



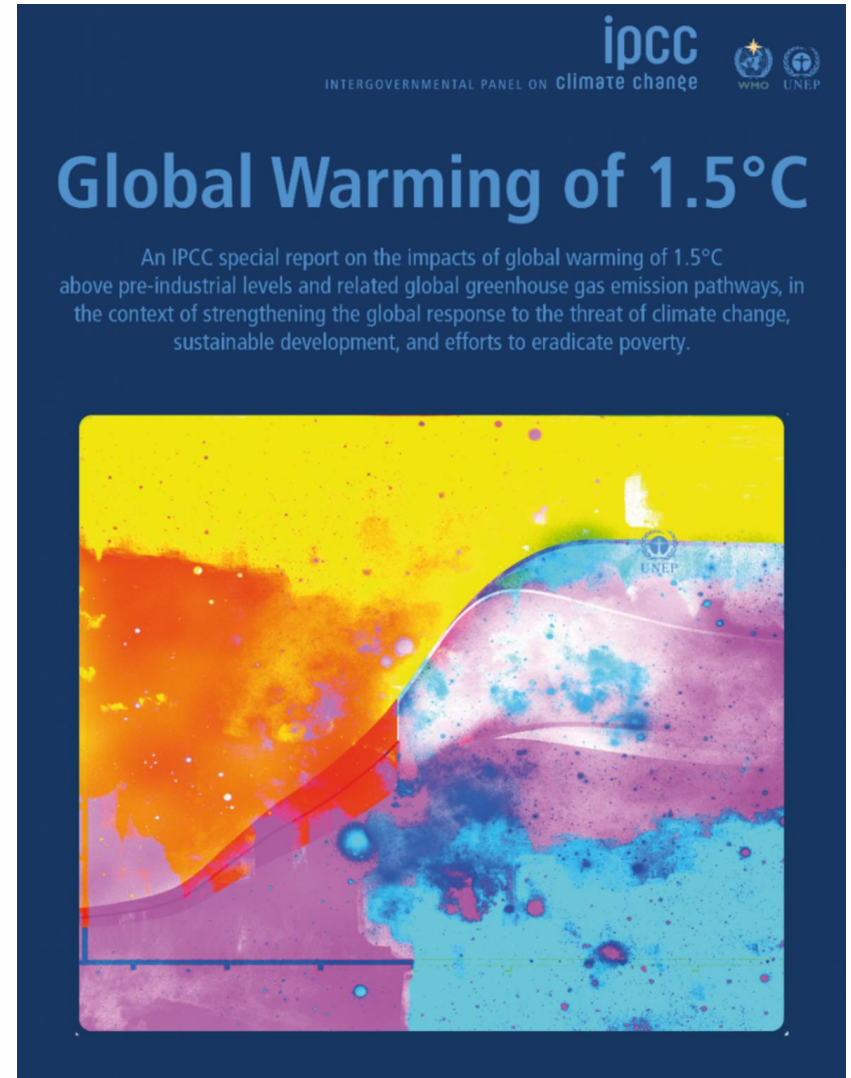
# **AIA** 2030 COMMITMENT



# Climate change

and the role of the architect

In 2018, The United Nations' Intergovernmental Panel on Climate Change reported the **need to limit global temperature change to 1.5 degree Celsius**, requiring “rapid and far-reaching” improvements to reach net zero by 2050.



**Building operations are responsible for about 30% of greenhouse gas (GHG) emissions globally.**

In some cities, building operations account for more than 70% of GHG emissions.

Embodied carbon emissions from (core and shell) materials and construction are estimated to be another 11% of GHG emissions globally.

Global CO<sub>2</sub> emissions by sector

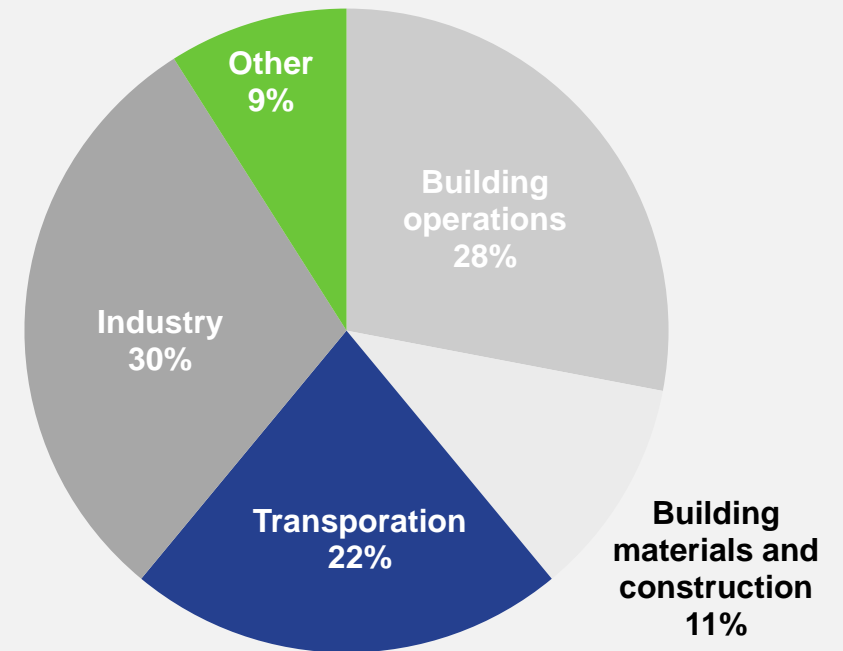
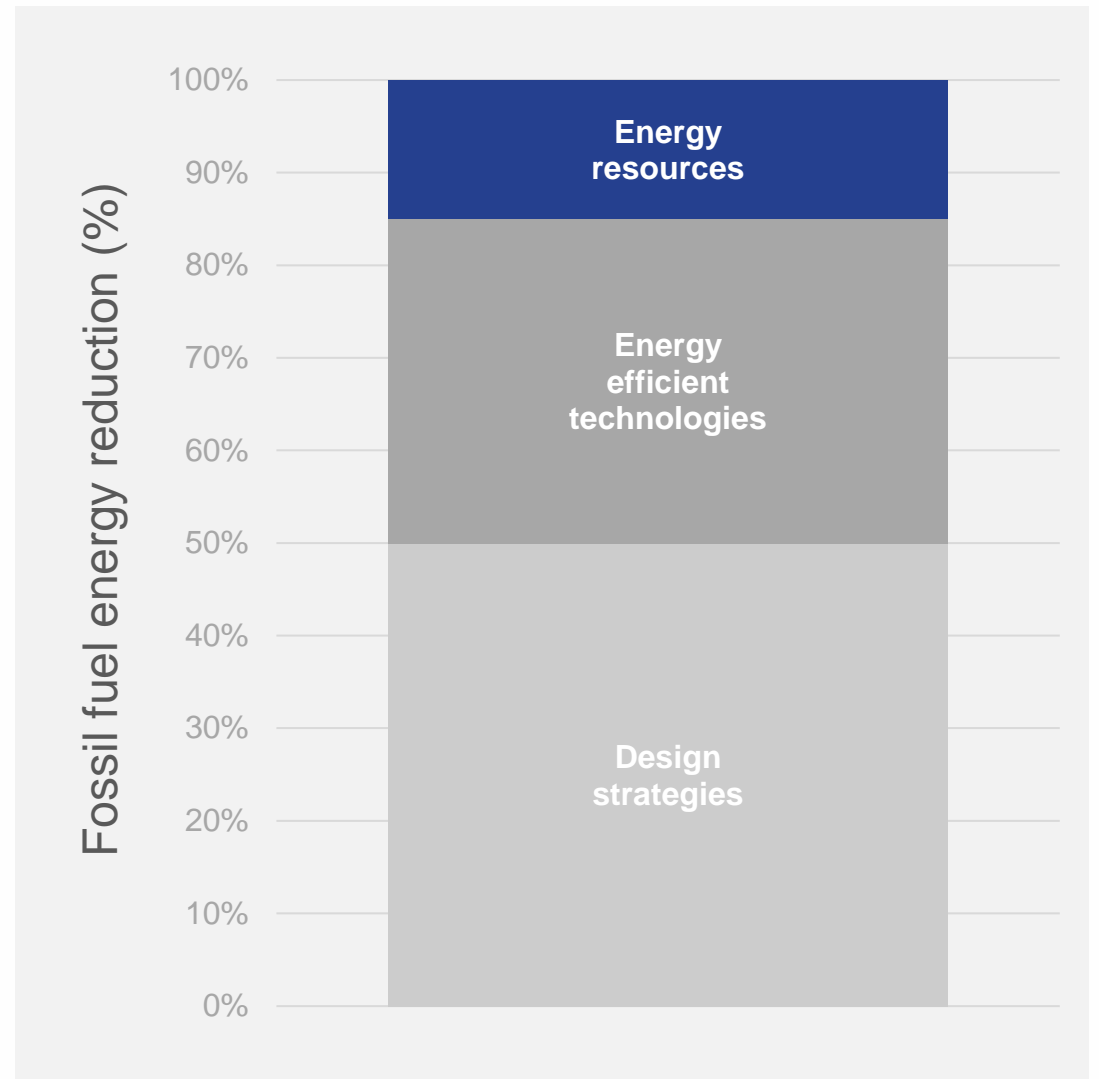


IMAGE © 2018 2030, Inc. / Architecture 2030. All rights reserved.  
DATA SOURCES: UN Environment Global Status Report 2017. EIA International Energy Outlook 2017.

**Design strategies have the greatest impact on building energy use.**

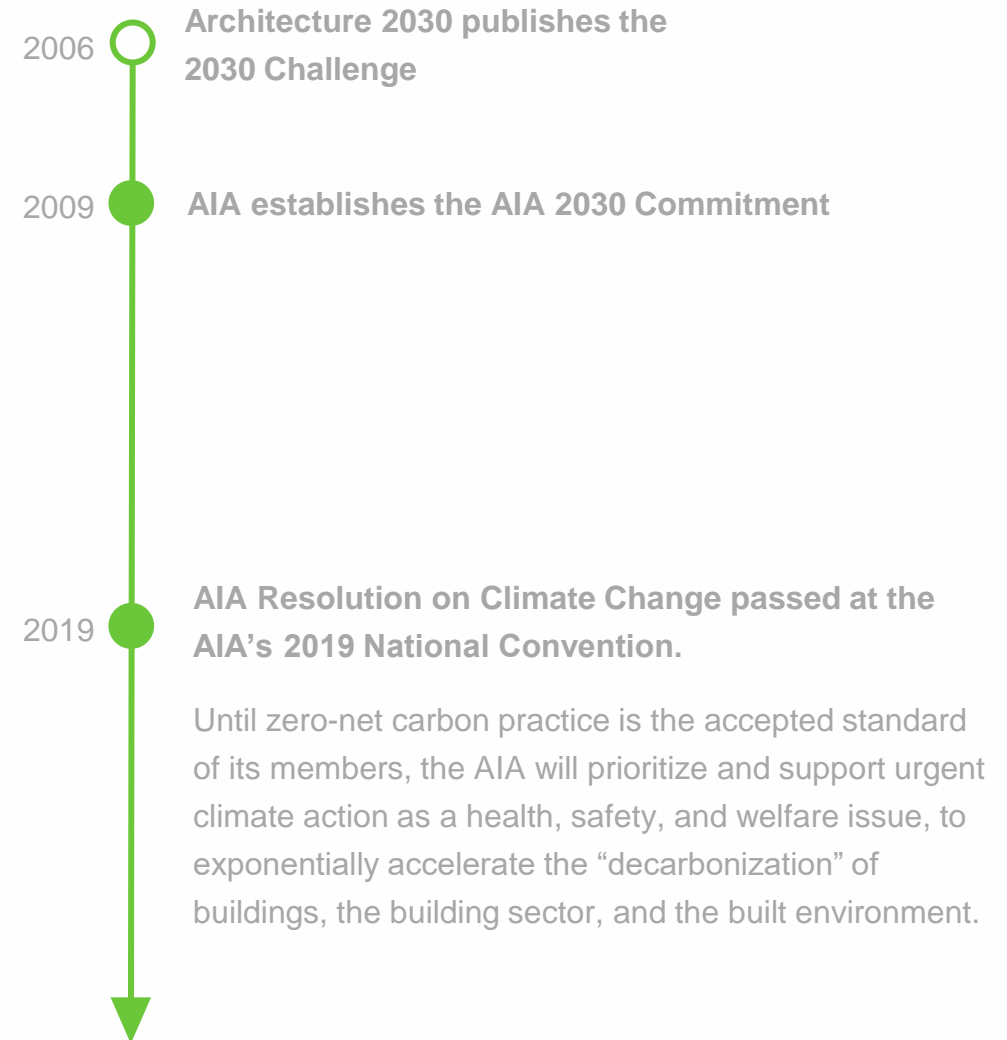
Architects have the greatest impact on design strategies early in the design process..



## The consequences of climate change are alarming, but they are not inevitable.

As professionals continue to coalesce around shared values and common goals, the opportunities for meeting the challenge expand. In 2019, AIA member overwhelmingly passed a resolution for “urgent and sustained climate action.”

**The time to start is now!**



The fight against climate change will play out in our cities and their buildings as we **double the current global building stock**—making zero net carbon new construction an imperative, not an option.

**75%**

share of global greenhouse gas emissions attributable to the urban built environment

**2.5 billion**

estimated increase in number of people living in urban areas by 2050

**40%**

share of global greenhouse gas emissions that come from existing buildings

**2.5 trillion**

estimated GSF of new construction by 2060







Of the 113 million existing buildings in the US, about **half will need a retrofit over the next decade.**

Each of the 20,000 architecture firms in the US could perform 250+ building retrofits annually and there would still be work to be done.

< Interior restoration at St. Patrick's Cathedral, a 2019 COTE® Top Ten recipient.

ARCHITECT Murphy Burnham & Buttrick Architects  
PHOTO © Whitney Cox

“You can’t have climate change without sacrifice zones, and you can’t have sacrifice zones without disposable people, and you can’t have disposable people without racism.”

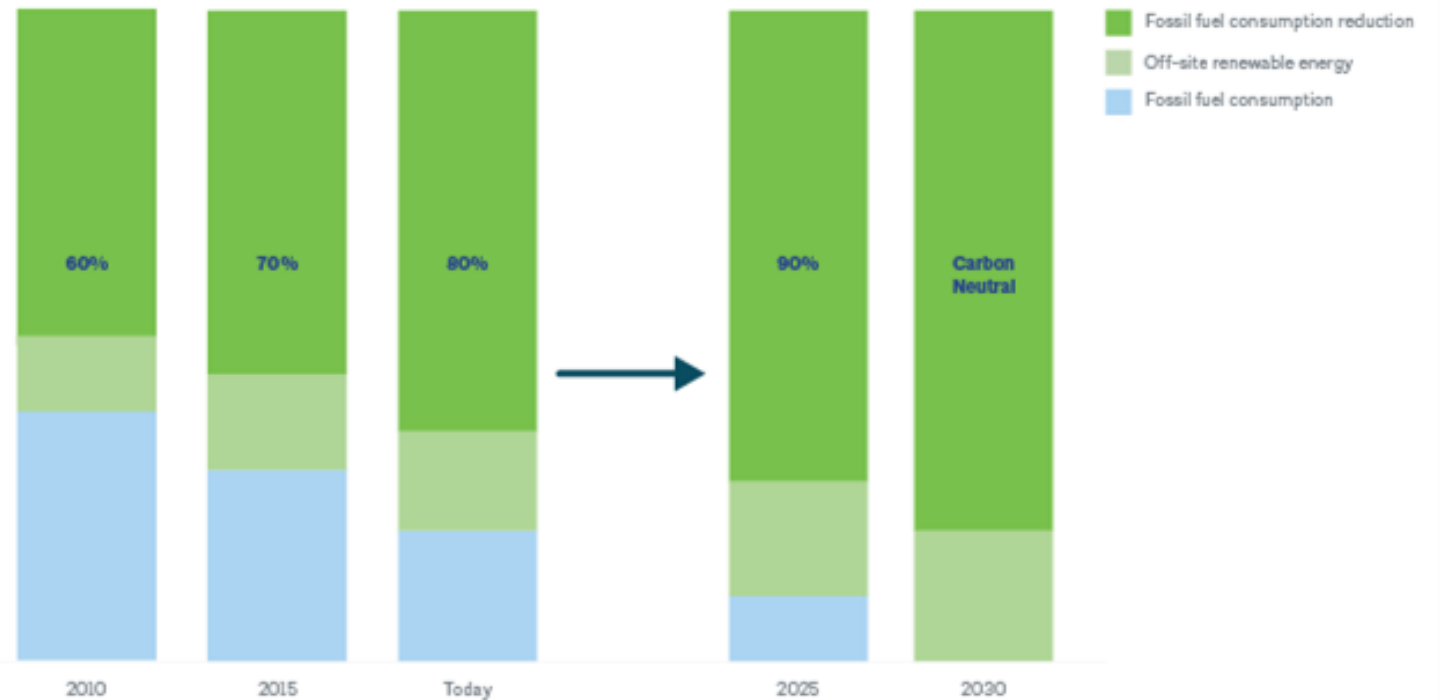
- Hop Hopkins, *Sierra*, June 2020

# Making the Commitment

and becoming a 2030 signatory

**The mission of the AIA 2030 Commitment is to transform the practice of architecture in a way that is holistic, firm-wide, project based, and data-driven.**

Participants prioritize energy performance as they work toward carbon neutral buildings, developments and major renovations by 2030.



“One of the things I was really fearful about this process was how much of our work is repeat clients and how difficult I was imagining it to be to go to our repeat clients and say ‘We haven’t been doing a very good job and we really want to do better.’ And I have to say in the last few months that I’ve been talking with our repeat clients, they have been extraordinary in accepting their responsibility and accepting their commitment with us. And there hasn’t been a whole lot of re-hashing of ‘why didn’t we do this better before?’ So I think our clients are saying we’re all in this together and please don’t let that be an excuse for not moving forward with this.”

- Shawn Evans, AIA, Principal at AOS Architects

# 2030 Commitment myths

MYTH	FACT
<ul style="list-style-type: none"> <li>✗ It takes too much time.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Typical time to gather and input data is less than 30 minutes.</li> </ul>
<ul style="list-style-type: none"> <li>✗ It requires too many resources.</li> </ul>	<ul style="list-style-type: none"> <li>✓ The program is free! A variety of resources are available to support you.</li> </ul>
<ul style="list-style-type: none"> <li>✗ I may have poor-performing projects in my portfolio.</li> </ul>	<ul style="list-style-type: none"> <li>✓ All data is aggregated and anonymous.</li> </ul>
<ul style="list-style-type: none"> <li>✗ I'll have to achieve the 2030 targets.</li> </ul>	<ul style="list-style-type: none"> <li>✓ Making progress is more important than meeting the targets.</li> </ul>
<ul style="list-style-type: none"> <li>✗ The project must be complete.</li> </ul>	<ul style="list-style-type: none"> <li>✓ 2030 is a framework to set energy targets early in the design and track progress at each phase.</li> </ul>

# Benefits for 2030 signatory firms



**Be a climate leader.**



**Master your data.**



**Attract clients and retain talent.**



**Get recognized.**



## **2030 signatories are leaders in the profession.**

- 7 of the 10 most-recent AIA Architecture Firm Award recipients are a 2030 signatory.
- Since 2014, every firm to receive a COTE® Top Ten Award has become a 2030 signatory.
- In 2018, more than 70% of AIA award-winning projects were designed by one or more 2030 signatory firm.

< Atrium/forum at Keller Center, a 2020 COTE® Top Ten recipient.

ARCHITECT Farr Associates  
PHOTO © Tom Rossiter



1

**Sign the  
Commitment  
letter**

2

**Create a  
Sustainability  
Action Plan**

3

**Endeavor to  
meet 2030  
targets**

4

**Report all  
projects in  
the DDx**

5

**Review and  
update your  
Sustainability  
Action Plan**



- **Create a DDx account**  
(<https://2030ddx.aia.org/>)
- **Draft a Letter of Commitment signed by firm leadership.** A template letter is available [here](#).
- **Upload Letter of Commitment to the DDx**

[Date]

Robert Ivy, FAIA  
EVP/Chief Executive Officer  
The American Institute of Architects  
1735 New York Avenue, NW  
Washington, DC 20006-5292

Dear Robert:

[Firm Name], a [size of firm] person firm located in [location(s)], is hereby signing on to the AIA 2030 Commitment program and its goal of carbon-neutral buildings by the year 2030.

The places where we live, work and play represent the largest sources of greenhouse gas emissions in America, as well as around the world. The design and construction industry has made significant strides toward creating high performance buildings of all types and uses. As a result, the industry is positioned to have a profound impact by continuing to foster high building performance and reducing building-related greenhouse gas emissions.

As architects, we understand the need to exercise leadership in creating the built environment. We believe we must alter our profession's practices and encourage our clients and the entire design and construction industry to join with us to change the course of the planet's future. A multi-year effort will be required to alter current design and construction practices and realize significant reductions in the use of natural resources, non-renewable energy sources and waste production and promote regeneration of natural resources.

We therefore commit [Firm Name] to take the following steps that are part of the AIA 2030 Commitment program:

- Create an account in the Design Data Exchange (DDx).
- Within six months of the commitment date, conduct firm engagement related to the 2030 Commitment and create a Sustainability Action Plan.
- We endeavor to meet 2030 energy reduction targets across every project as a deliberate part of design.
- Within the first year and each year thereafter, report the progress of our firm's entire design portfolio toward meeting the 2030 goals by using the AIA 2030 DDx.
- Review how progress and practices are tracking with our firm's Sustainability Action Plan. Update our Sustainability Action Plan once every three years, reflecting on the progress shown our reporting.

We also support the critical need for more consistent and more rigorous metrics related to actual building performance. We further commit our firm's assistance to the AIA and others in the ongoing development of effective metrics and standards for reporting purposes. It is understood that reporting through the AIA 2030 Commitment program must respect the confidentiality of information about specific clients, projects and proprietary tools.

We look forward to working with you and our professional colleagues to achieve the goals of the 2030 Commitment.

Sincerely,

[Name, title]

cc: [list partners here if appropriate]

1

SIGN THE LETTER

2

CREATE AN SAP

3

ENDEAVOR TO MEET TARGETS

4

REPORT PROJECTS

5

UPDATE SAP

- **Upload a Sustainability Action Plan (SAPs) to DDX within first 6-months.**

SAPs document a firm's approach to sustainable design and should address:

- Firm commitment
- Design & approach
- Evaluation & reporting
- Outreach & advocacy
- Training and education
- Operations & outlook

Examples can be found [here](#).

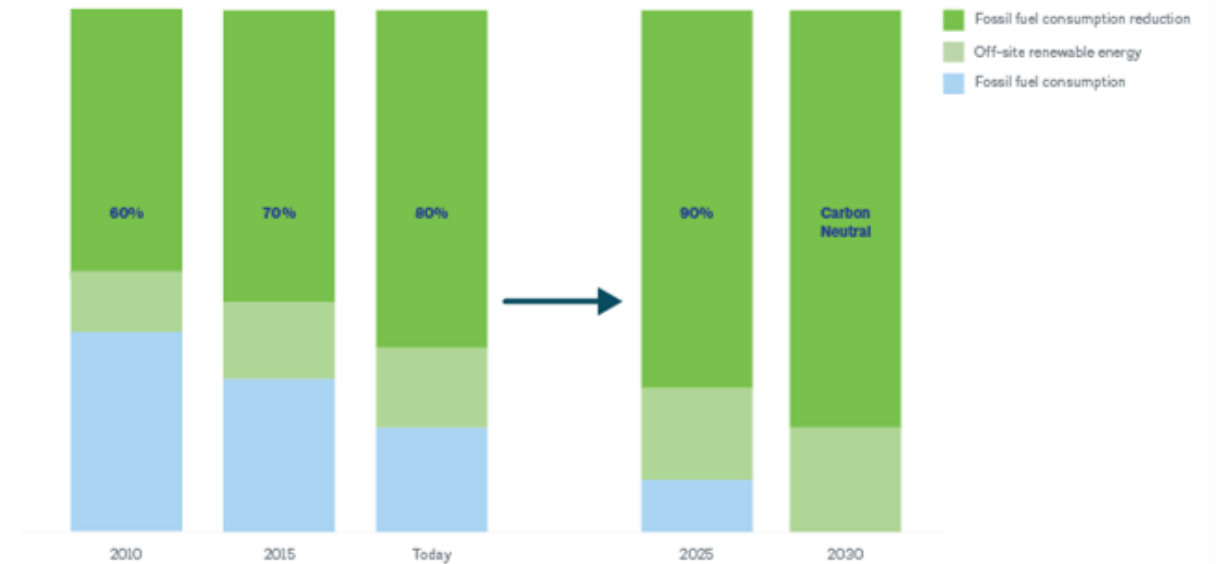




- Endeavor to design all projects to meet current reduction targets:

**80% pEUI reduction** from the baseline energy performance for whole-building projects

**25% pLPD reduction** from baseline for interiors projects.





SIGN THE LETTER



CREATE AN SAP



ENDEAVOR TO MEET TARGETS



REPORT PROJECTS



UPDATE SAP

- The annual reporting deadline is **March 31<sup>st</sup>**.
- Report all projects in an active design phase during the reporting year.
- In joint-venture projects, both firms may report the project.
- Only report interior projects with lighting scope.

**AIA 2030 Design Data Exchange**

Acmeview Architects | Hello, AIA Tester! | > My Account | > Sign Out

PORTFOLIO | INPUTS | REPORTS | RESEARCH

SUMMARY

Projects: 1009  
Submitted/In-Progress: 182/827  
Total Area (GSF): 769.39 M

Reporting Year: All

PROJECT CONTROLS

Project Category  Project Phase  Reporting Year  Project ID  
 Predicted (EUI / LPD)  Reporting Status  Baseline (EUI / LPD)  Country  
 Office Location  Building Use Type  Area (GSF)  % EUI Reduction  
 Goal (EUI / LPD)  Reporting Details  Year of Occupancy  Inputs Responsibility  
 State/Province  City

Submit Portfolio

Projects

Search > Reset Search Results

Show 10 Entries

<input type="checkbox"/>	Final	Project Name	Project Category	Project Phase	Reporting Year	Project ID	Predicted (EUI / LPD)	Reporting Status
<input type="checkbox"/>	<input checked="" type="radio"/>	Open Office example	Non-Residential	Design Closeout Final	2017	PEBNG1518723819	25.0	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Open Office example	Non-Residential	Construction Documents	2017	PEBNG1518723819	25.0	Submitted
<input type="checkbox"/>	<input checked="" type="radio"/>	Open Office example	Non-Residential	Design Development	2016	PEBNG1518723819	22.0	Submitted
<input type="checkbox"/>	<input checked="" type="radio"/>	test abu dhabi	Non-Residential	Schematic Design	2017	PRLRL1518564763	Not Determined	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Multi-use test	Non-Residential	Concept	2017	PRDIV1518099226	Not Determined	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Climate Zone 1B test	Non-Residential	Concept	2017	PLIWI1518036298	45.0	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Local Project	Non-Residential	Schematic Design	2017	POPZP1515784704	70.0	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	All Uncategorized	Non-Residential	Concept	2018	AllUncategorize6	98.83	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Insight Demo	Non-Residential	Concept	2018	InsightDemo	33.88	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Test Project	Non-Residential	Design Development	2017	PEUEM1514318706	Not Determined	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	Test	Interior Only	Concept	2017	PDPUD1513975195		In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	All Uncategorized	Residential	Schematic Design	2017	CGIndia	150.53	In Progress
<input type="checkbox"/>	<input checked="" type="radio"/>	All Uncategorized	Residential	Concept	2017	CGIndia	150.53	Submitted

Previous 1 2 3 4 5 6 7 8 9 ... 70 71 Next

1

SIGN THE LETTER

2

CREATE AN SAP

3

ENDEAVOR TO MEET TARGETS

4

REPORT PROJECTS

5

UPDATE SAP

- **Update your Sustainability Action Plan every three years.**

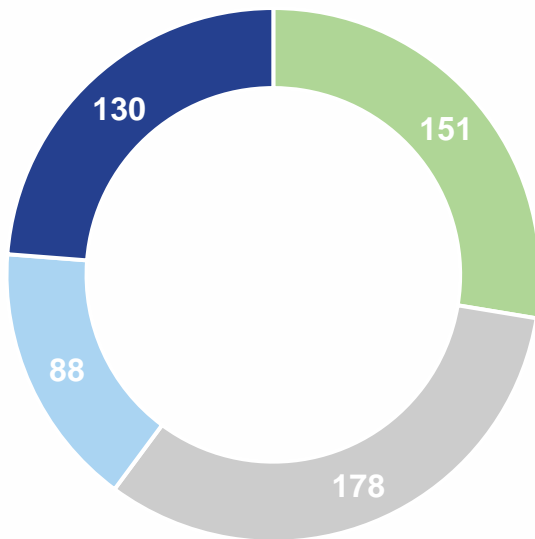


# 2030 Signatories

and their impact

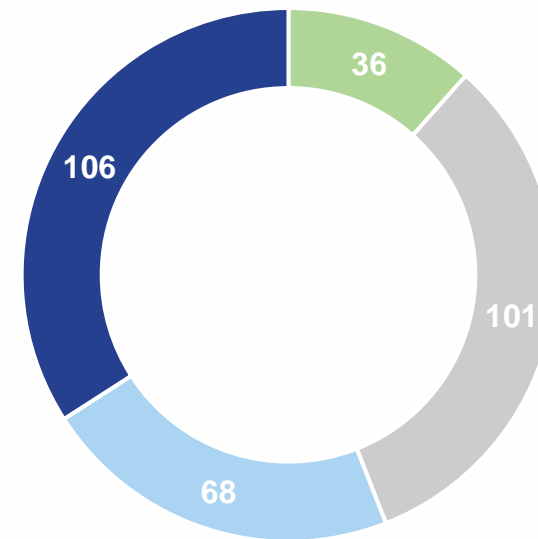
Count of active signatories who joined before 2019, by size

■ 1 to 9 ■ 10 to 49 ■ 50 to 99 ■ 100+



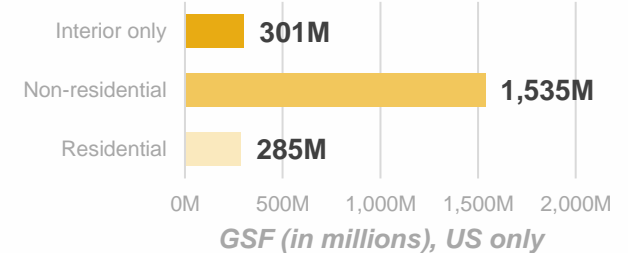
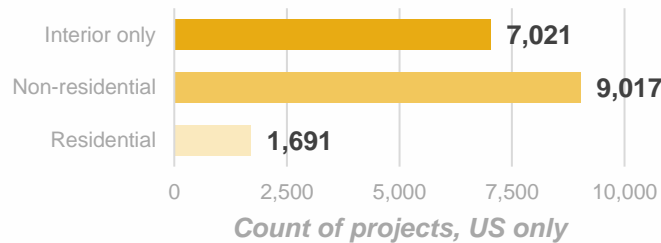
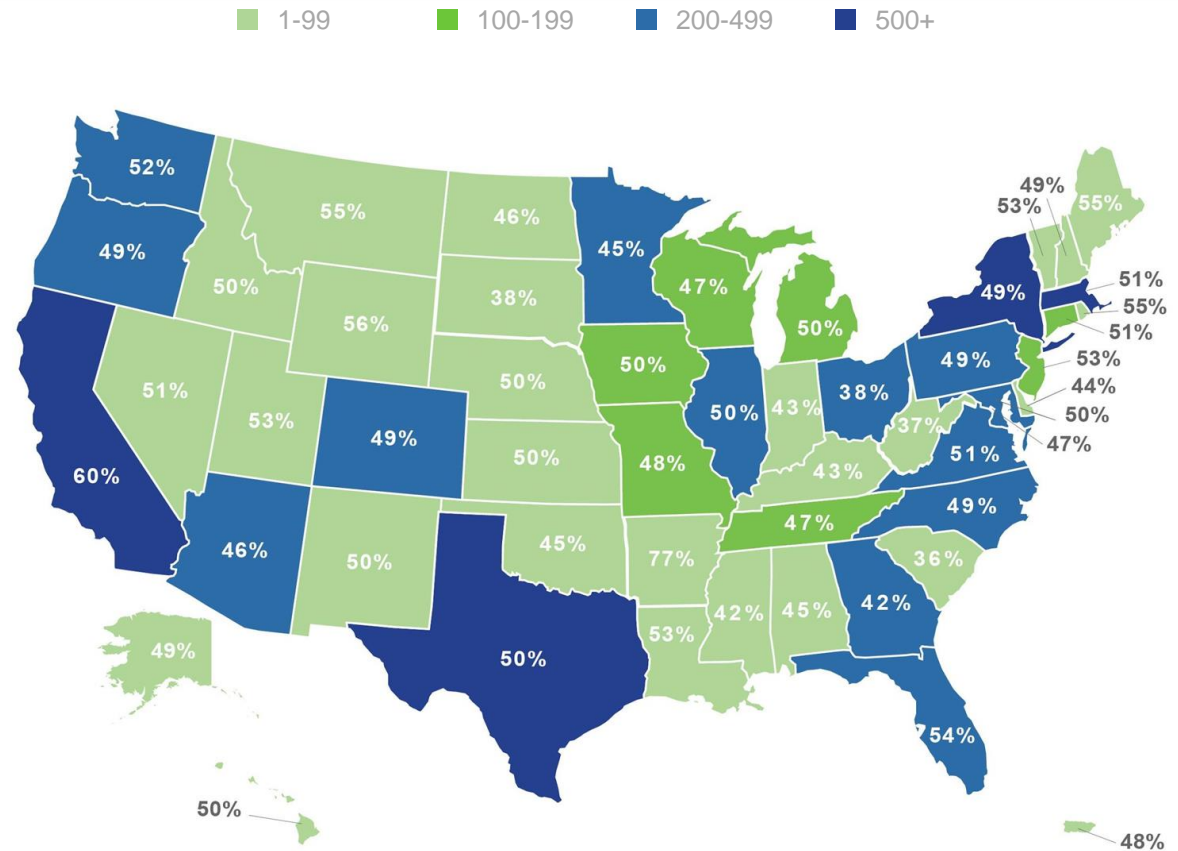
Count of companies who submitted a 2019 portfolio by size

■ 1 to 9 ■ 10 to 49 ■ 50 to 99 ■ 100+





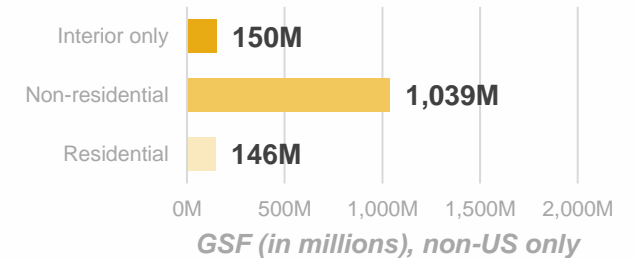
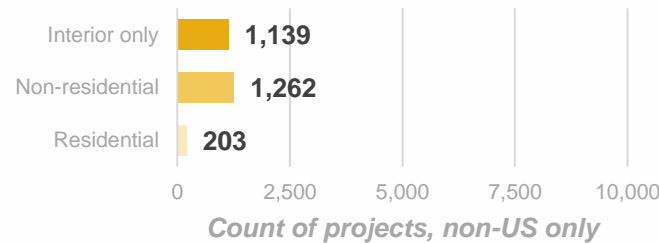
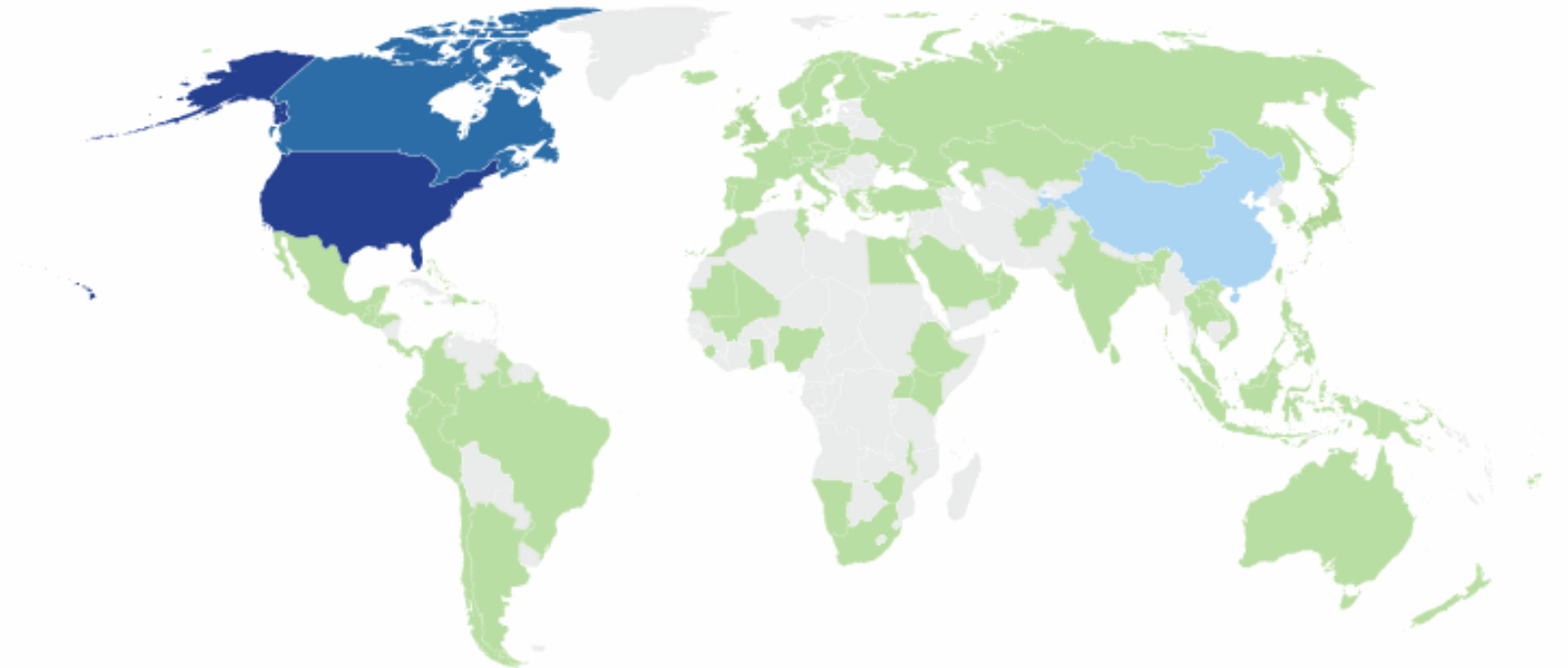
In 2019, 2030 signatories reported 17,708 projects—totaling 2.1 billion sq ft—from every US state, the District of Columbia, and Puerto Rico.



None 1-249 250-499 500-749 750+

## The impact of the 2030 Commitment extends beyond the US.

In 2019, 2,602 projects totaling more than 1.3 billion sq ft were reported outside the US.



**In 2019, 2030  
Commitment projects  
predicted an annual  
overall energy savings  
equivalent to avoiding  
20.2 million MT CO<sub>2</sub>e.**

That's the same as removing  
4.4 million cars from the road for  
one year.

**194**

whole-building projects are predicted to be zero net energy (achieving  $\geq 100\%$  pEUI reduction).

**15%**

of reported whole-building GSF meets the 70% predicted Energy Use Intensity (pEUI) reduction target.

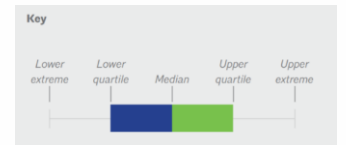
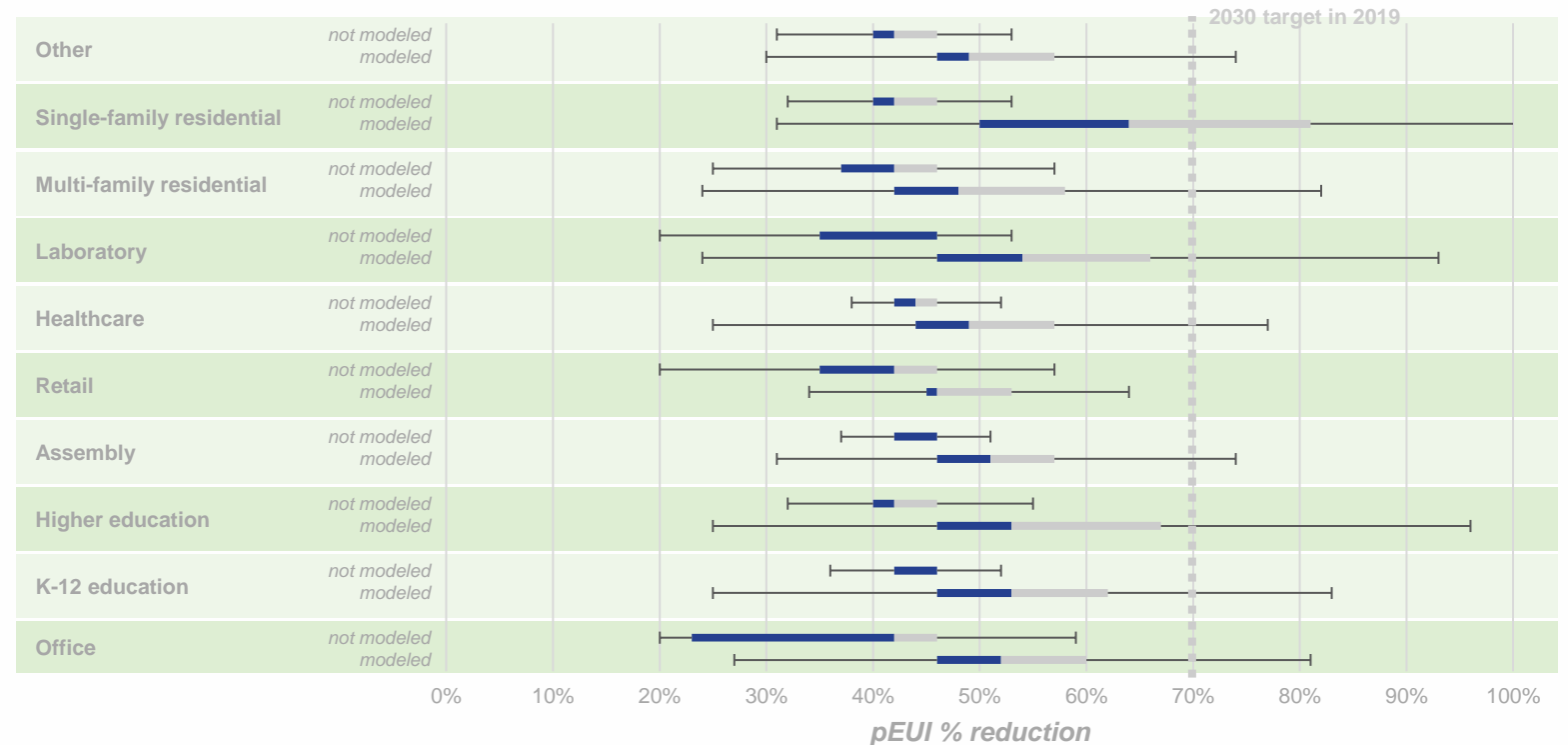
**25%**

of reported interior-only GSF meets the 25% predicted Lighting Power Density (pLPD) reduction target.

## CHART 5.4

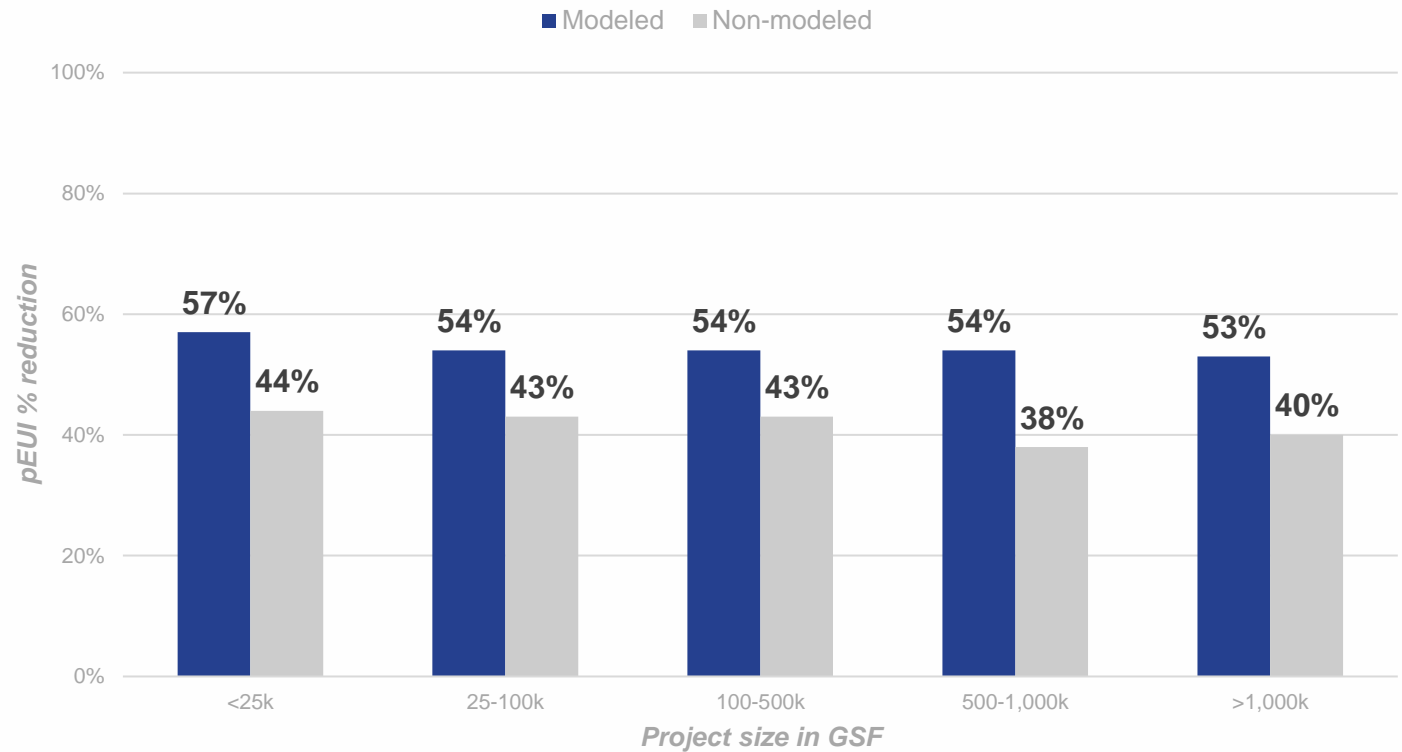
In 2018, projects in every use type demonstrated an ability to meet the **80% pEUI reduction target**.

Energy modeling is even more important as the target increases to 80% in 2020.



**Modeled projects consistently report higher savings, regardless of size.**

2019 pEUI reduction by GSF bin



**In 2018, 2030 projects represented energy savings of more than \$4.1 billion over the baseline equivalent.**

**COMMERCIAL SAVINGS**

A typical 100,000-square-foot commercial office building in New York City designed to perform 70% better than the 2030 baseline would yield the following annual savings:

**~2,154 MWh**

less energy

**~\$199,600**

in projected energy cost savings

**~520**

metric tons CO<sub>2</sub>e reduction

**RESIDENTIAL SAVINGS**

Meanwhile, a typical 2,500-square-foot single-family home in Mobile, Alabama, designed to perform 70% better than the 2030 baseline would yield the following annual savings:

**~22.6 MWh**

less energy

**~\$2,050**

in projected energy cost savings

**~9**

metric tons CO<sub>2</sub>e reduction

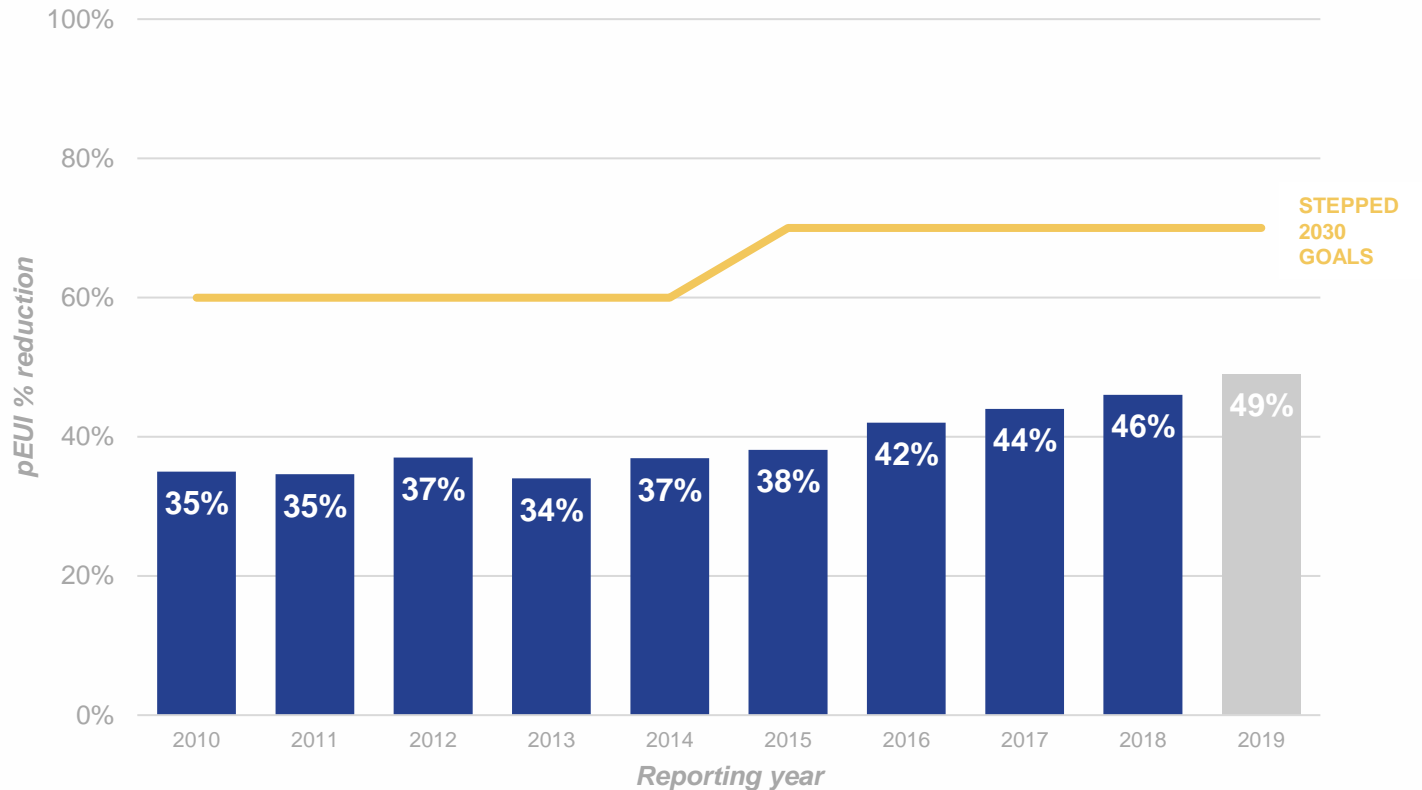
RB+B Architects, a small firm in Fort Collins, CO, makes the case that pushing toward zero net carbon is good for clients whether they're motivated by environmental impacts or long-term operating costs.

**“We can give you a high-performing school that will save operating dollars. We can compare to similar buildings from the same time frames, showing annual savings of hundreds of thousands of dollars—which can be translated into a teacher’s salary or some other need.”**

**- Matt Arabasz, AIA, Principal RB+B**

**Our progress is not keeping pace with the growing urgency and impacts of climate change.**

Along with continued incorporation of proven energy-efficient design strategies, we also need to increase our use of energy modeling and incorporate on- and off-site renewable energy to reach these targets.



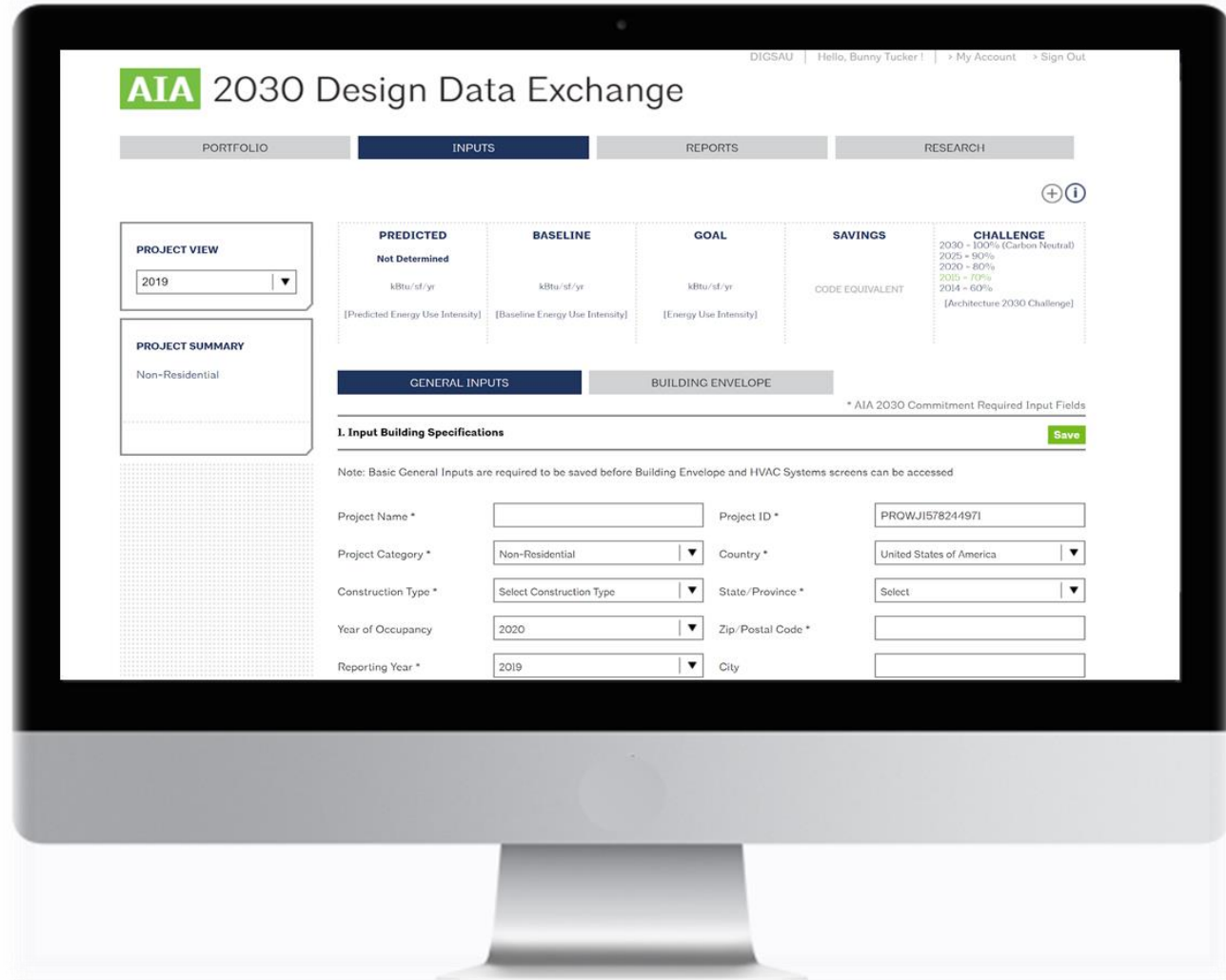


# 2030 Commitment in practice

# Getting to zero

with the Design Data Exchange (DDx)

The Design Data Exchange (DDx) is a cloud-based, confidential reporting tool created by AIA that allows you to compare projects by type, size, climate, and other attributes across the 2030 portfolio.





### **Direct input**

- Great for smaller firms or portfolios
- High degree of control over data
- Easily manage team permissions



### **Bulk upload**

- Great for firms with an in-house database
- Inputs limited to core fields
- Quickly upload hundreds of projects



### **Via energy modeling software**

- Great for firms who regularly model projects
- Connects with six software providers

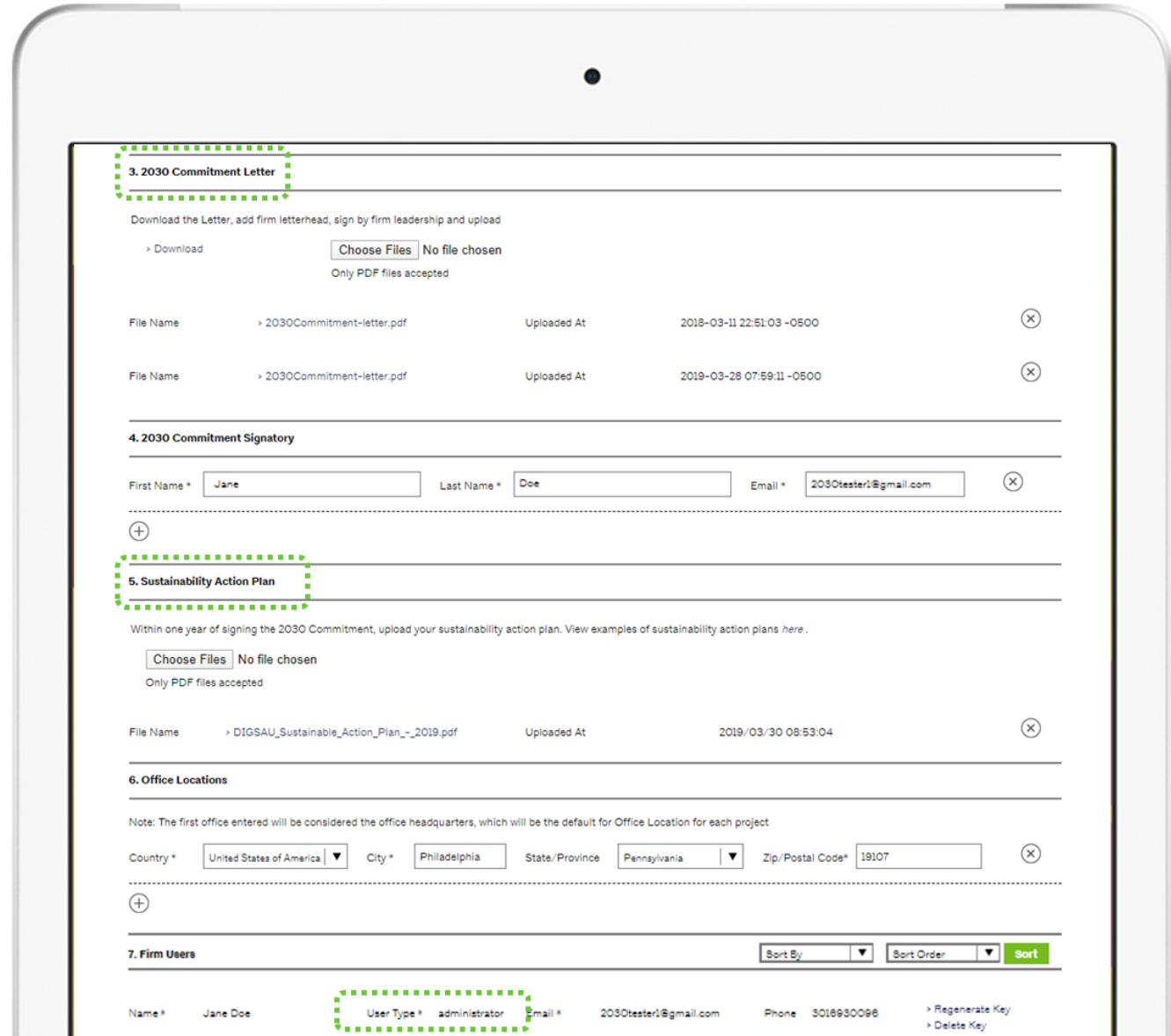
# Entering data

There are three ways to enter data in the DDx: direct entry, bulk import, and via energy modeling software. No matter how you enter the required fields are the same.

- **Section 1.** Define basic information about your project, including location and use type.
- **Section 2.** Document if residential and non-residential projects have been energy modeled and relevant energy code. Skip for interiors only projects.
- **Section 3.** Establish a baseline, target, and record your pEUI or pLPD.
- **Section 4.** Track additional data about your project, including embodied carbon and renewables!

## Joining the 2030 Commitment gives you access to the DDx (<https://2030ddx.aia.org/>)

- Use the DDx to submit firm and project data
  - 2030 Commitment letter
  - Sustainability Action Plan
  - Project data
- Add users and set permissions
  - Administrators
  - Users
  - Viewers



**SECTION 1: Input Building Specifications**

**Setup your basic project with these three inputs:**

- 1. Building type**
  - Project category
  - Construction type
  - Use type (>30 options!)
- 2. Size**
  - GSF area (by use type)
- 3. Location**
  - Country
  - State
  - Zip

**AIA 2030 Design Data Exchange**

PORTFOLIO | **INPUTS** | REPORTS | RESEARCH

PROJECT VIEW: 2019

PROJECT SUMMARY: Non-Residential

**PREDICTED** Not Determined (kBtu/M/yr)

**BASELINE** 0.0 (kBtu/M/yr)

**GOAL** 0.0 (kBtu/M/yr)

**SAVINGS** CODE EQUIVALENT

**CHALLENGE** 2030 = 100% (Carbon Neutral), 2025 = 80%, 2020 = 50%, 2005 = 70%, 2004 = 60% (Architecture 2030 Challenge)

**GENERAL INPUTS** | BUILDING ENVELOPE

\* AIA 2030 Commitment Required Input Fields

**1. Input Building Specifications** [Save]

Note: Basic General Inputs are required to be saved before Building Envelope and HVAC Systems screens can be accessed

Project Name #: 000 | Project ID #: PGNHEI575391728

Project Category #: Non-Residential | Country #: United States of America

Construction Type #: New Construction | State/Province #: Minnesota

Year of Occupancy: 2019 | Zip/Postal Code #: 55105

Reporting Year #: 2019 | City: Saint Paul

Office Location: Cedar Rapids, IA, United States of America | Climate Zone: 8A Cold - Humid

Project Phase #: Concept | Target Certification: Select all that Apply

Use Types #: Education - K-12 School | Area (GSF): 100000 | Total: 100.0K

Available? (Zero Tool)	BASELINE (National Avg) (kBtu/M/yr)	GOAL (2030 Challenge) (kBtu/M/yr)	LPD Baseline (ASHRAE 90.1-2007) (W/ft)
	75	22.5	1.20
<b>WEIGHTED</b>	<b>75.0</b>	<b>22.5</b>	<b>1.20</b>

**SECTION 1: Input Building Specifications**

**Climate Zone is automatically populated from location inputs.**

Baseline and Goal are automatically populated using national average data (2003 CBECS).

**I. Input Building Specifications** Save

Note: Basic General Inputs are required to be saved before Building Envelope and HVAC Systems screens can be accessed

Project Name \*  Project ID \* POKKEI578245524

Project Category \* Non-Residential Country \* United States of America

Construction Type \* Select Construction Type State/Province \* Select

Year of Occupancy 2020 Zip/Postal Code \*

Reporting Year \* 2019 City

Office Location Philadelphia, PA, United States of Ame Climate Zone Please select

Project Phase \* Please select Target Certification Select all that Apply

Use Types \*  Area (GSF)  Total: 0

Available ? [Zero Tool]	BASELINE [National Avg.] kBtu/sf/yr	GOAL [2030 Challenge] kBtu/sf/yr	LPD Baseline [ASHRAE 90.1-2007] W/sf
WEIGHTED			

Reporting Year \* 2019 City

Office Location Philadelphia, PA, United States of Ame Climate Zone 4A Mixed - Humid

Project Phase \* Construction Administration Target Certification 1 Target Certification Selected

Use Types \* Courthouse Area (GSF) 100000 Total: 100.OK

Available ? [Zero Tool]	BASELINE [National Avg.] kBtu/sf/yr	GOAL [2030 Challenge] kBtu/sf/yr	LPD Baseline [ASHRAE 90.1-2007] W/sf
	118	35.4	1.20
WEIGHTED			
	118.0	35.4	1.20

Project ID \* POKKEI578245524

Country \* United States of America

State/Province \* Pennsylvania

Zip/Postal Code \* 19130

City

Climate Zone 4A Mixed - Humid

Target Certification 1 Target Certification Selected



## SECTION 1: Input Building Specifications

**The project category you select changes the inputs available in subsequent sections.**

### **Residential + non-residential projects**

- Predicted Energy Use Intensity (pEUI) is used to describe the project's energy performance
- Each use type has an associated Energy Use Intensity (EUI) based on the national average for that use type.
- The 2030 Commitment uses the 2003 CBECS database to define the national average.
- EUI is defined as energy/area, measured in kBtu/sf/yr

### **Interiors projects**

- Lighting power density (LPD) is used to describe the project's energy performance
- Each use type has an Lighting Power Density (LPD) baseline.
- The 2030 Commitment uses ASHRAE 90.12007 to define the LPD baseline for each use type.
- LPD is defined as lighting power to be installed/area, measured in watts/sf

**SECTION 2: Energy analysis**

*Residential and non-residential*

**For residential and non-residential projects, indicate whether the project has an energy model, will have an energy model, or will not be modeled**

Pick the relevant energy code for the project.

**2. Energy Analysis**

Status of Energy Model \*    
 Design Energy Code \*    
can't be blank

Energy Use Data will be collected

Responsible Party    
 Energy Modeling Tool \*    
 Time Spent On Energy Modeling    
 Energy Modeling Cost (Phase) \$    
Total (All Phases) = \$ 0   
 Annual Energy Cost Savings \$

**Design Energy and Emissions Inputs**

---

**2. Energy Analysis**

Status of Energy Model \*    
 Design Energy Code \*

Energy Use Data will be collected

Responsible Party    
 Energy Modeling Tool

---

**2. Energy Analysis**

Status of Energy Model \*    
 Design Energy Code \*

Energy Use Data will be collected



**SECTION 3: Baseline & Target Energy Use Intensity**

*Interior only*

\* AIA 2030 Commitment Required Input Fields

**1. Input Building Specifications** Save

Note: Basic General Inputs are required to be saved before Building Envelope and HVAC Systems screens can be accessed

Project Name \*  Project ID \*

Project Category \* Interior Only Country \*

---

**2. Energy Analysis**

Energy Analysis is not available for Interiors Only projects at this time.

---

**3. Baseline & Target Energy Use Intensity**

Design Energy Code

Was the LPD calculated?

Define Baseline \* ASHRAE 90.1-2007

Default

Space by Space

<b>BASELINE</b>	<b>GOAL *</b>	<b>PREDICTED LPD *</b>
<input type="text" value="Watts/sf"/>	<input type="text"/>	<input style="border: 2px solid blue;" type="text" value="Enter"/>
		[Predicted LPD]

**When the Project Category is “Interior Only” the inputs for “Section 3: Baseline & Target Energy Use Intensity” change.**

- **Design Energy Code:** select relevant energy code from drop down menu
- **Was the LPD calculated?** select yes or no
- **Define Baseline**
  - Default (Building Area Method as defined by ASHRAE 90.1)
  - Space by Space (Space-by-Space Method as defined by ASHRAE 90.1)
- **Goal**
  - Automatically populates from baseline
  - 25% reduction from ASHRAE 90.1-2007

**SECTION 4: Additional inputs**

**Track additional data that's meaningful to you.**

- Lighting power density
- Window to wall ratio
- ASHRAE 90.1 Appendix G Baseline Energy Model
- Renewables
- Basic embodied carbon
- Occupancy sensor
- Daylighting sensors
- Water

**4. Additional Inputs**

---

Lighting Power Density	0.8	Watts/sf	Occupancy Sensor Included?	<input checked="" type="checkbox"/>
Window to Wall Ratio %	25.0		Daylighting Sensors Included?	<input checked="" type="checkbox"/>
ASHRAE 90.1 Appendix G Baseline Energy Model	200	kBtu/sf/yr	Water	<input checked="" type="checkbox"/>
Renewables	Select all that Apply ▼		Reduction in potable water per LEED 2009 WE p1?	<input checked="" type="checkbox"/>
			Only non-potable water used for irrigation (or no irrigation)?	<input checked="" type="checkbox"/>
			Will any water be collected for reuse?	<input type="checkbox"/>

---

# Tips for international projects

The default baselines for projects outside the US and Canada are derived from CBECS 2003 National Average.

For a more accurate baseline, reference [EDGE Tool](#).

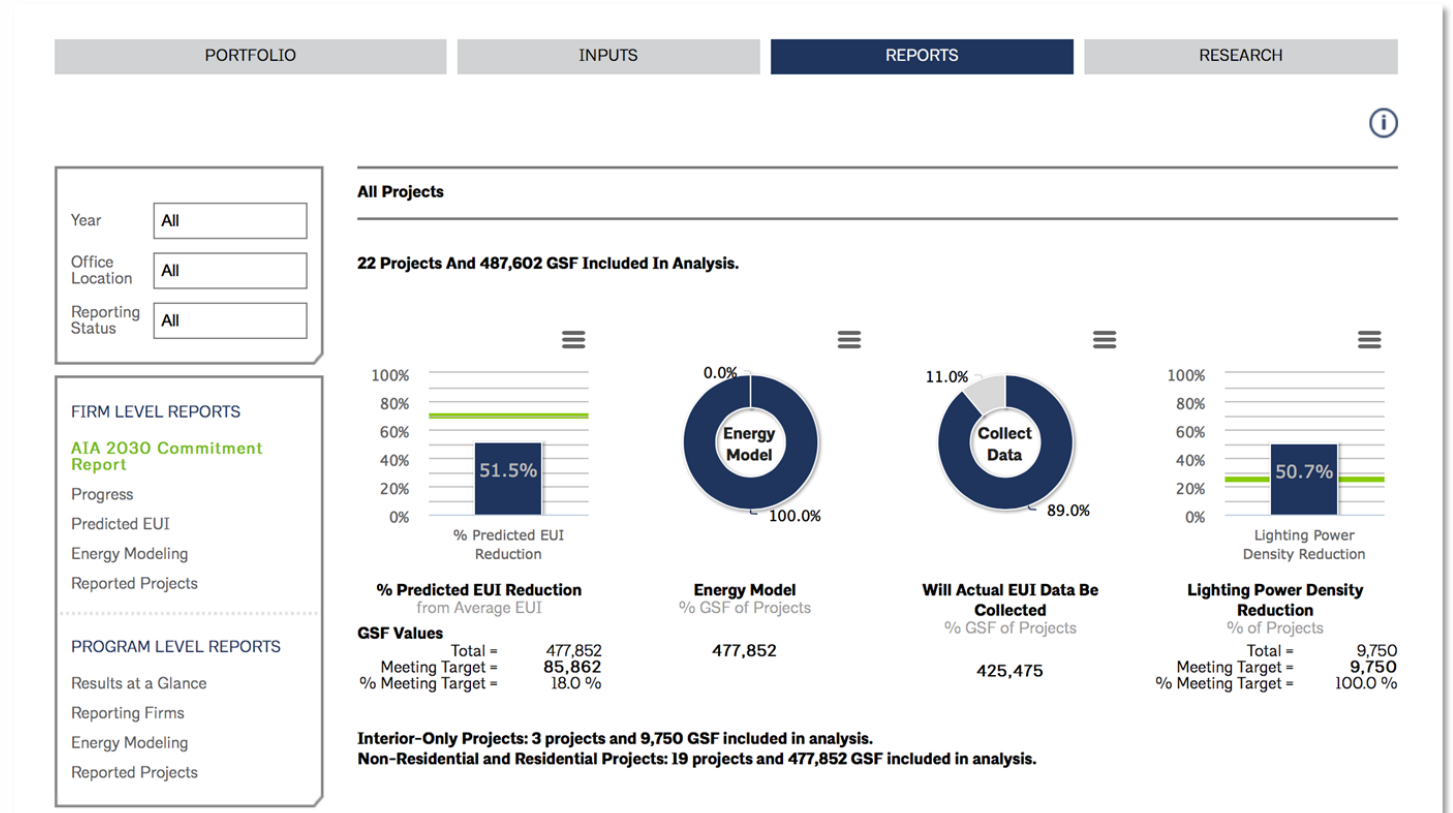
# Tips for special use cases

Some use types are more challenging than others. Here are a few tips to setting meaningful baselines.

- **Parking.** DDx allows you to track Parking, but it can't be the first use type entered or the majority use type.
- **Data centers.** DDx determines data center baselines using a coefficient and your GSF. For a more accurate baseline, reference [Zero Tool](#) and log your baseline in DDx by selecting "Other."
- **Labs.** The DDx default baseline for labs is 370 kBtu/sf/yr. For a more accurate baseline, reference [Laboratory Benchmarking Tool](#) and log your baseline in DDx by selecting "Other."

# Make your data work for you

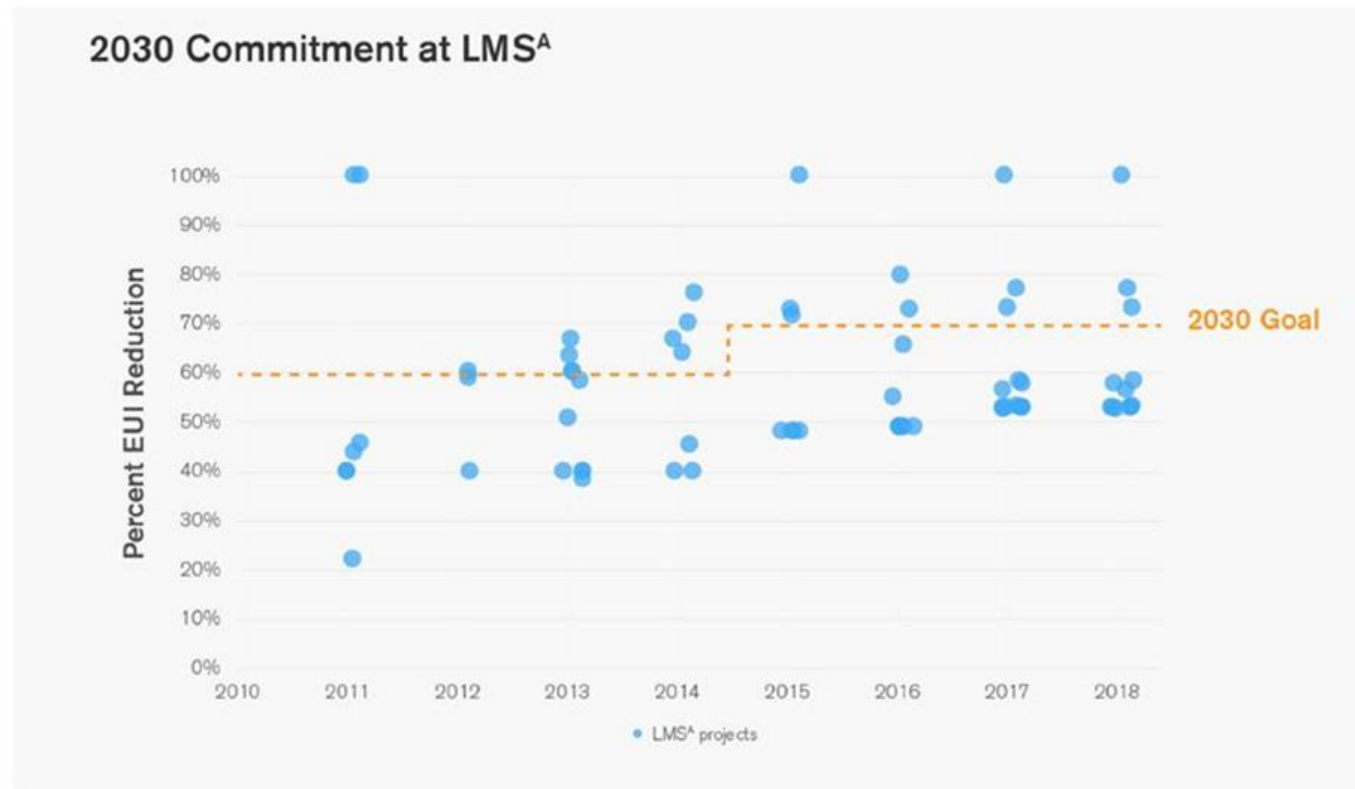
Use the reports to access quick insights into your company's performance.





**Export data from DDX to create charts and graphs that help you improve your company's annual performance.**

Leddy Maytum Stacy Architects, a San Francisco-based firm and AIA Firm Award recipient, publishes their year over year data.

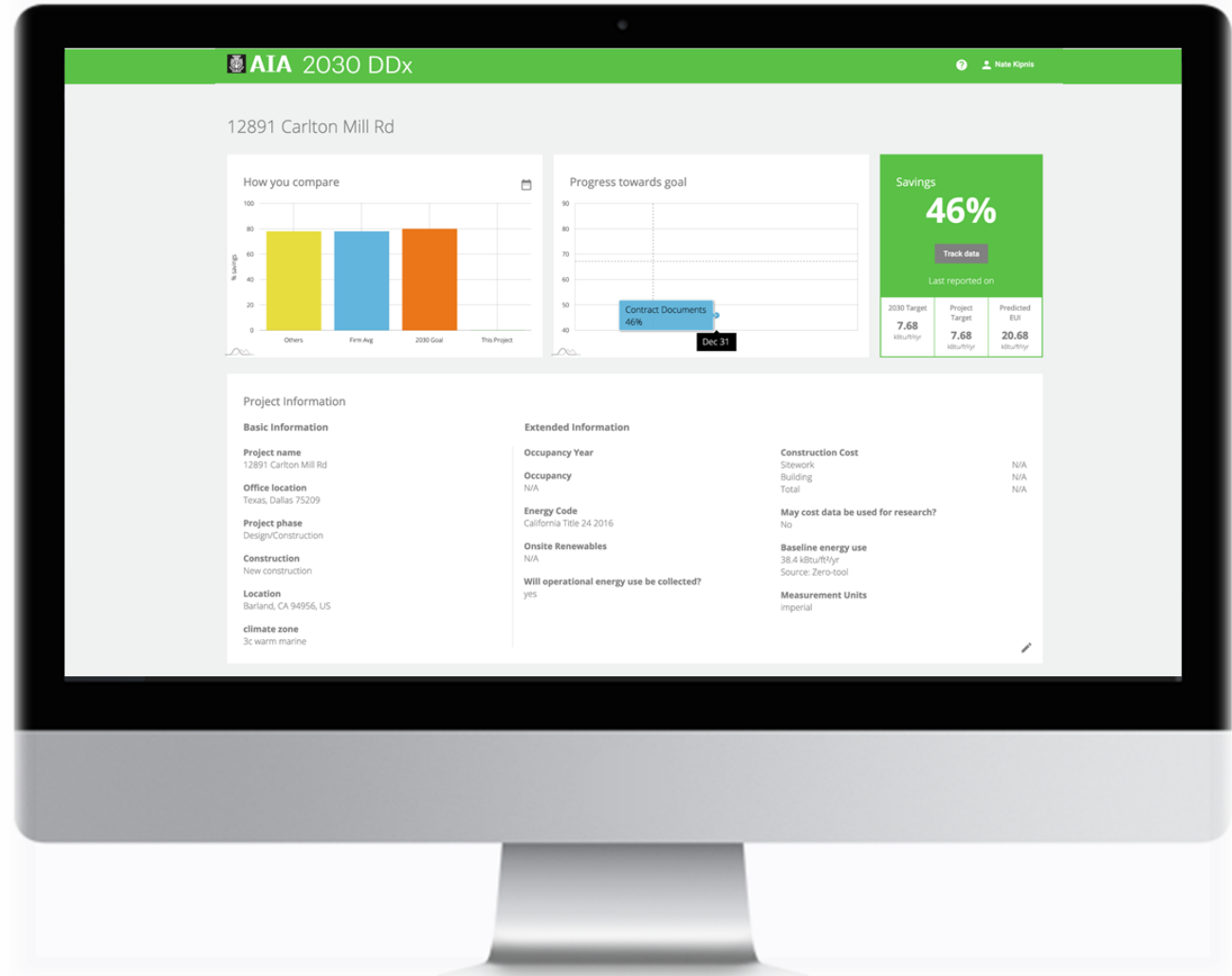


Source: "Scaling High Performance in an Era of Climate Urgency", Leddy Maytum Stacy Architects, <https://www.lmsarch.com/studio/stories/research/scaling-high-performance-era-climate-urgency>

# Coming soon!

**We're upgrading the DDx in 2020 with a new user interface and more flexibility for teams.**

Test drive the beta at  
[beta2030ddx.aia.org](https://beta2030ddx.aia.org)



# Beyond zero

with the Framework for Design Excellence

# AIA Framework for Design Excellence



**Design for integration**



**Design for energy**



**Design for equitable communities**



**Design for well-being**



**Design for ecosystems**



**Design for resources**



**Design for water**



**Design for change**

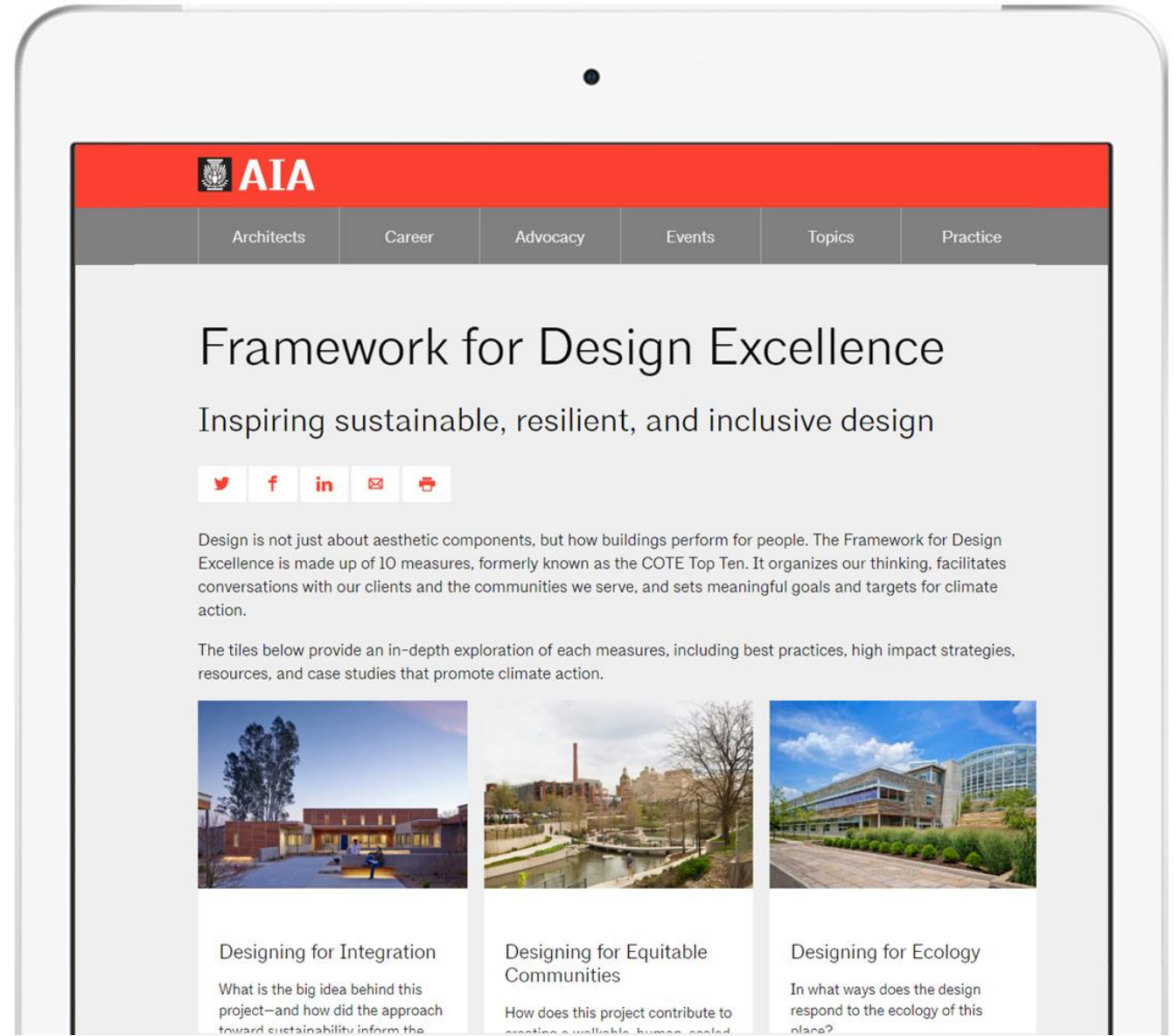


**Design for economy**



**Design for discovery**

You can learn more about each principle by exploring the tiles associated with them on the **Framework for Design Excellence** webpage, as well as the **COTE® Super Spreadsheet**.



**Each tile includes a description of the principle and focus topics.**

Click on each of the tabs to explore:

- best practices
- high impact design strategies
- resources to learn more, and
- exemplary project case studies.

WITH LECTURES, CULINARY EVENTS, OUTDOOR MOVIES, MUSICAL PERFORMANCES, AND A WEEKLY FARMER'S MARKET, PEARL HAS BECOME A VIBRANT DESTINATION IN SAN ANTONIO, APPEALING TO LOCAL RESIDENTS IN A WAY THE MORE TOURIST-ORIENTED DOWNTOWN RIVERWALK DOES NOT.

**Focus topics**

- walkability/human scale/alternative transportation
- social equity
- community engagement and buy-in

[Return to the toolkit >](#)  
[AIA COTE® Top Ten >](#)

Sustainability is inextricably tied to the wellness of communities. Describe specifically how community members, inside and outside the building, benefit from the project. How does this project contribute to creating a walkable, human-scaled community inside and outside the property lines? How were community members engaged during the design and development process? How does the project promote social equity at local, regional, and global scales? Also, transportation-related emissions negatively affect public health. Because the CO<sub>2</sub> emissions associated with how a building's occupants travel to and from the building are frequently comparable to the CO<sub>2</sub> emissions associated with operating the building, describe how the project, by its siting and operations, helps reduce transportation-related emissions.

Best practices | High impact | Resources | Projects

An aerial photograph of a cityscape. The central focus is a modern skyscraper with a glass facade and a dark, flat canopy on top. To its left is a large, older brick building with a grid of windows. To its right is another brick building with a stepped top. The foreground is filled with green trees. The sky is clear and blue.

# Design for integration

Edith Green Wendell Wyatt Modernization  
Portland, OR, USA  
Sera Architects

# Design for integration

- **COTE® Design DataMap**
- **Qualities of Resilience**
- **Resilience & Adaptation Online Certificate series**
  - Course 5: Conducting Vulnerability Assessments
  
- **How to integrate resilience into practice**
- **Sustainable Justice 2030: Green Guide to Justice**
- **Sustainable Justice Guidelines**





# Design for equitable communities

Bushwick Inlet Park  
Brooklyn, NY, USA  
Kiss + Cathcart

# Design for equitable communities

- **AIA Equity Guides**
- **Communities by Design (CxD)**
  - SDAT
  - R/UDAT
- **New Urban Agenda (NUA)**
- **Blueprint for Better**
  
- **Resilience & Adaptation Online Certificate series**
  - Course 9: Community Design and Engagement for Resilience

A photograph of a modern building with a wooden facade and a large glass structure, surrounded by a landscaped area with grasses and shrubs. The building features a prominent wooden exterior and a large glass structure on the right side. The foreground shows a paved walkway and a landscaped area with various plants and shrubs. The sky is blue with scattered white clouds.

# Design for ecosystems

Center for Sustainable Landscapes  
Pittsburgh, PA, USA  
The Design Alliance Architects



# Design for water

Bullitt Center  
Seattle, WA, USA  
The Miller Hull Partnership

# Design for water

- **Resilience & Adaptation Online Certificate series**
- **Hazard Mitigation Design Resources**
- **Climate Change Adaptation Design Resources**
- **Drylands Resilience Initiative**

# Design for economy

Clock Shadow Buildings  
Milwaukee, WI, USA  
Continuum Architects + Planners

# Design for economy

- **Resilience & Adaptation Online Certificate series**
  - Course 8: Professional Risk and the Business Case for Resilience
- **Modular and Off-Site Construction Guide**
- **Firm survey**
- **ABI/ GABI**
- **Consensus Construction Forecast**
- **Client Survey**
- **Home Design Trends Survey**
- **Architects Guide to Business Continuity**



# Design for energy

West Branch of the Berkeley Public Library  
Berkeley, CA, USA  
Ledy Maytum Stacy Architects



# Design for energy

- **2030 Commitment**
- **Firm commitment to zero energy by 2030**
- **Design Data Exchange (DDx)**
- **2030 By the Numbers (annual report)**
- **AIA + 2030 Education series**
- **Architect's Guide to Building Performance**
- **Leveraging Energy Benchmarking whitepaper**
- **Deep Energy Retrofits Guide**
- **Resilience & Adaptation Online Certificate series**

# Design for well-being

A photograph of the University of Wyoming Visual Arts Facility. The building is a modern, multi-story structure with a mix of materials including light-colored stone, concrete, and large glass windows. It features several prominent vertical metal ducts on the roof and a covered walkway on the ground level. In the foreground, a paved path winds through a landscaped area with young trees and grass. A person is riding a bicycle on the path, and two other people are walking nearby. The sky is clear and blue.

University of Wyoming - Visual Arts Facility  
Laramie, WY, USA  
Hacker

# Design for well-being

- **Design and Health Research Consortium**
- **Joint Call to Action to Promote Healthy Communities**
  - Conversation guides
  - Call to action
- **AIAU Designing for Health series**
- **Healthier Materials Protocol**
- **Safety Assessment Program Training**
- **Knowledge Repository**
- **AAH Case Studies**
- **Design for Aging POE Toolkit**

# Design for resources

Gateway Center - SUNY-ESF College of Environmental Science & Forestry  
Syracuse, NY, USA  
Architerra

ESF State University of New York  
College of Environmental Science and Forestry

# Design for resources

- **Healthier Materials Protocol**
- **AIAU Materials Matter Online Certificate series**
- **Resilience & Adaptation Online Certificate series**
- **AIA NY Zero Waste Design Guidelines**
- **Buildings That Last: Designing for Adaptability, Deconstruction, and Reuse**



# Design for change

NOAA Daniel K. Inouye Regional Center  
Honolulu, HI, USA  
HOK

# Design for change

- **Modular and Off-site Construction Guide**
- **Disaster Assistance Handbook**
- **Resilience & Adaptation Online Certificate series**
- **Building Industry Statement on Resilience**
- **Hazard Mitigation Design Resources**
  
- **Climate Change Adaptation Design Resources**
- **Community Resilience Design Resources**
- **Buildings That Last: Designing for Adaptability, Deconstruction, and Reuse**

# Design for discovery



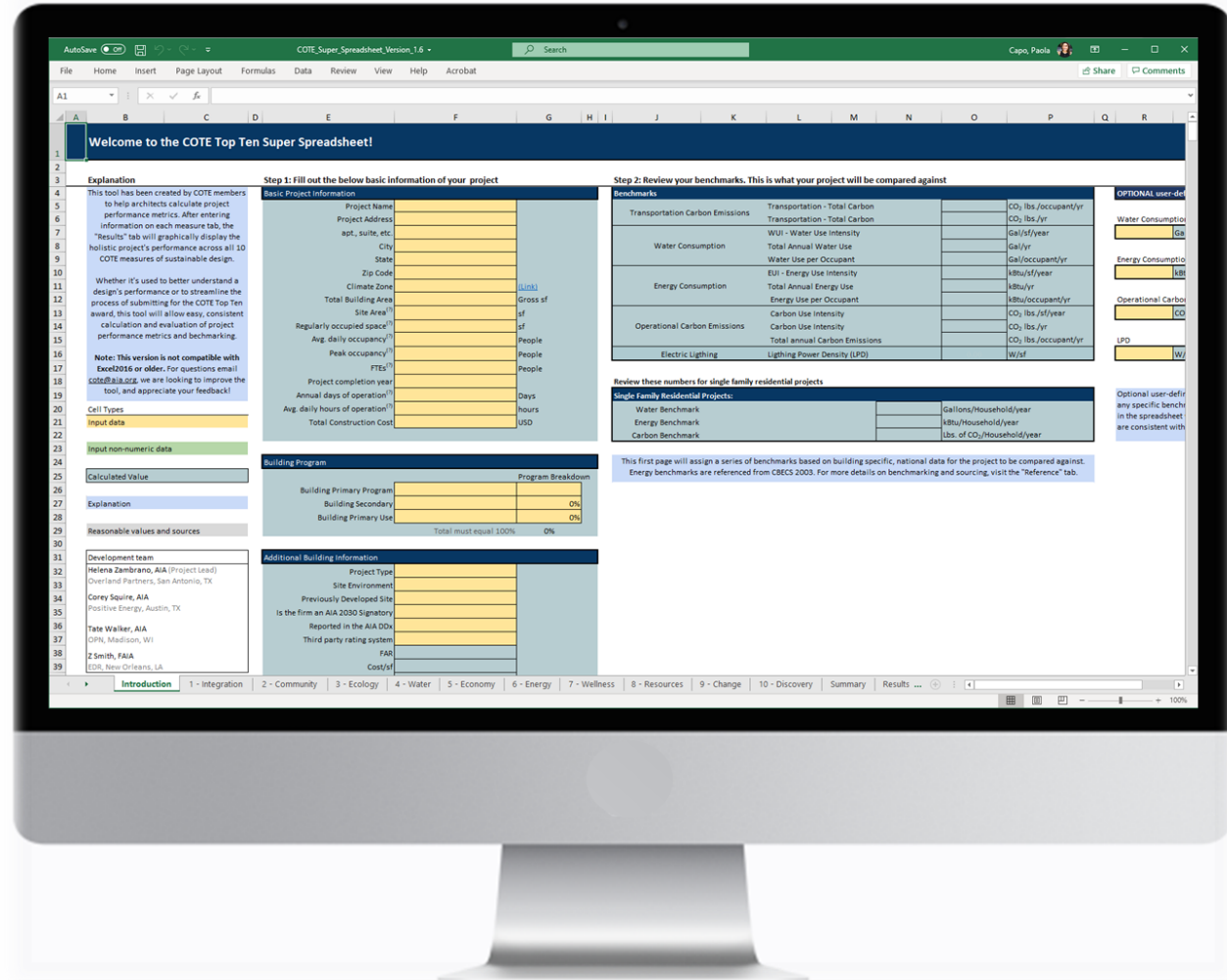
Discovery Elementary School  
Arlington, VA, USA  
VMDO Architects



# Design for discovery

- Design Data Exchange (DDx)
- BRIK
- Design for Aging POE Toolkit
- *POE toolkit development (coming soon)*

Use the **COTE® Top Ten Super Spreadsheet** to dive deeper into the metrics associated with each of the ten principles.



Explore each measure using the tabs at the bottom of the spreadsheet

**Measure 2 - Design for Community**

Explanation	Definition: Enter your value into the adjacent cell	Desirable Range	Source																									
<p><b>1 - Walk Score</b></p> <p>WalkScore.com generates a score for walkability and community resources for any address in the US. The higher the score, the more pedestrian friendly the site.</p> <p>Based on "America's Index of Social Engagement", how much say did the community have during the design and construction process?</p>	<p>www.walkscore.com <input type="text" value="90"/></p>	<p>10% - 25% Car Dependent 25% - 50% Mostly Car Dependent 50% - 75% Somewhat Walkable 75% - 90% Very Walkable 90% - 100% Walker's Paradise</p>	Walk Score Methodology																									
<p><b>2 - Community Engagement</b></p> <p>The number of occupants commuting by any means other than single occupancy vehicle on any given day includes walking, cycling, public transit, etc.</p>	<p>Community Engagement Level: <input type="text" value="4: Consultation"/></p>	<p>Poor Baseline Better Best</p> <p>Many-iteration, Theory Informed, Consultation Partnership, Delegation Citizen Control</p>	America's Index of Social Engagement																									
<p><b>3 - Percent of Occupants Commuting by Alternative Transportation</b></p> <p>The simple calculator compares your project's commuting patterns to published national averages. Use a survey (or an estimated guess) to determine average commuting distance and average mpg of the building's occupants.</p> <p>If no information is available, use the baseline (US national average). Though its designed for office projects, the calculator can produce good results for all building types that...</p>	<p>Occupancy Type: <input type="text" value="1733"/> Number of occupants commuting by alternative transportation (avg.): <input type="text" value="15"/> Percent Alternative Commuter: <input 1"="" type="text" value="25%&lt;/input&gt;&lt;/p&gt; &lt;/td&gt; &lt;td&gt; &lt;p&gt;below average&lt;br/&gt;national average&lt;br/&gt;above average&lt;br/&gt;ex. New York City&lt;br/&gt;ex. Manhattan&lt;/p&gt; &lt;p&gt;0% - 25%&lt;br/&gt;25%&lt;br/&gt;25% - 100%&lt;br/&gt;14%&lt;br/&gt;94%&lt;/p&gt; &lt;/td&gt; &lt;td&gt; &lt;p&gt;2018 Census, Community Justice&lt;br/&gt;NY State Transportation Campaign&lt;/p&gt; &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt; &lt;p&gt;&lt;b&gt;4 - Single Transportation Carbon Footprint&lt;/b&gt;&lt;/p&gt; &lt;p&gt;Determine the number of parking spaces that are required on site by local zoning code. This number is compared to the actual number of spaces provided.&lt;/p&gt; &lt;/td&gt; &lt;td&gt; &lt;table border="/> <thead> <tr> <th></th> <th>Proposed</th> <th>Baseline</th> </tr> </thead> <tbody> <tr> <td>Percent of occupants commuting by single occupancy vehicle</td> <td>74%</td> <td>74% Weekly Avg</td> </tr> <tr> <td>Average daily commute (round trip distance)</td> <td>5</td> <td>28 Miles</td> </tr> <tr> <td>Days commuting per week</td> <td>5</td> <td>5 Days</td> </tr> <tr> <td>Miles commuting per year</td> <td>50</td> <td>50 weeks</td> </tr> <tr> <td>Average Car mpg</td> <td>30</td> <td>22.8 mpg</td> </tr> <tr> <td>Average CO<sub>2</sub> / Gallon of Gasoline</td> <td>19.6</td> <td>19.6 lbs. CO<sub>2</sub>/Gall</td> </tr> <tr> <td>Lbs. of carbon dioxide emitted/occupant/year</td> <td>1,027</td> <td>440?</td> </tr> <tr> <td>% reduction over the baseline</td> <td>57.1%</td> <td></td> </tr> </tbody> </p>		Proposed	Baseline	Percent of occupants commuting by single occupancy vehicle	74%	74% Weekly Avg	Average daily commute (round trip distance)	5	28 Miles	Days commuting per week	5	5 Days	Miles commuting per year	50	50 weeks	Average Car mpg	30	22.8 mpg	Average CO <sub>2</sub> / Gallon of Gasoline	19.6	19.6 lbs. CO <sub>2</sub> /Gall	Lbs. of carbon dioxide emitted/occupant/year	1,027	440?	% reduction over the baseline	57.1%	
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 Use of CO<sub>2</sub>/Occupant  >4000 Baseline 3000-4000 Getting there 2000-3000 Better 1000-2000 High Performing 0-1000 Very High Performing | | Reference Value                            | Unit                              | Source                  | |--|-----------------------------------|-------------------------| | Average car fuel economy                   | 22.4 mpg                          | EPA - 2017 Report       | | Average CO <sub>2</sub> emitted per gallon | 19.6 lbs. CO <sub>2</sub> /gallon | EPA - Vehicle Emissions | | Average one-way commute                    | 1.7 Miles                         | 2018 Census             | | Share of single occupancy commute          | 74%                               | 2018 Census             | | Average commuting days                     | 250 days/year                     | 5 days *50 weeks        |   \*Please use reference values, not regional values || **5 - Parking Space Reduction**  Record the number of bike racks and commuter showers provided for building occupants. | Required On-site parking spaces:  Provided on-site parking spaces:  Parking Space Reduction:  Number of bike racks:  Number of showers:  Bike racks installed for:  Showers installed for: | Bike Racks: Commuter Showers  10% - Good 25% - Better 50% - Best  1% - Good 25% - Better 5% - Best |  |

Introduction | **2 - Community** | 3 - Ecology | 4 - Water | 5 - Economy | 6 - Energy | 7 - Wellness | 8 - Resources | 9 - Change | 10 - Discovery | Summary | Results | Reference Information

Each measure has instructions to help you navigate each metric.

### Measure 2 - Design for Community

**Explanations**

1 - Walk Score  
Walkscore.com generates a score for walkability and community resources for any address in the US. The higher the score, the more pedestrian friendly the site.

2 - Community Engagement  
Based on "Armstein's Ladder of Social Engagement", how much say did the community have during the design and construction process?

3 - Percent of occupants commuting by alternative transportation  
The number of occupants commuting by any means other than single occupancy vehicle on any given day, includes walking, cycling, public transit, etc.

4 - Simple Transportation Carbon Calculator  
This simple calculator compares your project's commuting patterns to published national averages. Use a survey (or an educated guess) to determine average commuting distance and average mpg of the building's occupants. If no information is available, use the baseline (US national average). Though its designed for office projects, the calculator can produce good results for all building types.

5 - Parking Space Reduction  
Determine the number of parking spaces that are required on site by local zoning code. This number is compared to the actual number of spaces provided.

6 - Bicycle Infrastructure  
Record the number of bike racks and commuters showers provided for building occupants.

**1 - Walk Score**  
Instructions: Enter your address into the website.  
www.walkscore.com 90

**2 - Community Engagement**  
Community Engagement Level: Consultation

**3 - Percent of occupants commuting by alternative transportation**  
Occupancy type: FTES  
Number of occupants commuting by alternative transportation (avg): 15  
Percent Alternative Commuters: 25%

**4 - Simple Transportation Carbon Calculator**

	Proposed	Baseline
Percent of occupants commuting by single occupancy vehicle	75%	75% Weekly Avg.
Average daily commute (round trip distance)	15	26 Miles
Days commuting per week	5	5 Days
Weeks commuting per year	50	50 weeks
Average Car mpg	30	21.6 mpg
Average CO <sub>2</sub> / gallon of gasoline	19.8	19.8 lbs. CO <sub>2</sub> /gal
lbs. of carbon dioxide emitted/occupant/year	1,225	4,483
% reduction over the baseline	72.7%	

**5 - Parking Space Reduction**

Required on-site parking spaces	27.5
Provided on-site parking spaces	4
Parking Space Reduction	86%

**6 - Bicycle Infrastructure**

Occupancy type	FTES
Number of bike racks	15
Number of showers	2
Bike racks installed for	21% FTES
Showers installed for	2.8% FTES

**Assessable Range**

0% - 25% Car Dependent  
25% - 50% Mostly Car Dependent  
50% - 70% Somewhat Walkable  
70% - 80% Very Walkable  
80% - 100% Walker's Paradise

Poor  
Baseline  
Better  
Best

Manipulation, Therapy  
Informing, Consultation  
Partnership, Delegation  
Citizen Control

Below average 0% - 25%  
National average 25%  
Above average 25% - 100%  
ex. New York City 74%  
ex. Manhattan 94%

lbs. of CO<sub>2</sub>/Occupant

>4000 Baseline  
3000 - 4000 Getting there  
2000 - 3000 Better  
1000 - 2000 High Performing  
0 - 1000 Very High Performing

90% Reduction Poor  
0% Reduction Baseline  
25% Reduction Getting there  
50% Reduction Better  
75% Reduction High Performing  
100% Reduction Very High Performing

Bike Racks  
Commuter Showers

10% - Good  
25% - Better  
50% - Best

1% - Good  
25% - Better  
5% - Best

**Sources**

WalkScore Methodology

Armstein's Ladder of Citizen Participation

2018 Census, Community Survey  
Tri-State Transportation Campaign

Reference Value	Unit	Source
Average car fuel economy	21.6 mpg	EPA - 2017 Report
Average CO <sub>2</sub> emitted per gallon	19.8 lbs. CO <sub>2</sub> /gallon	EPA - Vehicle Emissions
Average one-way commute	13 Miles	2018 Census
Share of single occupancy commutes	74%	2018 Census
Average commuting days	250 days/year	5 days * 50 weeks

\*Please use reference values, not negative values

**Input your project's corresponding value for each metric.**

### Measure 2 - Design for Community

**Explanations:**

**1 - Walk Score**  
WalkScore.com generates a score for walkability and community resources for any address in the US. The higher the score, the more pedestrian friendly the site.

**2 - Community Engagement**  
Based on "Armstein's Ladder of Social Engagement", how much say did the community have during the design and construction process?

**3 - Percentage of occupants commuting by alternative transportation**  
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**4 - Simple Transportation Carbon Calculator**  
This simple calculator compares your project's commuting patterns to published national averages. Use a survey (or an educated guess) to determine average commuting distance and average mpg of the building's occupants. If no information is available, use the baseline (US national average). Though its designed for office projects, the calculator can produce good results for all buildings that have a high density of occupants.

**5 - Parking Space Reduction**  
Determine the number of parking spaces that are required on site by local zoning code. This number is compared to the actual number of spaces provided.

**6 - Bicycle Infrastructure**  
Record the number of bike racks and commuter showers provided for building occupants.

**Calculators: Enter your values into the yellow cells**

**1 - Walk Score**  
www.walkscore.com

**2 - Community Engagement**  
Community Engagement Level:

**3 - Percentage of occupants commuting by alternative transportation**  
Occupancy type:   
Number of occupants commuting by alternative transportation (avg.):   
Percent Alternative Commuters:

**4 - Simple Transportation Carbon Calculator**

	Proposed	Baseline
Percent of occupants commuting by single occupancy vehicle	79%	76% Weekly Avg.
Average daily commute (round trip distance)	15	26 Miles
Days commuting per week	5	5 Days
Weeks commuting per year	50	50 weeks
Average Car mpg	30	21.6 mpg
Average CO <sub>2</sub> / Gallon of Gasoline	19.6	19.6 lbs. CO <sub>2</sub> /Gal
lbs. of carbon dioxide emitted/occupant/year	1,925	4,283
% reduction over the baseline	57.1%	

**5 - Parking Space Reduction**  
Required on-site parking spaces:   
Provided on-site parking spaces:   
Parking Space Reduction:

**6 - Bicycle Infrastructure**  
Occupancy type:   
Number of Bike Racks:   
Number of Showers:   
Bike Racks installed for:   
Showers installed for:

**Measurable Range**

0% - 25%	Car Dependent
26% - 50%	Mostly Car Dependent
51% - 75%	Somewhat Walkable
76% - 90%	Very Walkable
91% - 100%	Walker's Paradise

**Performance**

Poor	Manipulation, Therapy
Baseline	Informing, Consultation
Better	Partnership, Delegation
Best	Citizen Control

**Performance**

Below Average	0% - 20%
National Average	21%
Above Average	25% - 100%
NY - New York City	74%
NY - Manhattan	84%

**Performance**

4000	Baseline
3000 - 4000	Getting there
2000 - 3000	Better
1000 - 2000	High Performing
0 - 1000	Very High Performing

**Performance**

0% Reduction	Poor
0% Reduction	Baseline
25% Reduction	Getting there
50% Reduction	Better
75% Reduction	High Performing
100% Reduction	Very High Performing

**Performance**

Bike Racks	Commuter Showers
------------	------------------

**Performance**

10% - Good	1% - Good
25% - Better	25% - Better
50% - Best	5% - Best

**Source**

WalkScore Methodology

Armstein's Ladder of Citizen Participation

2018 Census, Community Survey  
TVA State Transportation Campaign

Reference Values

	Unit	Source
Average car fuel economy	21.6 mpg	EPA - 2017 Report
Average CO <sub>2</sub> emitted per gallon	19.6 lbs. CO <sub>2</sub> /gallon	EPA - Vehicle Emissions
Average one-way commute	1.5 Miles	2018 Census
Share of single occupancy commutes	7.6%	2018 Census
Average commuting days	250 days/year 5 days * 50 weeks	

\*Please use reference values, not regional values

**Review your benchmarks. This is what your project will be compared against.**

**Measure 2 - Design for Community**

**Explanations**

Walkscore.com generates a score for walkability and community resources for any address in the US. The higher the score, the more pedestrian friendly the site.

Based on "Armstein's Ladder of Social Engagement", how much say did the community have during the design and construction process?

The number of occupants commuting by any means other than single occupancy vehicle on any given day. Includes walking, cycling, public transit, etc.

This simple calculator compares your project's commuting patterns to published national averages. Use a survey (or an educated guess) to determine average commuting distance and average mpg of the building's occupants.

If no information is available, use the baseline (US national average). Though its designed for office projects, the calculator can produce good results for all buildings that

Determine the number of parking spaces that are required on site by local zoning code. This number is compared to the actual number of spaces provided.

Record the number of bike racks and commuter showers provided for building occupants.

**1 - Walk Score**

Calculation: Enter your address into the web browser

www.walkscore.com

**2 - Community Engagement**

Community Engagement Level

**3 - Percent of occupants commuting by Alternative Transportation**

Occupancy type   
 Number of occupants commuting by alternative transportation (avg)   
 Percent Alternative Commuters

**4 - Simple Transportation Carbon Calculator**

	Proposed	Baseline
Percent of occupants commuting by single occupancy vehicle	79%	79% Weekly Avg.
Average daily commute (round trip distance)	15	26 Miles
Days commuting per week	5	5 Days
Weeks commuting per year	50	50 weeks
Average car mpg	30	21.6 mpg
Average CO <sub>2</sub> / gallon of gasoline	19.6	19.6 lbs. CO <sub>2</sub> /gal
lbs. of carbon dioxide emitted/occupant/year	1,225	4,487
% reduction over the baseline	72.5%	

**5 - Parking Space Reduction**

Required on-site parking spaces   
 Provided on-site parking spaces   
 Parking Space Reduction

**6 - Bicycle Infrastructure**

Occupancy type   
 Number of bike racks   
 Number of showers   
 Bike racks installed for   
 Showers installed for

**Step 2: Review your benchmarks. This is what your project will be compared against**

**Benchmarks**

Category	Sub-category	Value	Unit
Transportation Carbon Emissions	Transportation - Total Carbon	4,483	CO <sub>2</sub> lbs./occupant/yr
	Transportation - Total Carbon	291,269	CO <sub>2</sub> lbs./yr
Water Consumption	WUI - Water Use Intensity	15	Gal./ft <sup>2</sup> /year
	Total Annual Water Use	357,200	Gal./yr
	Water Use per Occupant	5,503	Gal./occupant/yr
Energy Consumption	EUI - Energy Use Intensity	90	kWh/ft <sup>2</sup> /year
	Total Annual Energy Use	2,205,000	kWh/yr
	Energy Use per Occupant	33,923	kWh/occupant/yr
Operational Carbon Emissions	Carbon Use Intensity	26	CO <sub>2</sub> lbs./ft <sup>2</sup> /year
	Carbon Use Intensity	633,921	CO <sub>2</sub> lbs./yr
	Total annual Carbon Emissions	9,753	CO <sub>2</sub> lbs./occupant/yr
Electric Lighting	Lighting Power Density (LPD)	1.00	W/ft <sup>2</sup>

Review these numbers for single family residential projects

**Single Family Residential Projects**

Category	Value	Unit
Water Benchmark		Gallons/Household/year
Energy Benchmark		kWh/Household/year
Carbon Benchmark		lbs. of CO <sub>2</sub> /Household/year

The first page will assign a series of benchmarks based on building specific, national data for the project to be compared against. Energy benchmarks are referenced from CBECS 2003. For more details on benchmarking and sourcing, visit the "Reference" tab.

For further guidance, explore the sections on reasonable ranges and sources.

### Measure 2 - Design for Community

**Explanations**

WalkScore.com generates a score for walkability and community resources for any address in the US. The higher the score, the more pedestrian friendly the site is.

Based on "Armstein's Ladder of Social Engagement", how much say did the community have during the design and construction process?

The number of occupants commuting by any means other than single occupancy vehicle on any given day, includes walking, cycling, public transit, etc.

This simple calculator compares your project's commuting patterns to published national averages. Use a survey (or an educated guess) to determine average commuting distance and average mpg of the building's occupants.

If no information is available, use the baseline (US national average). Though its designed for office projects, the calculator can produce good results for all building types.

Determine the number of parking spaces that are required on site by local zoning code. This number is compared to the actual number of spaces provided.

Record the number of bike racks and commuter showers provided for building occupants.

**Calculations** Enter your values into the yellow cells

1 - Walk Score  
[www.walkscore.com](http://www.walkscore.com)

2 - Community Engagement  
 Community Engagement Level

3 - Percentages of occupants commuting by alternative transportation  
 Occupancy type   
 Number of occupants commuting by alternative transportation (avg.)   
 Percent Alternative Commuters

4 - Simple Transportation Carbon Calculator

	Proposed	Baseline
Percent of occupants commuting by single occupancy vehicle	75%	75% Weekly Avg.
Average daily commute (round trip distance)	15	26 Miles
Days commuting per week	5	5 Days
Weeks commuting per year	50	50 weeks
Average Car mpg	30	21.6 mpg
Average CO <sub>2</sub> / gallon of gasoline	19.6	19.6 lbs. CO <sub>2</sub> /gal
lbs. of carbon dioxide emitted/occupant/year	1,225	4,483
% reduction over the baseline	72.4%	

5 - Parking space reduction

Required on-site parking spaces	37.5
Provided on-site parking spaces	4
Parking Space Reduction	89%

6 - Bicycle Infrastructure

Occupancy type	FTES
Number of bike racks	15
Number of showers	2
Bike racks installed for	21% FTES
Showers installed for	2.8% FTES

**Reasonable Ranges**

0% - 25%	Car Dependent
25% - 50%	Mostly car dependent
50% - 70%	Somewhat walkable
70% - 80%	Very Walkable
80% - 100%	Walker's Paradise

Poor Baseline  
 Better  
 Best!

Manipulation, Therapy  
 Informing, Consultation  
 Partnership, Delegation  
 Citizen Control

Below average  
 National average  
 Above average  
 ex. New York City  
 ex. Manhattan

0% - 23%
~24%
25% - 100%
74%
94%

Lbs. of CO<sub>2</sub>/Occupant

>4000	Baseline
3000 - 4000	Getting there
2000 - 3000	Better
1000 - 2000	High Performing
0 - 1000	Very High Performing

<0% Reduction  
 0% Reduction  
 25% Reduction  
 50% Reduction  
 75% Reduction  
 100% Reduction

Poor  
 Baseline  
 Getting there  
 Better  
 High Performing  
 Very High Performing

Bike Racks  
 Commuter Showers

10% - Good	1% - Good
25% - Better	25% - Better
50% - Best!	5% - Best!

**Sources**

WalkScore Methodology

Armstein's Ladder of Citizen Participation

2016 Census, Community Survey  
 Tri-State Transportation Campaign

Reference Values	Unit	Source
Average car fuel economy	21.6 mpg	EPA - 2017 Report
Average CO <sub>2</sub> emitted per gallon	19.6 lbs. CO <sub>2</sub> /gallon	EPA - Vehicle Emissions
Average one-way commute	13 Miles	2016 Census
Share of single occupancy commutes	76%	2016 Census
Average commuting days	250 days/year	5 days *50 weeks

\*Please use reference values, not regional values

# Lessons

from the field



# Resources

# Resources to improve energy performance

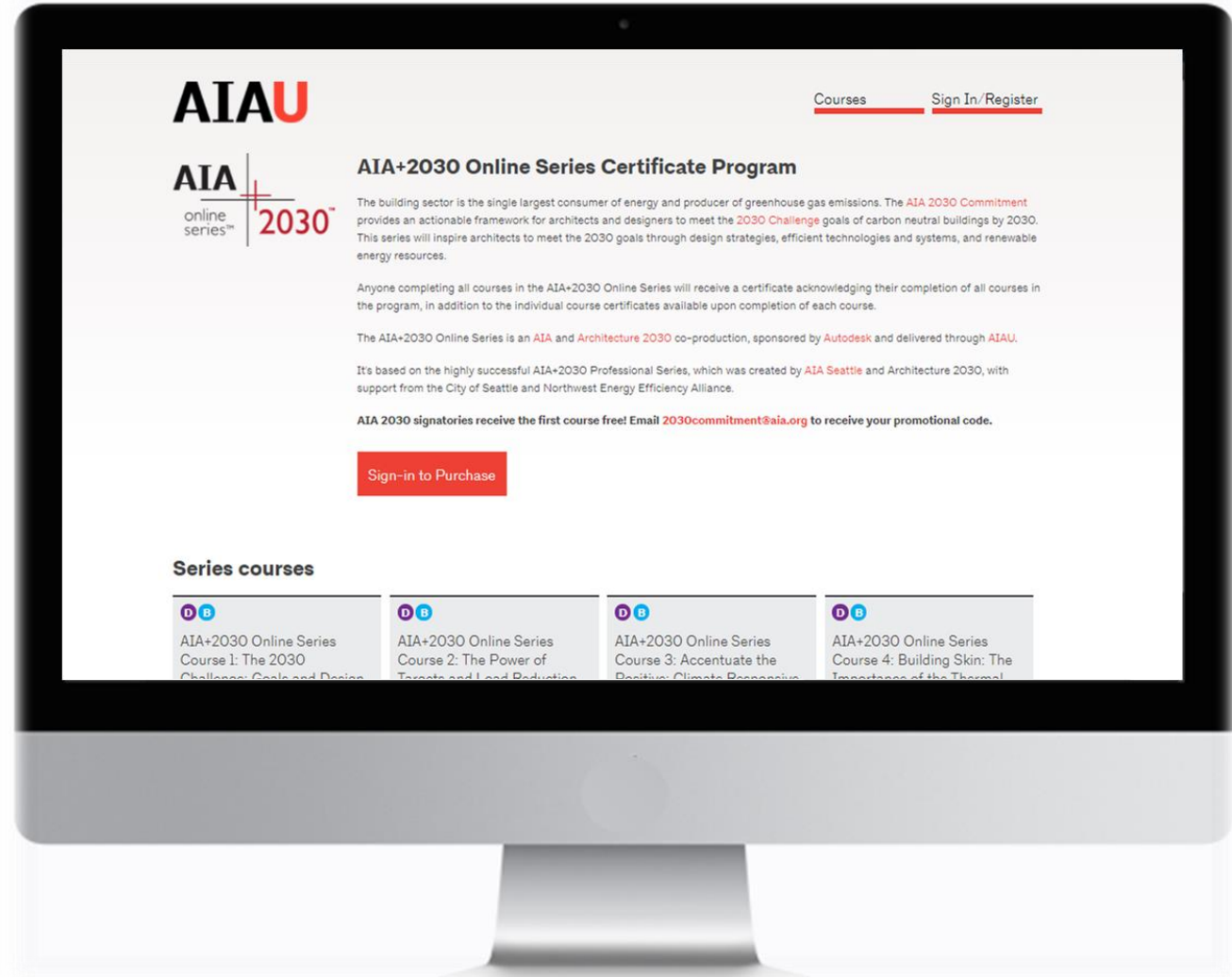
## AIA resources

- [Design Data Exchange](#)
- [AIA 2030 roundtables & peer networks at local chapters](#)
- [AIA Framework for Design Excellence](#)
- [AIA+2030 AIAU Certificate Series](#)
- [Architect's Guide to Building Performance \(2019\)](#)
- [Leveraging Energy Transparency \(2019\)](#)

## Additional resources

- [Zero Tool by Architecture 2030](#)
- [Target Finder by EPA](#)
- [Procedures for Commercial Building Energy Audits by ASHRAE](#)
- [Getting to Zero Database by New Buildings Institute](#)
- [EUI Analyzer by Slipstream](#)

**Explore courses on AIAU  
that focus on how your  
firm can work towards  
the 2030 targets.**





**Architect's Guide to Building Performance is one of many stellar free PDF resources available to AIA members.**

Explore the reach and impact architects like you have through the 2030 Commitment by checking out our reports.



# 2030 WORKING GROUP

Architects have an important role to play in addressing the climate crisis. Last year alone, 2030 Commitment projects created an annual overall energy savings of 17.7 million metric tons of CO<sub>2</sub>e, which is equivalent to parking 3.7 million cars for a year. You're invited to join the AIA Philadelphia Committee on the Environment on the 2nd Monday of each month to learn more about the 2030 Commitment, to share knowledge, and to improve practice.

**2ND MONDAY EACH MONTH  
5:30-7PM  
AIA COTE PHILADELPHIA**  
COST FREE  
RSVP [www.aiaphiladelphia.org](http://www.aiaphiladelphia.org)

**09 DEC GETTING STARTED**  
@ HOK  
One Logan Square  
Suite 1510

**13 JAN DESIGN DATA EXCHANGE**  
@ JACOBS  
2301 CHESTNUT ST

**10 FEB INTERIOR LIGHTING POWER DENSITIES**  
@ FCA  
2000 MARKET ST  
SUITE 600

**09 MAR REPORTING HELP DESK**  
@ NELSON  
100 S INDEPENDENCE MALL WEST  
SUITE 500

**13 APR SUSTAINABLE ACTION PLANS**  
@ BALLINGER  
833 CHESTNUT ST  
SUITE 1400

**11 MAY INTEGRATED DESIGN PROCESS**  
@ DIGSAU  
340 N 12TH ST  
SUITE 421

**AIA Philadelphia**  
**COMMITTEE ON THE ENVIRONMENT PHILADELPHIA**

## AIA Pittsburgh Committee On The Environment

A Chapter of The American Institute of Architects

### 2015 COTE Intensives

Intensives will feature 2-4 speakers who will deliver quality content and case studies.

Each session will be held on Thursday, from 4:30 - 8:30 p.m., and will include a light supper.

Pricing: \$100 per session for AIA members and Industry Partners, or \$120 per session for non-members. Package discounts are available.

Participants will earn 4 AIA CES HSW/LUs and 4 GBCI CE Units per session, or a total of 12 units for the entire series!

For registration and more information visit [aiaappgh.org/aia-programs-events/cote-intensives/](http://aiaappgh.org/aia-programs-events/cote-intensives/).

#### INTENSIVE I

**THE BUSINESS CASE FOR HIGH PERFORMANCE DESIGN**

Presenters: Dr. Robert Sroufe of Duquesne University and Michael Carnahan of Scalco Solar will discuss financial decision-making for evaluating and incorporating sustainable design strategies into projects. The cycle of design, construction, and operation will be considered in order to lend perspective in prioritizing sustainability measures. Case studies will cover financing structures, incentives, and renewable energy strategies.

**Earn 4 AIA CES HSW/LUs and 4 GBCI CE Units.**  
February 12 - Point Park University, Student Center, Room 701/701A, 330 Blvd. of the Allies, Pittsburgh

#### INTENSIVE II

**MANAGING WORKFLOW: A ROADMAP TO HIGH PERFORMANCE DESIGN**

Presenters: Mark Dietrick, Assoc. AIA, of Case Technologies; Rudy Marnich, AIA, and Richard Piacentini of Phillips Conservatory will discuss and identify the appropriate points in the design and construction process to introduce, select, and apply principles of integrated design in order to facilitate, drive, and manage challenging project sustainability goals. Tools and methods will be described, and case studies will include the recently completed Phillips Center for Sustainable Landscapes, which will achieve Living Building Challenge certification in addition to LEED Platinum and SITES Certifications.

**Earn 4 AIA CES HSW/LUs and 4 GBCI CE Units.**  
March 19 - Point Park University, Lawrence Hall Ballroom, 212 Wood Street, Pittsburgh

#### INTENSIVE III

**INNOVATIVE STRATEGIES FOR HIGH PERFORMANCE ENVELOPES**

Presenters: Jeremy Snyder, PE, of Baroflagold; Lisa Adkins, AIA, of Gensler; Rob Hosken, RA, of Building Performance Architecture, and Jeffrey Light, AIA, of MCF will discuss the importance and critical principles in delivering building envelopes that form healthy and efficient spaces. Thermal imaging, simulation, and envelope commissioning will be demonstrated and qualified with case studies as diverse as the ambitious PNC 4 and Passive House buildings.

**Earn 4 AIA CES HSW/LUs and 4 GBCI CE Units.**  
To be held at Build Pittsburgh 2015, AIA Pittsburgh's annual continuing education conference and exhibitor show.

Questions? Visit <http://aiaappgh.org/aia-programs-events/cote-intensives/> or contact COTE Chair, Marc Mondor, AIA LEED Faculty: [marc@evolveEA.com](mailto:marc@evolveEA.com).

**Join—or establish—a local 2030 Roundtable or COTE® group to build a sustainability community in your backyard!**

Learn more at [aia.org/2030Commitment](https://aia.org/2030Commitment)

Or send questions to us directly [2030Commitment@aia.org](mailto:2030Commitment@aia.org).