2030 BY THE NUMBERS

The 2020 summary of
the AIA 2030 Commitment

ABOUT THE AMERICAN INSTITUTE OF ARCHITECTS

Founded in 1857, AIA consistently works to create more valuable, healthy, secure, and sustainable buildings, neighborhoods, and communities. Through more than 200 international, state, and local chapters, AIA advocates for public policies that promote economic vitality and public wellbeing.

AIA provides members with tools and resources to assist them in their careers and business as well as engaging civic and government leaders and the public to find solutions to pressing issues facing our communities, institutions, nation, and world. Members adhere to a code of ethics and conduct to ensure the highest professional standards.

ABOUT THIS REPORT

2030 By the Numbers: The 2020 Summary of the AIA 2030 Commitment measures annual performance of the architecture and design community toward its goal of carbon neutral buildings by 2030. It includes data from calendar year 2020 and suggestions for improving performance year to year.

This analysis highlights project-level information pulled on October 25, 2021 for projects included in RY2020 portfolio submissions. Consistent with previously published 2030 By the Numbers reports, pEUI reduction data is adjusted to use whichever pEUI reduction is higher: reported energy model or code equivalent. Analysis is completed using this adjusted data.

This approach is intended to incentivize energy modeling, as explored in Section 1 of this report, especially in instances where opting to use an estimate based on code would result in a larger pEUI reduction. Among other instances, modeling may reveal a lower pEUI reduction because it accounts for project-specific variables compared to the code estimates which are generalized and based on averages. The 2030 Commitment is evaluating if and how data adjustment should take place in future reporting years and welcomes your feedback via 2030commitment@aia.org.

Cover photo by Nic LeHoux.

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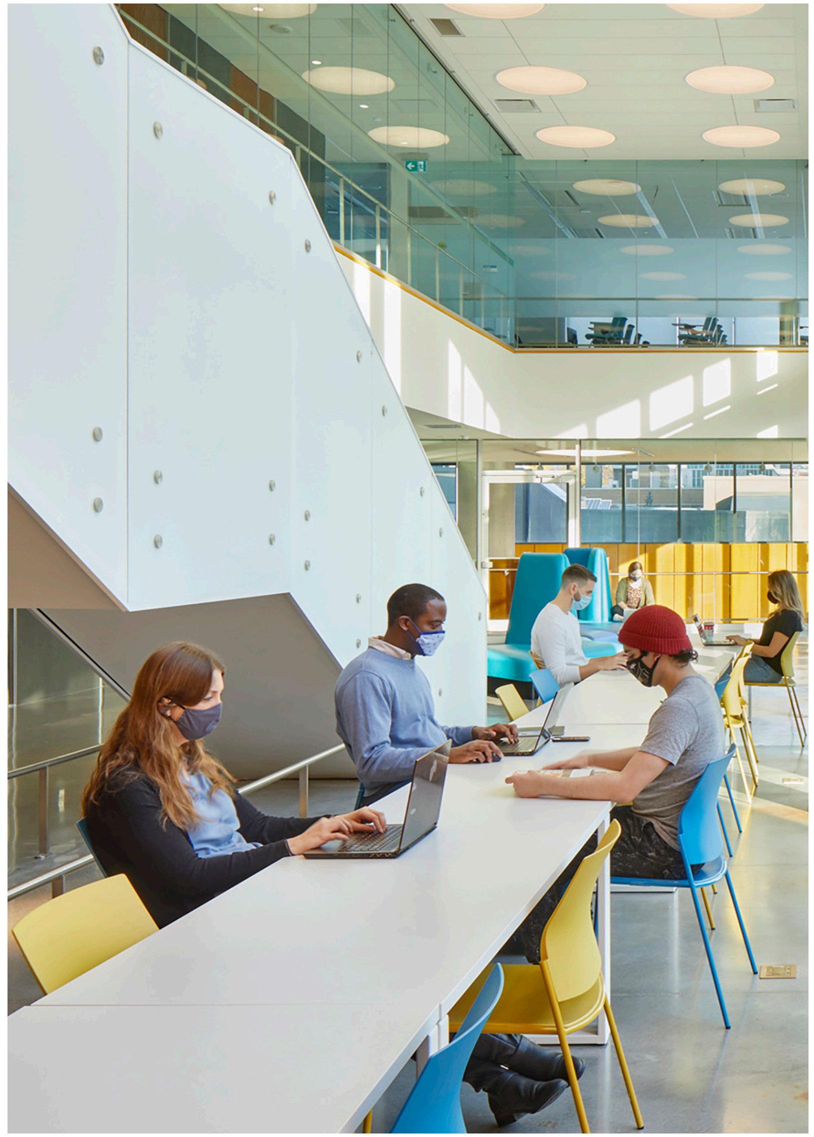
INTRODUCTION

2020 WAS A YEAR

Many people associate last year with professional turmoil, social chaos, and a pandemic whose staggering death toll has touched every one of us. Just saying "2020" can be enough to raise a shudder.

But there's another way to look at 2020—as a time of evolving firm culture, of social awakening, and of building our strength and resilience as a profession and as a nation.



Photos (clockwise from left): Tom Arban, Zoe Vandewater on Unsplash, and Adrià Crehuet Cano on Unsplash

INTRODUCTION

THE PANDEMIC

COVID-19 has caused widespread disruption of the building industry. Designs went on hold. Construction sites shut down. Increases in ventilation increased operating energy in many buildings. Yet we responded with unprecedented innovations and reset our priorities.

- Vacant downtown buildings created new opportunities for adaptive reuse, a huge untapped market for architects that has the potential to revitalize existing neighborhoods and reduce the carbon footprint of projects.

- Project types shifted. The entire hospitality sector was put on the back burner, while some types of health care construction accelerated—a benefit for many underserved communities. Master planning exploded, and sustainability action plans within firms saw a steep uptick, which is good news for setting the right long-term priorities.

- We transformed how we work—which means we transformed how architecture itself works. Despite "Zoom fatigue," we found new ways to collaborate, including with "anytime feedback" that acted as a virtual water cooler for synchronizing through informal connections.

THE RACIAL JUSTICE MOVEMENT

High-profile police brutality against Black citizens, and the resulting protests, alerted many white people to systemic racism against Black, Indigenous, and people of color. This is a critical issue many white people had long ignored.

- Architects and firms started to think more about inequitable access to policy makers, developers, and building professionals—and started to ask themselves how they could facilitate inclusion without getting in the way.

- There is now greater awareness among white people of the unjust environmental burdens suffered by frontline populations due to historical injustices like redlining. Moving forward, we are looking for ways to heal these wounds at a meaningful scale.

- A heightened focus on social equity and the quest for justice has shaken our traditionally white profession to its core. It has challenged us to learn how to strive for justice within our firms, in our projects, and within the communities we serve.

THE POLITICAL LANDSCAPE

At the end of 2020, the country elected a new administration. Among other priorities, President Biden and Vice President Harris have committed to sustainable infrastructure upgrades and to integrating cross-departmental environmental justice initiatives. And they are beginning to follow through.

- In recognition of the critical role that buildings play in climate change mitigation and adaptation, the administration has named building industry professionals to its White House Council on Environmental Quality and to other positions.

- The U.S. General Services Administration has doubled down on its commitment to high-performance buildings by setting new goals for embodied carbon and net-zero energy.

- The U.S. Department of Energy is funding several programs designed to jumpstart higher performance with workforce development and new technologies.

- Many states and municipalities are enacting gas bans for new construction as well as performance standards for existing buildings.

Photo by Benjamin Benschneider

THE 2030 COMMITMENT

In light of all this growth and potential, the AIA 2030 Commitment is supporting—and pushing—transformation. Among other changes, we've renewed and revamped the cloud-based Design Data Exchange reporting tool (DDx) to help our profession meet the moment.

2020 AT A GLANCE

51.3%
overall pEUI reduction.

378
companies reported data.

15
companies met the 80% predicted EUI (pEUI) reduction target.

22,002
projects reported.

292
whole-building projects are predicted to be zero net energy.

4.3%
of reported whole-building GSF meets the 80% pEUI reduction target.

54%
of reported interior-only GSF meets the 25% predicted lighting power density (pLPD) reduction target.

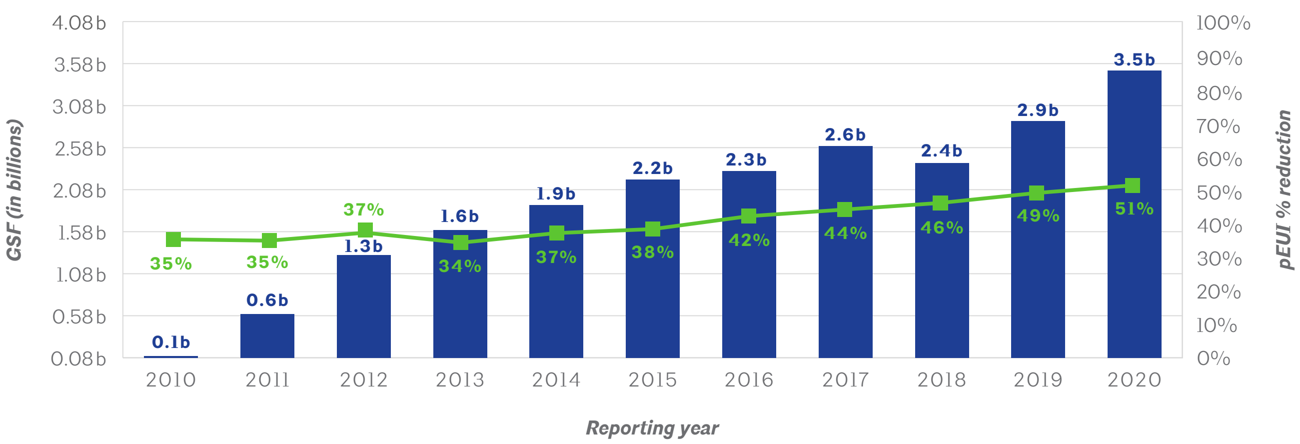
102
countries represented.

77.4%
of reported whole-building GSF has been energy modeled.

34.6 million
metric tons of CO_2 emissions were avoided relative to 2030 baseline-equivalent buildings.

Photo by Sandro Gonzalez on Unsplash

WHOLE-BUILDING GSF & pEUI % REDUCTION BY YEAR, 2010–2020

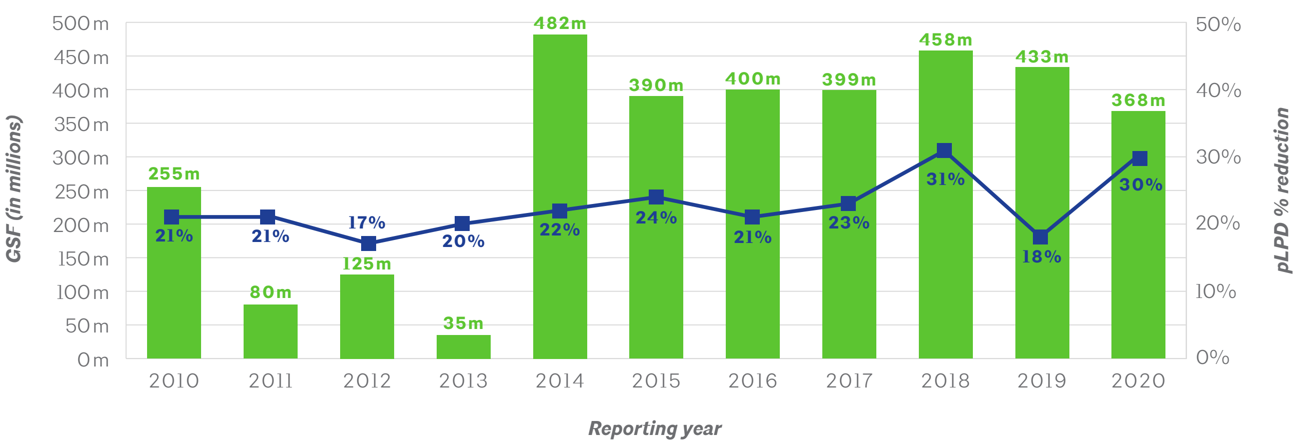


Whole-building GSF

pEUI % reduction

With 3.5 billion gross square feet of space accounted for—a record—the predicted EUI reduction was a full 51% compared with the 2030 Commitment baseline.

INTERIOR-ONLY GSF & pLPD % REDUCTION BY YEAR, 2010-2020



Interior-only GSF

LPD

For interior-only projects, predicted lighting power density in 2020 was 30% below baseline—a big jump from 2019.

OUR PATHS FORWARD

Carbon-neutral building performance has been the ambitious target of the 2030 Commitment from day one, but it's been framed in terms of energy performance exclusively until now. In 2020, we took measures to help ensure we're focusing not just on energy but also more broadly on buildings' life cycle of greenhouse gas emissions.

In 2020, 378 companies reported 3.8 billion square feet across 102 countries via the DDx. These projects accounted for an overall 51.3% predicted energy use intensity (pEUI) reduction among whole buildings and a 30% predicted lighting power density (pLPD) reduction among interior-only projects.

Although pEUI remains the primary metric, we've also updated the DDx to include more optional metrics to track, including embodied carbon and a pathway to record fuel-source data.

Photo by Alan Karchmer/OTTO

Many universities and Fortune 500 companies have already made their own climate commitments and are asking for low- or no-carbon operations. This is happening in response to both climate risks and the increasing financial risks of investing in fossil energy. Their leadership has started a movement. The question is, do we as a profession have the knowledge and resolve it takes to deliver what the market is increasingly demanding?

We've been listening to 2030 Commitment signatories, and we've heard success stories from firms that are consistently hitting the current targets across their portfolios. Based on their achievements, we've identified four core strategies that can help you successfully push your firm and the industry toward zero carbon:

- Model building energy use at multiple design stages to keep the team focused throughout the process on passive design strategies and other energy-efficiency measures.
- Move beyond fossil fuels through building electrification.
- Use either on-site or off-site renewable energy.
- Reduce the embodied carbon of buildings.

Changes to the DDx in 2020—the first major refresh since the reporting app launched—reinforce the importance of these four core strategies. In addition, the updates have made the DDx easier to use for everyone at the firm. Last year, active users increased by 74% as firms pushed accountability deeper into project teams.

Let's take a deeper look at the four core strategies and how the DDx can support their adoption.

SECTION 1.

MODEL BUILDING ENERGY USE AT MULTIPLE DESIGN STAGES

Photo by Bruce Damonte

Energy modeling, the use of specialized software to simulate the energy use of a building, is one of the best design tools we have to help move us toward zero carbon.

Climate-responsive design as an energy-efficiency strategy is not new. But new energy modeling tools make it even easier to explore specific design options for their environmental impacts and cost effectiveness. Indeed, in 2020, 77% of whole-building square feet reported by 2030 Commitment signatories included an energy model. Even when they aren't the ones who run the simulations, architects need to take the lead on energy modeling, driving the process and ensuring that design changes made by everyone on the team respond to the models' findings.

THE MISTAKE OF POST-DESIGN SIMULATION

Many projects are modeled after design is complete, just to prove compliance with codes or voluntary certification systems. But this practice provides information when it's too late to be useful.

Energy modeling during design, on the other hand, can help a project reduce its energy use. In 2020, the average pEUI percent reduction for modeled whole-building projects was 53%, 9 percentage points higher than non-modeled whole-building projects reported in the same year.

By analyzing multiple parameters in parallel, design-phase energy simulation can support decision-making about massing, orientation, envelope and glazing materials, daylighting, and more. Modeling is the only way firms can reliably estimate how their projects will perform so they can make changes before the project is built.

OPTIMIZING THROUGH MODELING

Using old rules of thumb is not just a flawed approach; it also limits design options. Design-phase energy modeling is an opportunity for creativity and innovation in buildings because it highlights which design decisions hit the mark and which don't. Modeling is critical for helping identify the most cost-effective ways to make a project more energy efficient, especially when it's used in conjunction with good cost estimating. That means architects often need to flex their creative muscles to solve complex design problems.

And by modeling during design, teams can more accurately predict how much renewable energy will be required to get to zero. That's one reason simulation is usually required in order to be eligible for renewable energy incentives and rebates.

MODEL ENERGY USE

Photo by Gabe Border

INCREASING SOPHISTICATION & APPLICATIONS

It's an exciting time to be optimizing through modeling. Modeling tools are becoming ever more sophisticated and modeling professionals ever more creative as they work with architects during design phases.

Parametric energy modeling—the ability to compare the energy impacts of multiple design parameters at a time—is emerging as a more efficient way to run simulations. And scripting, where modelers write a customized script to more accurately test a specific system, can help provide more refined results to aid in design.

With adaptive reuse and carbon-neutral retrofits picking up speed in the industry, there has also been an increase in energy models for existing buildings.

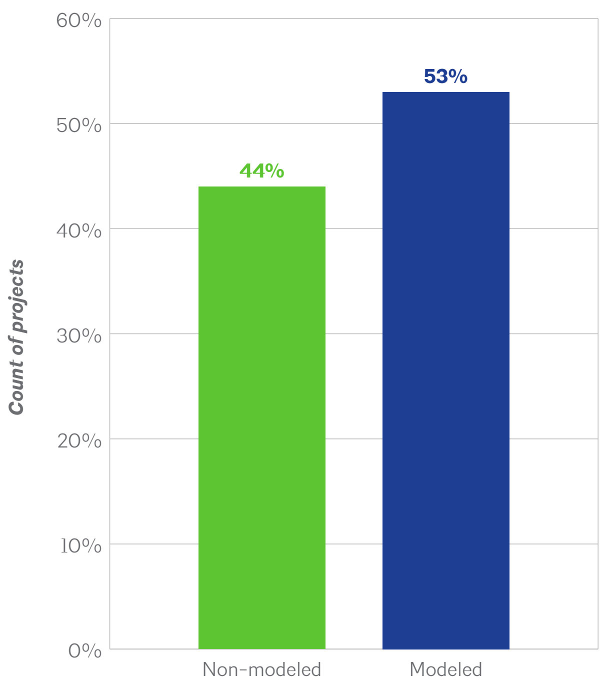
ENERGY MODELS IN THE DDX

The AIA 2030 Commitment encourages energy modeling of every whole-building project, and the DDx has changed in order to ensure greater accountability. In the previous platform, you could indicate that a project "will be modeled," and the system would assume that you reached the project's energy target; this sometimes led to a questionable project pEUI because it gave projects credit for being modeled when they had not been. You will now notice a reduced set of selections for modeling: "modeled" and "not modeled." It is no longer possible to indicate that a project "will be modeled."

Resources

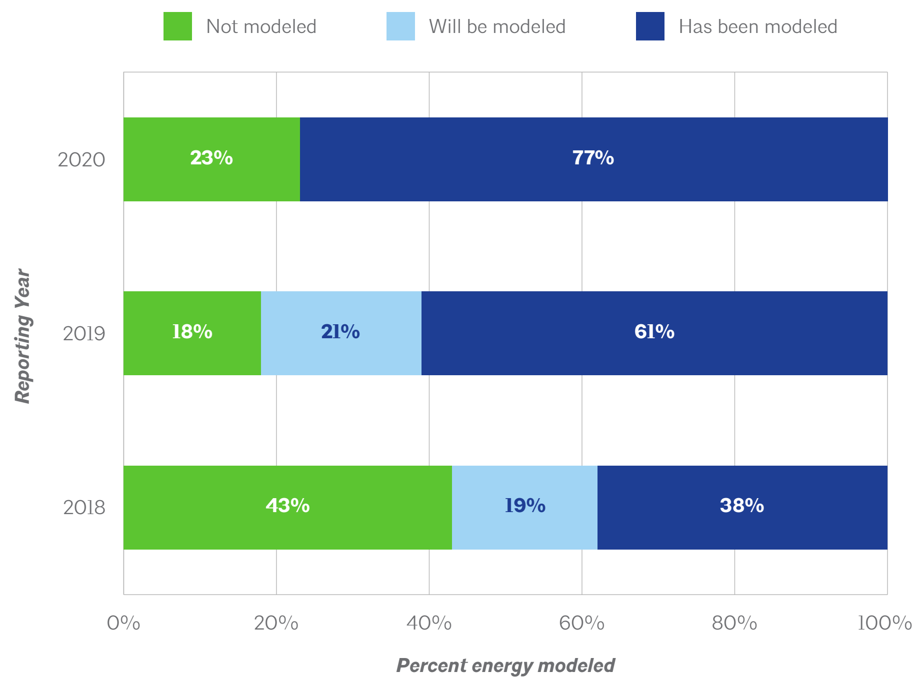
Architect's Guide to Building Performance
Building Energy Modeling 101: Architectural Design Use Case
ASHRAE Standard 209

pEUI % REDUCTION FOR MODELED VERSUS NON-MODELED WHOLE-BUILDING PROJECTS



When energy modeling is done iteratively starting in early design, teams can uncover efficiencies that translate to real energy and cost savings.

PERCENT OF WHOLE-BUILDING GSF WITH ENERGY MODELS, 2018-2020



More and more teams are discovering the advantages of energy modeling, with a full 77% of reported projects modeled in 2020.

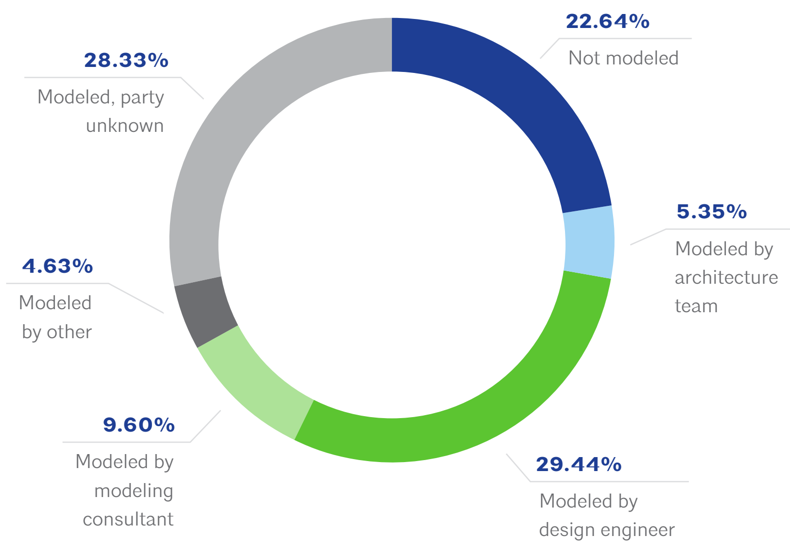
10,715

Total whole-building projects with energy model

2,692,142,974

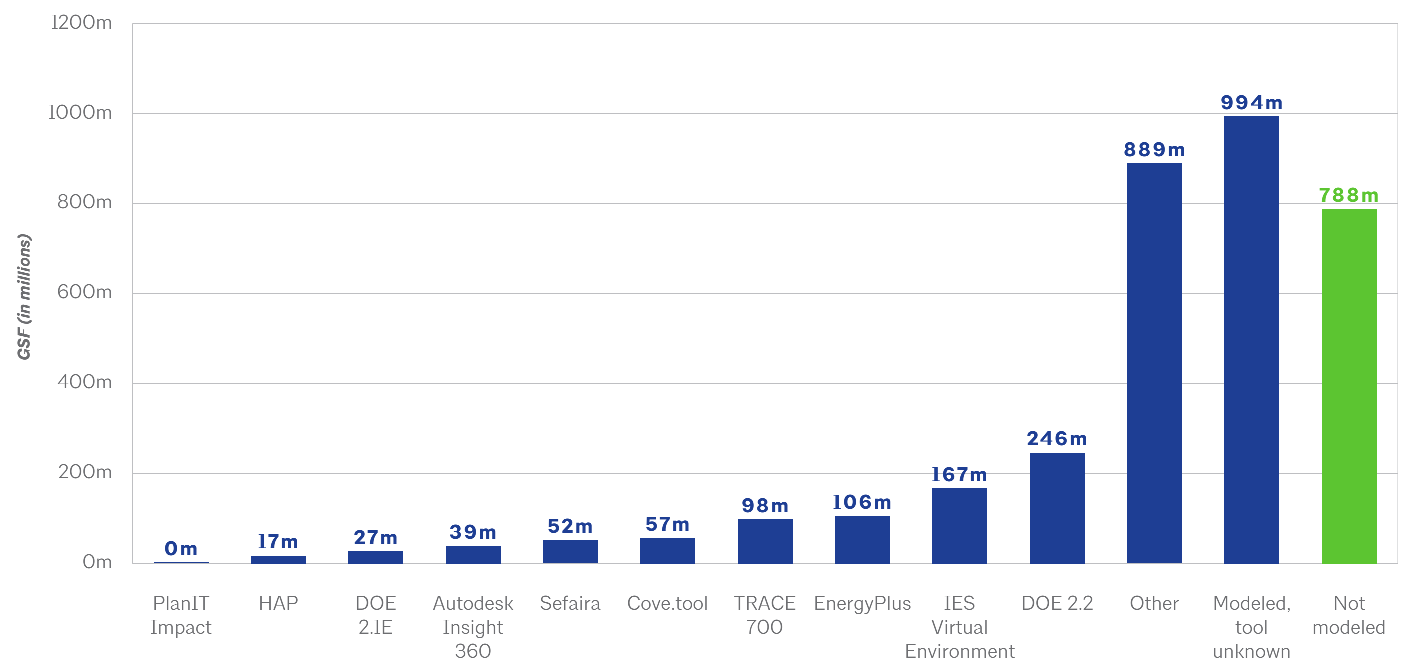
Total whole-building GSF with energy model

PERCENT OF WHOLE-BUILDING GSF BY MODELING PARTY



Who should do the modeling? Different teams make different decisions, but architects should drive the process and ensure that design changes respond appropriately to models' findings.

ENERGY MODELING TOOL BY WHOLE-BUILDING GSF



Design teams are using a wide array of old standbys as well as newer, emerging tools.

CASE STUDY: WHY YOU SHOULD MODEL EARLY AND OFTEN

San Francisco's EHDD has long embraced design that is attuned to site, environment, and context.

Ahead of its time at its founding in 1946, EHDD has a core philosophy that naturally fits with the growing understanding of sustainability over the past two decades. During that time, EHDD has taken an increasingly rigorous and science-based approach to design, including signing on to AIA's 2030 Commitment in 2013. The Commitment has helped the firm take a broader view of its entire portfolio and has cemented the critical importance of energy modeling at the early stages of design.

A mid-sized firm of about 70 staff, EHDD has a portfolio of everything from visitor-serving civic and cultural institutions to commercial and education, its main focus area. Working around the world, though primarily in California, EHDD has met the Commitment's targets every year since joining, with a pEUI reduction of 71% in 2019 and 70.8% in 2018. While the firm's net-zero-energy projects play an important role, "the 2030 Commitment allows us to be honest with ourselves on how we are doing overall, not just on our exemplary projects, along with looking at how we compare to how other firms are doing," explains Brad Jacobson, AIA, LEED AP BD+C, a principal at EHDD.

Energy modeling is deeply ingrained in the EHDD process, with project teams communicating "early and often" with consultants. In fact, EHDD collaborated with its engineers and consultants to develop a protocol detailing how the firm uses energy modeling throughout the phases of a project. This is now shared with new consultants at the proposal stage to set expectations for energy consumption and target-setting that go beyond code compliance.

"Energy modeling is a design tool as much as it is an accounting tool. A lot of times in sustainable design people have good intentions and use their intuition, but you'd be missing out on a lot of powerful opportunities if you don't look at energy modeling early in the process and only use it for compliance at the end," says Jacobson. For instance, in designing Boulder Commons, a net-zero-energy office building in Boulder, Colorado, the team's energy modeling determined that using fiberglass clips concealed in the wall to reduce thermal bridging would have a bigger impact on pEUI than external sun shades, and for much less cost. Modeling "allows you to analyze particular strategies and components by the numbers and then decide what is really getting you to the goal."

Photo by Bruce Damonte

SECTION 2.

MOVE BEYOND FOSSIL FUELS THROUGH BUILDING ELECTRIFICATION

Photo by Anton Grassl

BUILDING ELECTRIFICATION

Energy efficiency and passive design are largely responsible for the carbon reductions that projects have reported thus far, but those strategies can only get us so far if the equipment in our buildings still runs on fossil fuels. As the 2030 targets ratchet up to 80%, a deeper energy transformation is needed.

Fortunately, the electricity sector has incorporated enough clean, renewable sources that switching to all-electric equipment already reduces carbon emissions in some regions. And grids are only expected to get cleaner, especially with President Biden's support for a fully decarbonized power sector by 2035.

Once the grids are decarbonized, everything plugged into them will operate on zero emissions. To prepare for that day, many are calling for the "electrification" of the building sector—or the wholesale switching from fossil-fuel-powered equipment to electricity-powered equipment. For many cities, electrification is the most practical, cost-effective path to deep carbon reductions.

SIGNS ELECTRIFICATION IS HERE TO STAY

The premise of electrification is promising, but is fuel-switching really cost effective? Will this trend endure long enough to pay off, in terms of carbon and cost, in the end?

Roughly 47% of households rely on fossil gas as their main heating fuel, compared with 36% that rely on electricity, according to the U.S. Energy Information Administration. However, the price of fossil gas is projected to rise, making it cost effective for these households to switch. As more and more customers electrify, gas will become even more expensive, as there will be fewer customers to support the maintenance of gas lines and delivery infrastructure. To future-proof against these rising costs, we as a profession should be advising clients to consider going all electric today.

Besides cost, other influences are helping to ensure electrification will be an enduring trend:

- As a carbon policy, a number of municipalities are banning new fossil gas hookups.
- Corporations and institutions that have announced carbon-neutral goals have switched to all-electric buildings and are singing the praises of technologies like induction cooking.
- Health practitioners are advocating for electrification, citing health risks with combustion-based appliances, including carbon monoxide poisoning and lung or heart problems caused by exposure to particulate matter.

For all these reasons, there is a groundswell of support for electrification of buildings, which is pushing this strategy to the top of our climate priorities.

FUEL SOURCES IN THE DDX

With the program's historical focus on operational energy, teams are asked to report a project's predicted energy use intensity (pEUI). We now know that an all-electric building with a higher pEUI might be responsible for lower carbon emissions than a low-pEUI project powered by fossil fuels (depending on the mix of the electric grid).

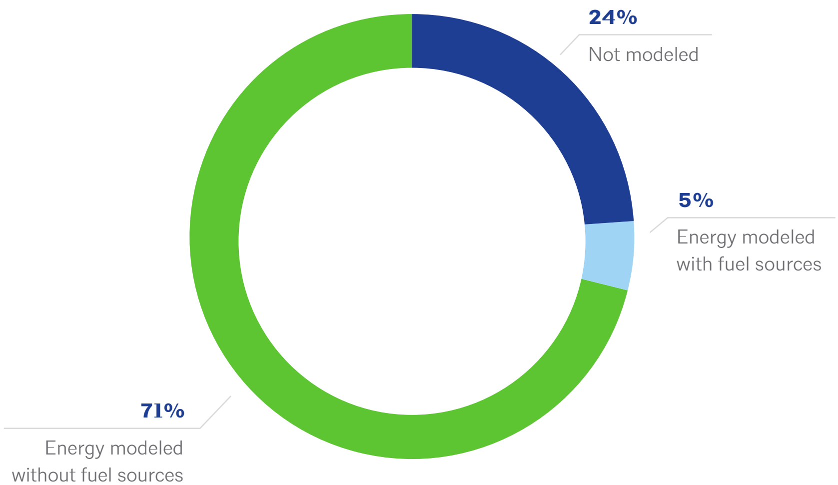
The DDx now provides two ways to enter pEUI, the latter of which provides more data about fuel types, carbon intensity, and the pace of electrification. Users can provide the overall pEUI in kBtu/sf/yr. Or they can enter consumption by fuel type in whatever unit of measure is convenient: kWh, therms, kBtu, etc. When users enter the more detailed data about consumption by fuel type, the DDx converts this information to carbon intensity and reports any reductions in a firm's portfolio summary.

In 2020, fuel source data was reported on 669 whole-building projects totaling nearly 93 million square feet. Of those projects, 45% are fully electric and an additional 21% have electrified at least 75% of their energy demand.

Resources

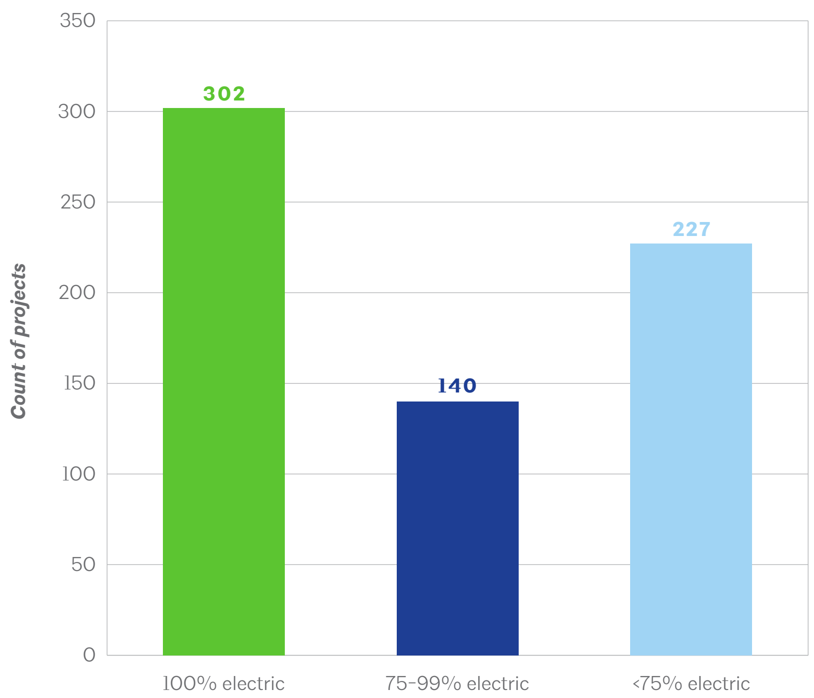
Building Electrification Technology Roadmap
The Economics of Electrifying Buildings

pEUI CALCULATION METHOD USED BY PROJECT COUNT



The new "fuel sources" feature is seeing uptake, and we expect that to increase as interest in electrification explodes.

PATH TO ALL-ELECTRIC BUILDINGS BY PROJECT COUNT



Almost 450 projects reported being at least 75% electric, compared with just over 200 that are less than 75%. That wedge is likely to go deeper in the near future.

669

Total whole-building projects energy modeled with fuel sources

92,805,067

Total whole-building GSF energy modeled with fuel sources

SECTION 3.

USE EITHER ON-SITE OR OFF-SITE RENEWABLE ENERGY

Photo by Greg Willett

RENEWABLE ENERGY

Integrating renewable energy like solar photovoltaics (PV) or wind power into your project can help you reduce carbon emissions faster because you aren't drawing as much power from the fossil-fuel-driven grid. And by integrating PV, your project can be part of cleaning up the grid, too!

Both the private and public sectors are starting to divest from toxic, polluting fossil fuels and are putting their money on renewables. Costs are decreasing, and in some cases the price tag is even lower than that of conventional fuel sources.

BE PREPARED

Even if you can't incorporate renewable energy into a project, it's important to design for the future. More and more jurisdictions are adopting building performance standards, which require owners to pay fines if their buildings consume too much energy. Clients should consider these and other long-term impacts before making decisions.

A "renewable ready" building has design elements that make it easy to add renewables after construction. For example, optimizing building orientation, roof design, and electrical systems can ease the cost of adding PV and can also improve PV performance.

CONSIDER OFF-SITE OPTIONS

Another way to add renewables to a project is to source energy from beyond the site. This could involve purchasing renewable energy certificates (RECs) or joining a community solar program.

There are many other ways to procure off-site energy. This Zero Code 2.0 publication from Architecture 2030 explains and rates them.

PAY FOR IT

Funding mechanisms for both on-site and off-site renewable energy are plentiful and on the rise.

Tax credits, rebates, and other government incentives have eased the burden significantly. Utilities sometimes have incentives as well. Then there are special contracts like power purchase agreements (PPAs), where an investor pays the first costs of the renewable energy system, and the building owner pays for the electricity from that system for a certain number of years.

The Biden administration is seeking further ways to fund direct cash rebates and low-cost financing for renewable energy.

And there's more good news: the cost of renewable energy has plummeted in recent years and is expected to continue to drop despite outside market pressures.

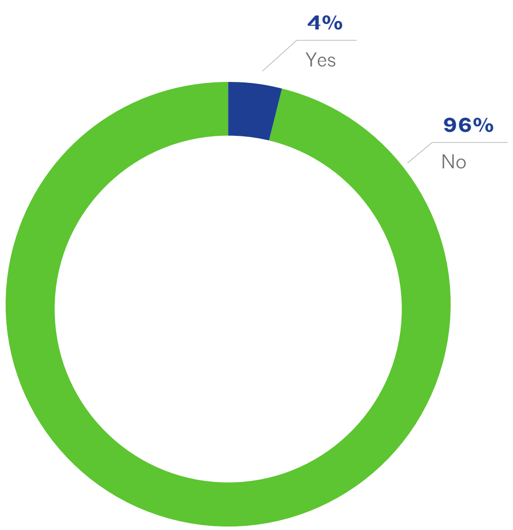
ADD RENEWABLES IN THE DDX

Even though fewer than 5% of of projects take advantage of the opportunity, tracking qualitative renewable energy information is now easier than ever in the DDx. Additionally, beginning in 2020, projects using the "fuel source" feature have the option to count off-site sources toward pEUI improvements.

Resources

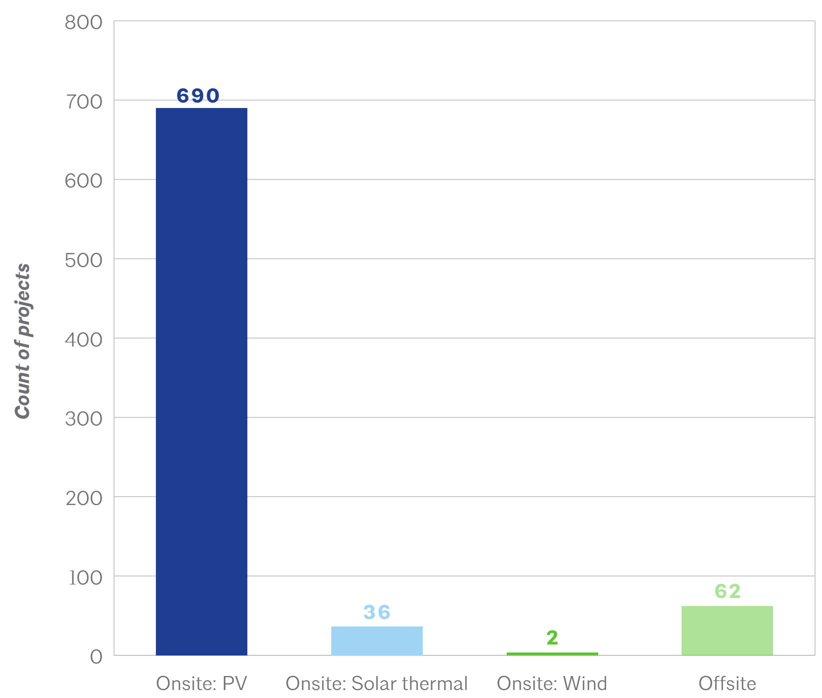
Architect's Primer on Renewable Energy
Solar Ready: An Overview of Implementation Practices
Solar Ready Buildings Planning Guide
Zero Code 2.0: Off-Site Procurement of Renewable Energy

PERCENT OF ALL PROJECTS REPORTING RENEWABLE ENERGY OPTIONS



This year, 4% of projects reported renewable energy options, but that could increase as off-site options come online.

RENEWABLE ENERGY OPTIONS BY PROJECT COUNT



Onsite solar PV is by far the most popular renewable energy option reported for 2020.

775

Total projects reporting renewable options

144,502,780

Total GSF reporting renewable options

SECTION 4.

IMPROVE THE EMBODIED CARBON OF BUILDINGS

Photo by Integrated Studio

Photo by Severin Stalder on Unsplash

Most architects (and certainly 2030 Commitment signatories) have a well-developed understanding of how to reduce the operational energy use of buildings. But upfront embodied carbon—the greenhouse gas emissions associated with manufacturing and transporting building materials—is at least as pressing because those emissions are happening right now, when we need to act urgently. Embodied carbon from materials like concrete and steel accounts for about 11% of global emissions, according to Architecture 2030. The organization also says we will need to reduce the embodied carbon of the built environment by 65% by 2030 and get to zero by 2040.

The primary metric of the 2030 Commitment remains operational carbon, measured through the proxy of energy use intensity. But we need to be thinking more holistically about carbon neutrality.

Gone are the days when we could comfortably specify high-embodied-carbon shading devices and insulation in order to reduce operational carbon. And gone are the days when we could in good conscience design brand new net-zero-energy buildings without even considering reuse of existing stock. It's time to design for embodied and operational carbon simultaneously.

REUSE WINS THE DAY

Over the last few years, concern about embodied carbon has accelerated, as have the availability of tools and the level of knowledge sharing. Whole building life cycle assessment software has taken root in many firms and can be used in tandem with the EC3 database, which helps architects understand the embodied carbon of specific building products.

What these tools and other sources tell us is that one of the most effective ways to cut embodied carbon is through building reuse.

Fortunately, this strategy coincides with other trends. Although the number of existing building projects reported by signatories dropped from 10,683 in 2019 to 9,652 in 2020, general investment in existing building renovations is expected to grow for two reasons. First, the pandemic has put the future of the commercial office market in question as working from home becomes more common and more permanent. And second, building performance standards—regulations requiring high levels of measured energy performance—are a growing trend. Many owners will need major upgrades to their buildings in order to comply.

EMBODIED CARBON IN THE DDX

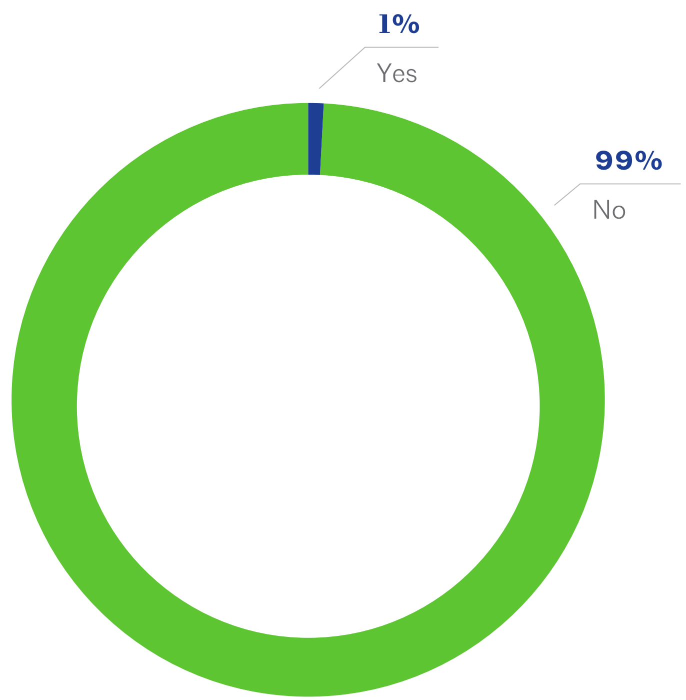
A new feature in the DDx allows you to track whole building life cycle assessment results if you have them. In 2020, 55 companies reported embodied carbon on 291 projects.

Although your embodied carbon results don't contribute to pEUI reduction targets, AIA encourages tracking them as part of your climate action goals. By entering your numbers, you can contribute to profession-wide embodied carbon literacy and accountability.

Resources

AIA-CLF Embodied Carbon Toolkit for Architects
AIAU: Embodied Carbon 101
Design for Adaptability, Deconstruction, and Reuse
Renovate, Retrofit, Reuse
The Urgency of Embodied Carbon and What You Can Do About It

PERCENT OF ALL PROJECTS REPORTING EMBODIED CARBON



Reporting embodied carbon is a new option that was used by 1% of projects this year.

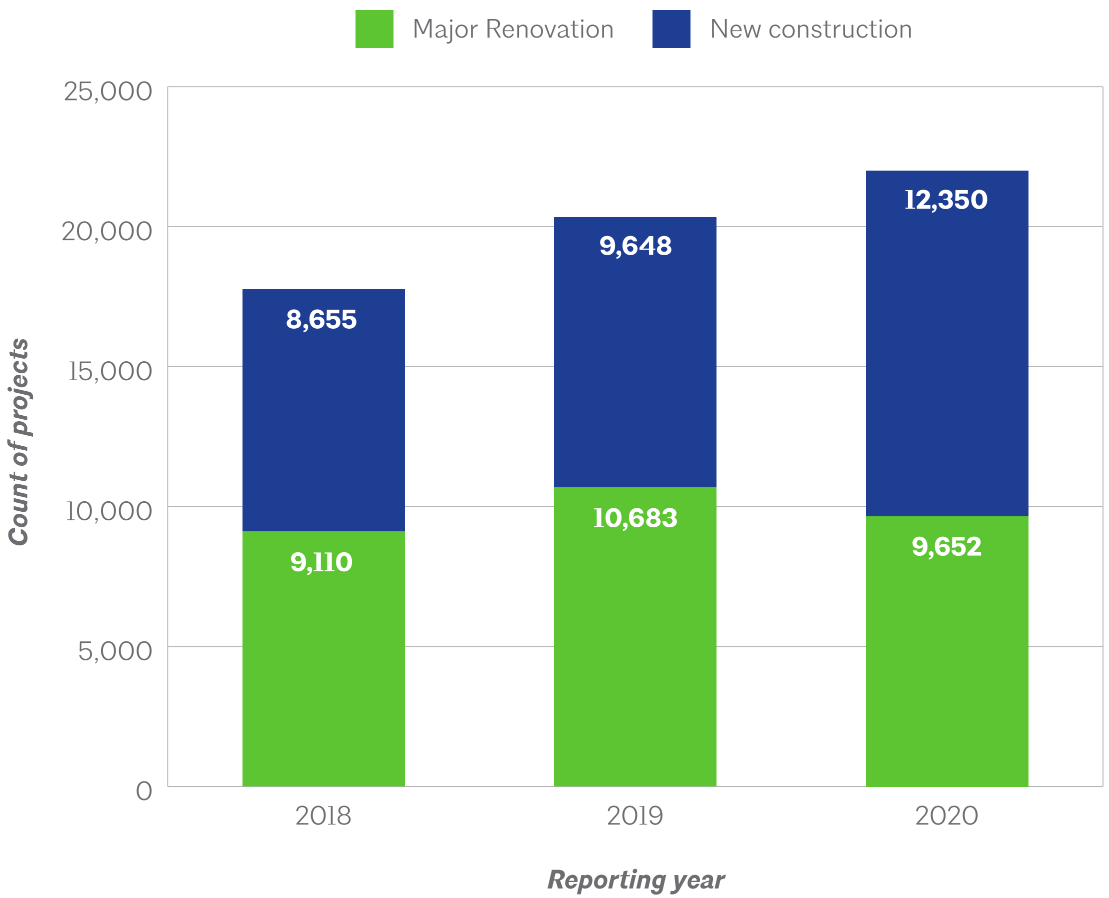
291

Total projects reporting embodied carbon

63,698,563

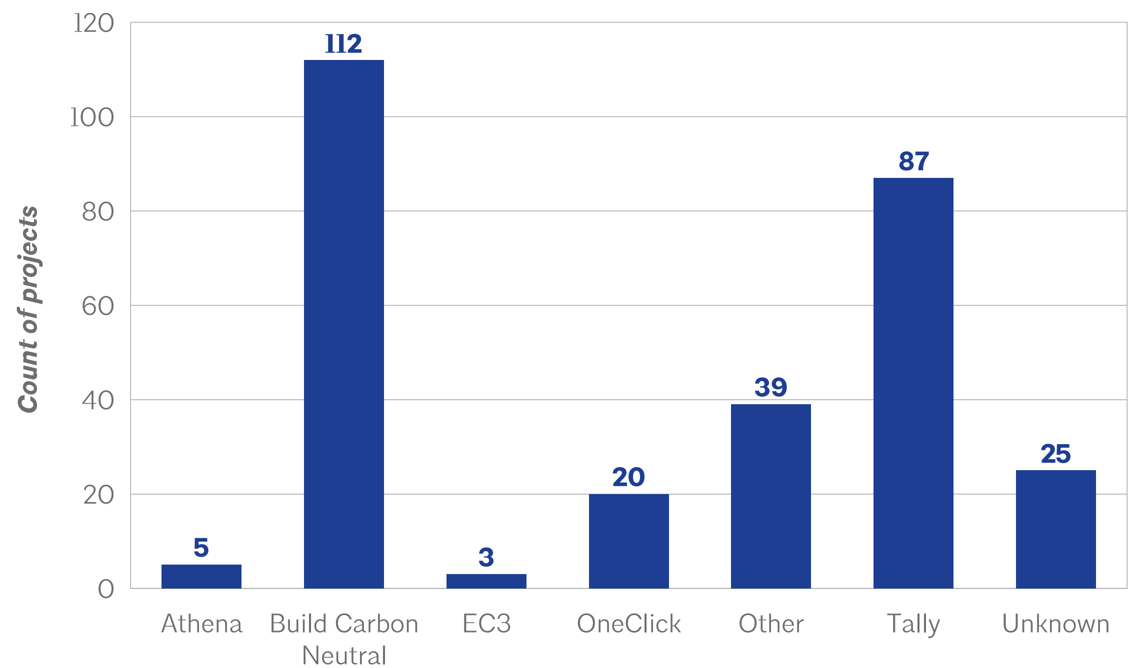
Total GSF reporting embodied carbon

PROJECTS REPORTED BY CONSTRUCTION TYPE, 2018-2020



Existing building renovations represent an opportunity for architects to limit embodied carbon emissions.

EMBODIED CARBON MODELING TOOL BY PROJECT COUNT



Project teams use a variety of tools to calculate embodied carbon.

Embodied carbon ranges, 2020	
Minimum (excluding outliers)	-50 $kgCO_2e/m^2$
Q1	208.63 $kgCO_2e/m^2$
Median	322.24 $kgCO_2e/m^2$
Q3	544 $kgCO_2e/m^2$
Maximum (excluding outliers)	1,038 $kgCO_2e/m^2$

There are not yet norms for comparing embodied carbon against a reasonable baseline, but by collecting this data, we will help move the industry toward standardization.

REPORTED EMBODIED CARBON RANGES, EXCLUDING OUTLIERS ($kgCO_2e/m^2$)

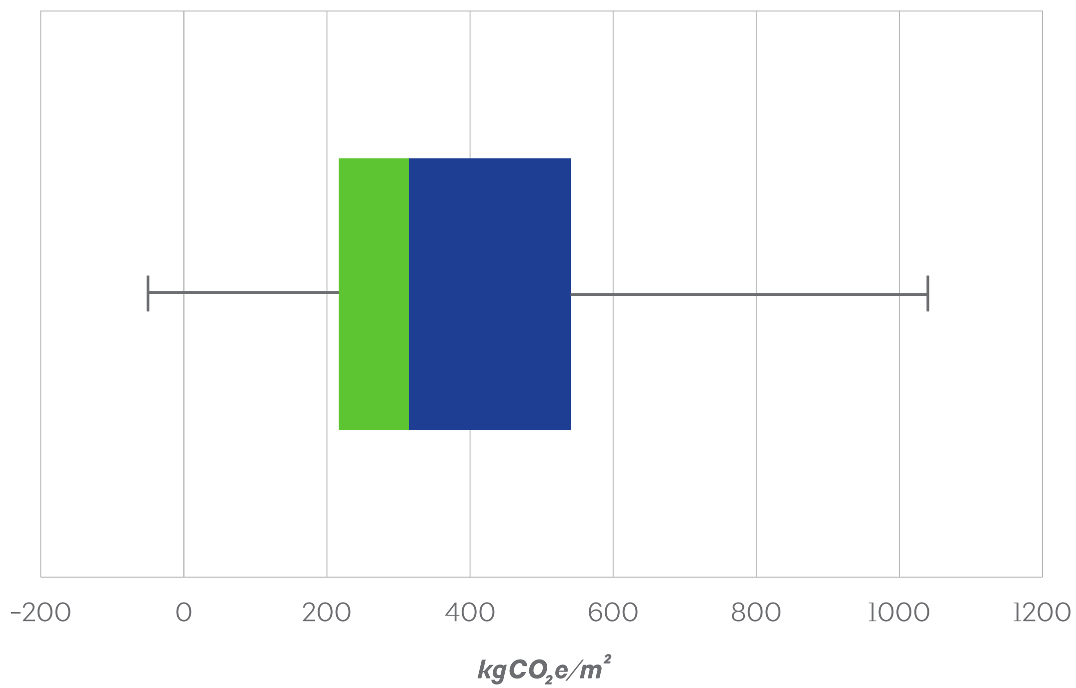


Photo by Karl Connolly Photography

CASE STUDY: PLANTING SEEDS

Long before embodied carbon was cool, Quinn Evans was specializing in historic preservation and redesign of existing buildings.

The firm is now starting to measure the impacts of reuse and other sustainable design choices. They are showing that you don't have to dive into the deep end to get started on understanding embodied carbon.

"It's really a ballpark estimate," explains Julia Siple, AIA, LEED AP BD+C, who is a senior associate and the director of sustainability at Quinn Evans. Every project team is required to use the very simple Construction Carbon Calculator early in design to get a sense of how different choices can yield different embodied carbon results.

"We're trying to build familiarity with what the metrics of embodied carbon are—what is a big number, what is a small number, what is your benchmark, what is your target?" Siple says. "We are starting to plant seeds."

In addition to this preliminary requirement, select teams are also performing whole building life cycle assessments, working with either the Tally Revit plug-in or the Athena Impact Estimator. These tools are much more sophisticated and accurate, allowing designers to dig deep, compare the impacts of all kinds of materials, and come up with the lowest-embodied-carbon solution.

Siple also describes an in-between approach that's based on a LEED pilot credit, Procurement of Low-Carbon Construction Materials. "It's a lot more of an Excel-sheet type of calculation," she says, and uses methodology developed by the Carbon Leadership Forum (CLF) at the University of Washington. Siple says the method "is really informative and one I hope to see us use again." Using CLF guidance, the team calculates the baseline embodied carbon of nine materials (more at the team's discretion), then attempts to reduce those numbers in the design case. For example, working with the structural engineer, the team might find a design solution that uses less steel or concrete.

Siple is excited that embodied carbon reporting is now an option in the DDx, even though it's not directly related to energy use. The 2030 Commitment "started with energy because it felt very accessible: This is where we have control and influence and opportunities." But "to some extent, EUI is not the end-all and be-all," Siple added. "It's really great to see carbon becoming a unifying, common metric to really think about pushing change."

We are stronger every day.

We've been through a lot as people and as a profession, but we're emerging stronger for it. Responding to the pandemic, greater attentiveness to social equity, and the opportunities associated with a transformed political landscape are all driving us forward.

At the same time, the 2030 Commitment signatories haven't forgotten their goal of achieving carbon neutrality. Every project matters, and every percent improvement makes a difference.

Participation and reporting continue to grow, and many firms are finding it easier and easier to get to zero on more projects. Our profession is pushing harder, faster, and more tenaciously to meet our targets—and the 2030 Commitment is pushing too. Together we're thinking about carbon more holistically and driving toward new ways to reduce our footprint.

This is an emergency, and this is our moment.
We are stronger every day.

Want more? Additional chart, figures, and statistics from RY2020 download here.

By joining the 2030 Commitment, your firm:

- Helps create more sustainable, resilient communities for all individuals and families, particularly those who will pay the greatest costs of environmental degradation;
- Saves clients' money by integrating energy analysis and metrics into your practice;
- Boosts its profile by developing new sustainability approaches and exemplifying sustainable design;
- Allows architects, engineers, designers, and builders to join a growing movement dedicated to addressing climate change; and
- Demonstrates a commitment to addressing climate change in concrete, verifiable ways.

COMPANIES REPORTING 2020 DATA

The following 378 companies submitted portfolios for 2020. Companies who met or exceeded the 80% pEUI reduction for 2020 are underlined. The online *2030 Commitment Directory* includes a full list of 2030 Commitment signatories, including those who joined in 2020.

Firm size: 1–9

Access Architecture
Alchemy Architects
Arkin Tilt Architects
BRIBURN
Chaac Simulaciones Inc
COULSON
Daphne More, AIA
DEN Architecture
DSGN
dSPACE Studio
FIFTEEN Architecture + Design
Frederick + Frederick Architects
Gayla Bechtol Architects
gbA Architecture & Planning
High Plains Architects
HPZS
HUSarchitecture
In Balance Green Consulting
Jer Greene, AIA + CPHC
Kerstin Hellmann Architecture
Kipnis Architecture + Planning
Laura Garcia Design
LoFT Architecture + Design
Macht Architecture
Marlene Imirzian & Associates Architects
McLennan Design
NCA Studio Inc.
PATH Architecture
Paul Poirier + Associates Architects
Placework
Precipitate, PLLC
Riley Projects
Sam Rodell Architects AIA
Schadler Selnau Associates P.C.
Searl Lamaster Howe Architects
Serena Sturm Architects
TBDA
Thomas Shafer Architects
Touloukian Touloukian Inc.
TYP.
unabridged Architecture
Urban Design Perspectives
WATERSHED LLC
Weese Langley Weese Architects Ltd.
ZeroEnergy Design

Firm size: 10–19

A3C Collaborative Architecture
ANX – Aaron Neubert Architects
Blackbird Architects
Blair + Mui Dowd Architects, PC
Brooks + Scarpa Architects, Inc.
DRAW Architecture + Urban Design
DS Architecture
English + Associates Architects, Inc
Farr Associates
Field Paoli Architects
Freeman French Freeman
Heliotrope Architects
John Ronan Architects
Johnson Roberts Associates, Inc.
Jones Studio, Inc.
Jones Whitsett Architects
Kaplan Thompson Architects
KOO LLC
Kuhn Riddle Architects
Kuth Ranieri Architects
Lehrer Architects LA, Inc.
LGA Architecture
Maclay Architects
Miller Hayashi Architects LLC
Nano LLC
OPAL
Placetailor
PZS Architects LLC
Re:Vision Architecture
Richter Architects
Ross Barney Architects
Roth Sheppard Architects
Sage and Coombe Architects LLP
Salazar Architect Inc.
Smith-Miller + Hawkinson Architects
SMNG A Ltd.
SMP Architects
Studio Ma
The Green Engineer, Inc.
UrbanWorks, Ltd.
Vermont Integrated Architecture
VIA design architects
Vinci/Hamp Architects Inc.

COMPANIES REPORTING 2020 DATA

Firm size: 20-49

Anderson Mason Dale Architects
Ann Beha Architects
archimania
Architekton
Ashley McGraw Architects
Atkin Olshin Schade Architects
Bailey Edward
Blackney Hayes Architects
BLT Architects
Booth Hansen
Braun & Steidl Architects, Inc.
BRIC Architecture
Bruner/Cott & Associates
BVH Architecture
Carleton Hart Architecture
CAW Architects
Curtis + Ginsberg Architects LLP
Dake Wells Architecture
David Baker Architects
Design Innovation Architects
DIGSAU
Dimension IV – Madison, LLC
DREAM Collaborative
DSK Architects + Planners
DWL Architects + Planners, Inc
Eckenhoff Saunders Architects
Ehrlich Yanai Rhee Chaney Architects
El Dorado
Ellenzweig
emersion DESIGN
Engberg Anderson Architects
Feldman Architecture
Fennick McCredie Architecture
FFA Architecture and Interiors, Inc.
Finegold Alexander Architects
Flansburgh
Gonzalez Goodale Architects (GGA+)
GREC Architects
Green Hammer
Guidon Design
Hahnfeld Hoffer Stanford
HarrisonKornberg Architects
Hartshorne Plunkard Architecture
Helix Architecture + Design
Hirsch MPG LLC
Holly and Smith Architects
Holst Architecture
Howeler + Yoon Architecture
ICON Architecture, Inc.
IKM Incorporated
Jensen Architects
JSA, Inc
Koning Eizenberg Architecture, Inc.
Krueck Sexton Partners
Landon Bone Baker Architects (LBBA)
Leddy Maytum Stacy Architects
Leers Weinzapfel Associates
McKinney York Architects
MEPCE Inc.
Miller Dyer Spears, Inc.
MMW Architects
Neumann Monson Architects
Newman Architects
Noll & Tam Architects
Pappageorge Haymes Partners
PBDW Architects
Pei Cobb Freed & Partners Architects LLP
Pickard Chilton
Pyatok Architecture + Urban Design
Richard Kennedy Architects
RNT Architects
RossTarrant Architects, Inc.
SHKS Architects
Siegel & Strain Architects
Snow Kreilich Architects
The Sheward Partnership
TLCD Architecture
Trahan Architects
Trapolin-Peer Architects
Trivers Associates
TruexCullins
Van Meter Williams Pollack LLP
waterleaf architecture
Weber Murphy Fox
Wheeler Kearns Architects
William Rawn Associates
Wright Heerema Architects
Y.A. studio
Yost Grube Hall
Ziger|Snead Architects

Firm size: 50-99

Adrian Smith + Gordon Gill Architecture
ARC/Architectural Resources Cambridge
Arrowstreet
Atelier Ten
BAR Architects
Bassetti Architects
Bergmeyer
bKL Architecture LLC
BNIM Architects
Bora Architecture & Interiors

COMPANIES REPORTING 2020 DATA

BranchPattern, Inc.
Browning Day
CambridgeSeven
Centerbrook Architects and Planners
CO Architects
COOKFOX Architects
CS&P
Deborah Berke Partners
Design Collective, Inc.
DiMella Shaffer
Duda Paine Architects
EHDD
ELS Architecture and Urban Design
Eskew+Dumez+Ripple
Goody Clancy
Gruen Associates
GSBS Architects
GWWO Architects
Hacker
Hanbury
Harriman Architects + Engineers
Hastings Architecture Associates LLC
Hennebery Eddy Architects, Inc
HMFH Architects, Inc.
INVISION
KFA, LLP
KSS Architects
Lake|Flato Architects
Lavallee Brensinger Architects
Legat Architects
LSW Architects
M+A Architects
Mahlum Architects
McGranahan Architects
Miller Dunwiddie
MJMA
Montalba Architects, Inc.
Morrissey Engineering
MSR Design
National Community Renaissance
Opsis Architecture
Orcutt | Winslow
Overland Partners Architects
PCA, Inc
Quattrocchi Kwok Architects
Ratcliff
RMH Group
RMW architecture & interiors
RVK Architects, Inc.
Shears Adkins Rockmore Architects
Sheehan Nagle Hartray Architects
SHP Leading Design
SRG Partnership, Inc.
STG Design
Studio 8 Architects
Taylor Design
The Miller Hull Partnership
Utile
Valerio Dewalt Train Associates
VMDO Architects
Weber Thompson
WRT

Firm size: 100+

AC Martin
Albert Kahn Associates, Inc.
Alliiance
Ankrom Moisan Architects, Inc.
Architects Hawaii Limited
Architectural Nexus, Inc.
Ayers Saint Gross
Bala Consulting Engineers
Ballinger
Beyer Blinder Belle Architects & Planners, LLP
Bohlin Cywinski Jackson
Boulder Associates, Inc.
BSA LifeStructures
BuroHappold Engineering
BWBR
CallisonRTKL
Cannon Design
CBT Architects
Clark Nexsen
Clayco / LJC
Cooper Carry
Corgan
Cuningham Group Architecture, Inc.
Cushing Terrell
Dattner Architects
Davis Partnership Architects
DBR ENGINEERING CONSULTANTS, INC.
Dekker/Perich/Sabatini
DES Architects + Engineers
Dewberry
DIALOG
DLR Group
Elkus Manfredi Architects
Elness Swenson Graham Architects, Inc
Ennead Architects
EUA
EwingCole
EXP
EYP

REPORTING SIGNATORIES / Firm size 100+

COMPANIES REPORTING 2020 DATA

Fentress Architects
FGM Architects
Flad Architects
FXCollaborative LLP
GBBN
Gensler
GFF
GGLO
Goettsch Partners
Gould Evans
Gresham Smith
Grimm and Parker
Hargis Engineers, Inc.
Harley Ellis Devereaux (HED)
Hart Howerton
HDR
HGA Architects and Engineers
HKS
HLW International, LLP
HMC Architects
Hoefer Welker
HOK Inc.
Hord Coplan Macht
Huntsman Architectural Group
IBI Group
Integrus Architecture
Jacobs
JLG Architects
KieranTimberlake
Kirksey
Kohn Pedersen Fox Associates PC
KTGY Group, Inc.
Lemay
Leo A Daly
LHB, Inc.
Little Diversified Architectural Consulting
LMN Architects
Lord Aeck Sargent
LPA, Inc.
LRK Inc.
LS3P
Milhouse Engineering & Construction
Mithun
MOCA
Moody Nolan
Moseley Architects
NAC Architecture
NBBJ
NELSON Worldwide LLC
Olson Kundig
OPN Architects
Otak, Inc
Page
Parkhill
Payette
Pelli Clarke Pelli Architects
Perkins Eastman
Perkins&Will
POPULOUS
Quinn Evans Architects
RATIO Design
RDG Planning & Design
Robert A. M. Stern Architects
Sasaki Associates
SERA Architects
Shepley Bulfinch
Smith Seckman Reid, Inc.
SmithGroup
SMRT
Solomon Cordwell Buenz
SOM (Skidmore Owings & Merrill)
Stantec Architecture
Steinberg Hart
Studio Gang Architects
STUDIOS architecture
SWBR
The Beck Group
The SLAM Collaborative
Thornton Tomasetti
tklsc
TLC Engineering Solutions
TreanorHL
tvsdesign
Vanderweil Engineers
WDG Architecture
Wight & Company
Woolpert
WRNS Studio
ZGF Architects LLP

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For more information and resources, visit *aia.org/2030Commitment*.

PROJECT IMAGE CREDITS

Cover
University of Washington, Life Sciences Building
Architect: Perkins&Will
Photo credit: Nic LeHoux
80.2% predicted net EUI reduction from national average for building type.
This project received a 2021 COTE® Top Ten Award.

Page iv
(left) Ryerson University Daphne Cockwell Health Sciences Complex
Architect: Perkins&Will
Photo credit: Tom Arban Photography
6.4% predicted net EUI reduction from national average for building type.
This project received a 2021 COTE® Top Ten Award.

Page vi
Rainier Beach Clinic
Architect: Mahlum
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33.6% predicted net EUI reduction from national average for building type.
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Civitas
Architect: archimania
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100.0% predicted net EUI reduction from national average for building type.
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Microsoft Silicon Valley Campus
Architect: WRNS Studio
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37.0% predicted net EUI reduction from national average for building type.
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The Kendeda Building for Innovative Sustainable Design
Architect: Lord Aeck Sargent in collaboration with The Miller Hull Partnership
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111.8% predicted net EUI reduction from national average for building type.
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Market One
Architect: Neumann Monson Architects
Photo credit: Integrated Studio
100.0% predicted net EUI reduction from national average for building type.
This project received a 2021 COTE® Top Ten Award.

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Dorothy I. Height Elementary School
Architect: Quinn Evans
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