Wight & Company  
MEP 2040 Embodied Carbon Action Plan (ECAP)

Wight & Company’s award-winning MEP design team is well-versed in zero energy buildings and ready to expand our sphere of influence by addressing the impact of refrigerants and embodied carbon in MEP systems. The Adlai E Stevenson High School East Building Addition team (pictured above) won the ASHRAE Technology Award in 2022.

Wight & Company is an integrated delivery firm comprised of design and construction professionals and has offices in Darien, IL, Chicago, IL, and Denver, CO. As an industry leader in sustainable design and radical energy efficiency, we support the vision that our staff must become well-versed in reducing the carbon impact of our projects – both from operational energy as well as embodied carbon.

Having reached many sustainability milestones including the first LEED certified project in the world, multiple PHIUS+ Source Zero and ILFI Zero Energy projects, and the first verified net zero energy building in Illinois, the natural progression of our practice is to take a proactive and intentional approach to reducing the embodied carbon in our projects. As an integrated design and delivery firm, we are uniquely positioned to address embodied carbon through both design and construction specifications and processes. Wight & Company is a long-time signatory to Architecture 2030, signatory to SE 2050, and now a signatory to MEP 2040.
By adopting this the MEP 2040 commitment, Wight & Company will commit to:

1. **ESTABLISH** a company plan to reduce operational and embodied carbon across MEP systems on all projects, targeting zero by 2040. 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 a quarterly MEP 2040 Forum and a CLF Community discussion group to share lessons learned and contribute to a growing body of knowledge.

Our company's embodied carbon action plan will evolve and continuously integrate with other disciplines as we work towards eliminating negative impacts of carbon from our projects. As such, some of the items here follow the structure of and dovetail with the SE 2050 plan that our structural team created and published. We believe that an integrated approach to reducing carbon will be more effective than siloed disciplines. Our approach capitalizes on teaching and learning opportunities across the company and sets the stage for integration of additional disciplines including civil and landscape design.

Wight & Company has nominated Bradley McClain, PE, MEP Senior Project Manager to act as the firm’s MEP 2040 Champion. As one of the leaders in our engineering department, Brad is running point on efficient design, embodied carbon, and refrigerants in our MEP design practice and participates in Wight’s firmwide multi-discipline embodied carbon team. He is supported by John Mlade, Director of Sustainable & Healthy Environments.

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Wight’s MEP Approach to Embodied Carbon Reduction:

1. Education - Understanding the problem and our role in a solution
   a. Wight & Company has made public our commitment to MEP 2040 through social media posts and internal communications. We regularly share information to reinforce our MEP 2040 pledge with staff using multiple mediums and touchpoints including email, announcements, and in-office posters. The 2040 Embodied Carbon Action Plan was distributed to our MEP engineering team.
   b. Education of staff is an important element of our commitment to sustainability, carbon reduction, and refrigerant selection. We host regular opportunities for staff to learn about sustainability, with carbon reductions being a major driver. Trainings include internal topical and project presentations, tours of projects, speaker series presentations, and 3rd party vendor lunch n’ learns. A sustainability training calendar is maintained by the sustainability team and includes training on embodied carbon, LCA tools, and equipment selection. A sample of learning opportunities in June 2022 include:
      i. June 7th – Trane (vendor) presented on embodied carbon of mechanical systems, refrigerants, and electrification of buildings
      ii. June 10th – Wight Embodied Carbon team presentation non biogenic carbon
      iii. June 13th – MEP team meeting reviewed and discussed the Wight MEP 2040 ECAP
      iv. June 22nd – Wight hosted an internal training entitled “EPDs: How to find, read, and calculate embodied carbon from EPD data”
   c. Wight & Company is committed to reducing carbon in our buildings and meeting our commitment to MEP 2040 to the greatest extent possible. Reflective of our commitment to MEP 2040 is our commitment to the following action items. We anticipate completing each of the items below on an annual basis and intend to maintain momentum moving forward.
      • We will ensure a minimum of 1 staff member is engaged with Carbon Leadership Forum (CLF) for quarterly education programs within the first year of our commitment, and that our staff is also participating in the CLF Community Hub.
• Wight & Company will participate in quarterly MEP 2040 Forum discussions and CLF Community discussion groups to learn from others and share lessons we’ve learned.
• Associated resources will be shared amongst the MEP team and collaborating team members from other disciplines.
• Our Embodied Carbon team, including engineering representatives from MEP, structural, land development and transportation departments, meets every other Friday to share new learnings, resources, and project updates.
• Our teams currently utilize OneClick LCA, EC3, and manual spreadsheet calculators to quantify embodied carbon. We have also participated in demos of other tools including Tally and Covetool and will continue to track tool development to use the most fitting tools for our practice.

2. Reporting Progress - Measuring to Manage
   a. As long-time signatories of AIA 2030, Wight & Company has been reporting predicted energy consumption of projects on an annual basis. The AIA 2030 is now also requiring that we collect embodied carbon values. We are in a unique position to report to AIA 2030, SE 2050, and now MEP 2040. The MEP 2040 reporting will dovetail into our regular AIA 2030 energy reporting for projects.
   b. Internal training for embodied carbon measurements include the following:
      • Training on One-Click LCA, our current firm software, is provided by One-Click on an annual basis and additional support is provided through staff collaboration.
      • Covetool Embodied Carbon module training was provided Q3 2021 and will be revisited periodically.
   c. Embodied carbon reporting for MEP projects will begin with quantifying refrigerant impact and accounting for static portions of equipment (pipes, ducts, etc.). Mechanical equipment (chillers, pumps, etc.) will be reported as data becomes available in the industry.
   d. Data collection is a key piece of reporting. Our specifications currently ask for all project partners, subcontractors and vendors provide product specific environmental and health documentation, including EPDs. We are connecting with and encouraging local materials suppliers to align with industry needs and develop associated documentation to provide to customers.
Pictured above is the submittal cover form used by Wight to solicit environmental and health data for all products used on our projects (top), as well as a closer look at specific fields of data requested (bottom).
3. Embodied Carbon Reduction Strategies - Making a plan to implement
   a. All of our projects meet the Wight Sustainability Standard that requires the establishment of a PEUI and baseline level efficiency improvements. Following our in-house standard, Wight considers and implements practices in design and construction that are beyond industry standards. The 2022 update will include embodied carbon measures for all projects.

   The Wight Sustainability Standard has been in use for over 10 years and is regularly updated by each discipline at Wight.

   b. We will review and update our design standards, specifications, and typical details to include “directional reductions” in our base project specifications including the use of low-GWP refrigerants.

   c. As more EPD information is available, we will include information on embodied carbon in our specifications for both static materials and MEP equipment.
4. Advocacy - Building a culture to bring change to the AEC industry
   
a. In addition to committing to MEP 2040, Wight will also report embodied carbon to SE 2050 and AIA 2030 for applicable projects. Our team, apart from sharing information, is a participant in the Chicago Decarbonization Working Group, Chicago Building Decarb Advocacy Group, and also the GSA Decarbonization Working Group. Our work with local and national organizations will help us leverage influence for smart decarbonization policies.

b. As our MEP engineering team becomes more fluent in embodied carbon reduction measures, we will expand the Wight Embodied Carbon team to also include additional engineers, architects, interior designers, and other disciplines. Wight & Company is uniquely positioned to address carbon from all disciplines and in all stages of design and construction.

c. We will educate partner design and construction firms on how to reduce embodied carbon in buildings and our clients on the value of reducing embodied carbon in addition to operational carbon.

d. Wight & Company will include a declaration of our commitment to MEP 2040 on associated MEP engineering proposals.

e. When speaking to clients, the conversation is more fully about sustainable and healthy design. As an integrated firm, our engineers are able to support the MEP 2040 banner as it closely relates to other sustainability commitments our firm has made including SE 2050, Architecture 2030 and the AIA Materials Commitment.

f. The success of carbon reductions in projects is celebrated in our marketing material, although we are careful not to greenwash our progress. This is a work in progress and we hope to have a clear message to more effectively market this aspect of sustainable design in the coming year. Wight & Company has already designed multiple Net Zero Energy projects and all-electric buildings.
The Adlai E. Stevenson High School EBA I Science Addition (top left) was the first verified Zero Energy building in Illinois and also achieve LEED Platinum and LAPT Platinum certifications. The Northbrook Park District’s Techny Prairie Activity Center (top right) was the third verified Zero Energy building in Illinois and also PHIUS + Source Zero. The Plainfield Park District’s Prairie Activity and Recreation Center – PARC (bottom left), Adlai E. Stevenson High School EBA II Fieldhouse (bottom center), and the Forest Preserve District of DuPage County Willowbrook Wildlife Center (bottom right) are all designed for Zero Energy and are either in construction or in the performance period to demonstrate performance. Of these projects, both EBA I Science Addition and Willowbrook Wildlife Center are fully electric.