants who are both committed to and actively participating in the 2030 Commitment. FM will also continue to maintain its presence in the sustainable design conversation, continuing our involvement with organizations that are well-aligned with our sustainability goals such as the AIA and BSA.



The goal of the Logan Rental Car Center was to reduce traffic and emissions around the airport. The project features 610 solar panels on the roof for generating electricity, and has achieved LEED Gold certification for sustainability and energy efficiency.



Groundbreaking of YWCA of Central Massachusetts



Volunteering at Somerville's *South Street Farm*.

Volunteer Work

FM also performs volunteer work annually, often with a sustainability focus. Recent volunteer work has included crop harvesting at Somerville's South Street Farm.

FM has performed pro-bono design work for GroundWorks Somerville, an organization that is committed to “changing places and changing lives” through programs that address areas of healthy education, green jobs and sustainable communities.

Our design work supported the organization's mission with components that included bike storage for the Green Team, as well as a multi-functional shade canopy for 25-30 people. The structure is designed to serve as a teaching space for community workshops and presentations, a break area for those working at the farm, and a gathering space for community events. The canopy's roof is also a rainwater catchment system for crop irrigation, visibly demonstrating the organization's commitment to sustainable environments.

training + education

FM promotes and supports the professional development of all staff. To that end, FM intends to develop and implement the following programs:

Knowledge Sharing

In-house lunchtime educational seminars (L&L). FM seeks to increase the frequency of those seminars that support its 2030 Challenge and sustainability objectives. These will focus on sustainable building practices and green building materials with a preference towards AIA/CBCI accredited sessions. This seminar program will be open to all staff and registration for continuing education credits will be provided. Scheduling will be based on the availability of firm resources and product/ manufacturer rep interest. Additionally, FM's Sustainability Committee will proactively identify and invite local industry experts to present to staff during these lunchtime seminars.

The firm hosts AIA developed in-house lunchtime webinar program to share sustainability knowledge. This program will be open to all interested staff.

Professional Accreditation

We are actively working to set targets for employee certification in the near and short term. FM encourages staff to pursue professional certification that support its goals and commitment to sustainability. The firm will reimburse staff for expenses related to LEED, WELL certification, and ENVISION. At the time of drafting this report, 20% of FM's staff held some level of LEED accreditation.

FM will identify and make study material available to those staff pursuing accreditation.

Other Professional Opportunities

The firm encourages staff to seek out and attend industry educational events related to its sustainability objectives. FM sponsors staff attendance as funding is available. Such events include,

- ABX (Architecture Boston Expo) symposia
- Greenbuild International Conference and Expo, and
- NeoCon
- Boston Society of Architects/AIA seminars

Attending staff is asked to share relevant material with the office during a Forum or lunchtime learning session. FM will identify potential local opportunities on a monthly basis and make office announcements.

FM encourages and supports staff to engage in volunteer activities outside of the office. Staff are encouraged to invite other staff to join these activities through the interoffice messaging platform. Additionally, the firm intends to seek out volunteering opportunities that support the sustainability goals of the community and organize at least one charity-focused office event each calendar year.

Technology + Software

The firm is researching energy modeling software and other sustainability-focused tools in an effort to strategize how such tools can be incorporated into the firm's workflow based on project needs.

Training sessions will be made available to those individuals interested through the firm's biweekly Toolbox Lunch Session program. All FM staff have access to the LinkedIn Learning platform in order to further develop software skillsets.

Other Studio Resources

FM will continue to develop its internal resources to better equip its staff to design sustainably innovative and responsible architecture. The firm aims to develop its material library and project specifications with a focus on green materials and sustainable building practices.

The use of digital green material databases like Cradle to Cradle and Mindful Materials will help staff better evaluate materials based on their sustainability attributes like embodied carbon, life cycle assessment, and chemical composition.

operations

As a firm we acknowledge the importance of maintaining the health and well being of our greatest asset: our employees. Our design philosophy centers upon creating environments that serve people and support their overall well-being; in order to stay true to these values it is our responsibility to apply these same standards to our own work environment. As the firm has continued to grow in size, we have placed an emphasis on maintaining an egalitarian and collaborative atmosphere which is evidenced by our open plan office layout and workplace culture.

In an effort to evaluate our own performance, and opportunities for a healthier and more enjoyable workplace, we have considered our operations through the lens of the WELL Building Standard. We have outlined our operations to include currently active practices, as well as aspirational goals. Our operations are organized based on specific categories addressing particular areas of concern of how people interact with their environment on a day-to-day basis. This multifaceted approach will help us develop and maintain a critical accountability to, and foster continuous improvement and development for environmental and personal health and longevity.

Air

“Aims to ensure high levels of indoor air quality across a building’s lifetime through diverse strategies that include source elimination or reduction, active and passive building design and operation strategies and human behavior interventions.”

International Well Building Institute (IWBI)

- Active: Ensure adequate mechanical ventilation for all spaces, provide a smoke-free indoor environment
- Aspirational: Upon renewal or execution of a new lease perform indoor air quality testing & take reasonable action. Promote air quality awareness by sharing air quality test data.

Water

“Covers aspects of the quality, distribution and control of liquid water in a building. It includes features that address the availability and contaminant thresholds of drinking water, as well as features targeting the management of water to avoid damage to building materials and environmental conditions.”- IWBI

- Active: Ensured filtered, good tasting drinking water, no bottled water at office functions
- Aspirational: Test and display water quality

Nourishment

“concept requires the availability of fruits and vegetables and nutritional transparency and encourages the creation of food environments where the healthiest choice is the easiest choice.” - IWBI

- Active: Fruit and vegetable visibility-- Administration provides fresh snacks during the week, and healthy options during office events; Limitation of sugary treats at reception/common areas; Allergies and lifestyle dietary restrictions are acknowledged and accommodated; flexible meeting space reserved for lunch hour; encourage use of outdoor space (i.e. the Tontine Crescent) as feasible; our office is located within .5 mi walk distance of a grocery store w/ produce section; food preparation is supported by our kitchen space and amenities
Aspirational: Provide nutritional education; Promote healthy nutritional messaging; Encouragement to break for lunch

Light

“promotes exposure to light and aims to create lighting environments that are optimal for visual, mental and biological health.” - IWBI

- Active: Large windows ensure enhanced access to natural light; Shades provided to be able to manage light levels
- Aspirational: Study regarding color rendering in office

Thermal Comfort

“concept aims to promote human productivity and ensure a maximum level of thermal comfort among all building users through improved HVAC system design and control and by meeting individual thermal preferences.” - IWBI

- Active: Adjustable zone thermostat control

Movement

“concept promotes movement, physical activity and active living and discourages sedentary behaviors through environmental design strategies, programs and policies.” - IWBI

- Active: Seat flexibility/adjustability; Standing desk support; Walk Slack channel established, to encourage group physical activity; Health insurance provides discount for gym membership; Office site selection accommodates mass transit users, pedestrians, and cyclists
- Aspirational: Provide ergonomics education and ergonomic consultation; Provide better bicycle storage; Provide more activity-focused events; Discuss potential of light activity equipment

Sound

“concept aims to bolster occupant health and well-being through the identification and mitigation of acoustical comfort parameters that shape occupant experiences in the built environment.”- IWBI

- Active: Be mindful of background noise; Community music volume and genre selection available for adjustment to all individuals in the office
- Aspirational: Noise-abatement solutions in open-air meeting space & our primary conference rooms



Large windows ensure enhanced natural light



Annual softball tournament



Materials

“concept aims to reduce human exposure to hazardous building material ingredients through the restriction or elimination of compounds or products known to be toxic and the promotion of safer replacements. Compounds known to be hazardous to the health of occupational workers and/or known to bioaccumulate or aggregate in the environment are also restricted and in some instances not permitted.”

- Active: Office products bought in bulk; Green soaps & cleaning products purchased; Reusable soap dispensers; Single-stream recycling available; Concerted effort to return/recycle architectural samples
- Aspirational: Better recycling signage; Environmentally aware purchasing plan for office supplies

Mind

“concept promotes mental health through policy, program and design strategies that seek to address the diverse factors that influence cognitive and emotional well-being.” IWBI

- Active: “Mini Room” and “Brick Room” conference spaces available to schedule for personal use; Encourage staff to use health insurance provided Employee Assistance Program
- Aspirations: Mental health awareness promotion & literacy; Stress management plan and activities

Community

“concept aims to support access to essential healthcare, workplace health promotion and accommodations for new parents while establishing an inclusive, integrated community through social equity, civic engagement and accessible design.” IWBI

- Active: Activities Committee promoting office culture & cohesion; Parental leave & new parent support; Breastfeeding accommodation; Bereavement support; Family leave
- Aspirational: Seasonal flu prevention; Promote health benefits; Promote health and wellness education



Transportation

In lieu of the WELL innovation concept we have included our own concept based on transportation, as this is a large focus of the work that we do and impacts how we operate as a firm. Our office location was strategically selected to support alternate modes of transportation options for commuting.

- Active: Flex spending accounts allow employees to purchase T-passes with pre-tax dollars. See graphic illustrating the various modes of travel used to commute to and from the office.
- Aspirational: Carbon off-set awareness

