AIA’s BIG MOVE

THREE ACTIONS:
1. Declare an urgent climate imperative for carbon reduction

2. Transform the day-to-day practice of architects to achieve a zero-carbon, equitable, resilient and healthy built environment

3. Leverage support of our peers, clients, policy makers, and the public at large
AIA’s Efforts

Voluntary AIA 2030 Commitment

Code of Ethics and Professional Conduct

Product Transparency

Resilient Design
AIA 2030 Commitment
What is the 2030 challenge:

- **Today**: 70% Fossil Fuel Energy Consumption
- **2020**: 80% Renewable
- **2025**: 90% Fossil Fuel Energy Consumption
- **2030**: CARBON NEUTRAL

Fossil Fuel Energy Reduction

**The 2030 Challenge**

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*Using no fossil fuel GHG-emitting energy to operate.*
what is reported?

Include all **DESIGN** projects which meet the following criteria:

- **was in an active design phase** during the calendar year (concept, SD, DD, CDs) – **not construction**

- architectural projects whose **scope included HVAC system, lighting or envelope modifications** (new construction or major renovation)

- interiors-only projects which **included lighting design**

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**ASHRAE 90.1-2010 Code** = **40%** Reduction
Energy Use Intensity (PEUI):
Lighting Power Density (LPD):
## What are our EUI Targets?

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>National Average (2003 CBECS)</th>
<th>AIA 2016 Target 70%*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES&amp;T: Higher Ed</td>
<td>120</td>
<td>36</td>
</tr>
<tr>
<td>ES&amp;T: Lab</td>
<td>370</td>
<td>111</td>
</tr>
<tr>
<td>Justice: courthouse</td>
<td>118</td>
<td>35.4</td>
</tr>
<tr>
<td>Justice: prison</td>
<td>90*</td>
<td>27</td>
</tr>
<tr>
<td>Corporate office: 10,000-100,000 sf</td>
<td>90</td>
<td>27</td>
</tr>
<tr>
<td>Corporate office: 100,001+ sf</td>
<td>74</td>
<td>22.2</td>
</tr>
<tr>
<td>Healthcare: clinic</td>
<td>73 - 84</td>
<td>21.9 - 25.2</td>
</tr>
<tr>
<td>Healthcare: inpatient/hospital</td>
<td>227</td>
<td>68.1</td>
</tr>
<tr>
<td>Healthcare: MOB</td>
<td>59</td>
<td>17.7</td>
</tr>
<tr>
<td>Govt office: 10,000-100,000 sf</td>
<td>90</td>
<td>27</td>
</tr>
<tr>
<td>Govt office: 100,001+ sf</td>
<td>74</td>
<td>22.2</td>
</tr>
</tbody>
</table>

*public safety, general
What are our LPD Targets?

<table>
<thead>
<tr>
<th>Facility Type</th>
<th>ASHRAE 90.1-2007 baseline</th>
<th>AIA 2030 target: 25% reduction*</th>
</tr>
</thead>
<tbody>
<tr>
<td>ES&amp;T: Higher Ed</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Justice: courthouse</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>Justice: prison</td>
<td>1.0</td>
<td>0.75</td>
</tr>
<tr>
<td>Office</td>
<td>1.0</td>
<td>0.75</td>
</tr>
<tr>
<td>Healthcare: clinic</td>
<td>1.0 – 1.2</td>
<td>0.75 - 0.9</td>
</tr>
<tr>
<td>Healthcare: inpatient/hospital</td>
<td>1.2</td>
<td>0.9</td>
</tr>
<tr>
<td>ES&amp;T: Laboratory</td>
<td>1.4</td>
<td>1.05</td>
</tr>
<tr>
<td>Retail</td>
<td>1.5</td>
<td>1.13</td>
</tr>
</tbody>
</table>
2030 Data Reporting:

AIA 2030 Design Data Exchange

PORTFOLIO  INPUTS  REPORTS  RESEARCH

All Projects

417 Projects And 68,771,615 GSF Included In Analysis.

- 100% Predicted EUI Reduction from Average EUI
- 64.4% Energy Model
- 55.6% Collect Data
- 23.5% Will Actual EUI Data Be Collected
- 100% Lighting Power Density Reduction

GSF Values
- Total = 64,258,581
- Meeting Target = 3,423,072
- % Meeting Target = 4.3%

Interior-Only Projects: 124 projects and 4,516,034 GSF included in analysis.
Non-Residential and Residential Projects: 293 projects and 84,255,881 GSF included in analysis.
2030 Data Reporting:

AIA 2030 Commitment

2015 PROGRESS REPORT

2013 PROGRESS REPORT

AIA 2030 Commitment

2014 PROGRESS REPORT

AIA 2030 Commitment
RESULTS / Progress to 2030 goals

PICK UP THE PACE TO MEET OUR 2030 GOALS

Each year we make progress toward achieving the 2030 goals, but the current trajectory suggests we’ll need more time to achieve 100 percent carbon-neutral design. Improvements could happen faster with stricter codes, more energy modeling, and other market motivators.

Key
- 2030 Commitment pEUI % savings goals
- Average annual pEUI tracked by the 2030 Commitment

2 dotted projection paths:
- Meeting 2030 goals
- Current pace

Annual predicted energy use intensity (pEUI) savings is a weighted average of whole building project gross square foot (GSF). pEUI savings is relative to the 2030 Baseline-2003 Commercial Building Consumption Survey (CBCE) and 2001 Residential Consumption Survey (RECS).
Benchmark the Project
Benchmark the Project

<table>
<thead>
<tr>
<th>Benchmark Type</th>
<th>EUI Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CBECS average 2003 average</td>
<td>101.7</td>
</tr>
<tr>
<td>ASHRAE 90.1-2010 (40% over CBECS)</td>
<td>61.0</td>
</tr>
<tr>
<td>City of Boulder (30% over 90.1-2010)</td>
<td>42.7</td>
</tr>
<tr>
<td>Project Target (AIA 2030 Challenge?)</td>
<td>30.5</td>
</tr>
</tbody>
</table>

EUI: Energy Use Intensity

- **EnergyStar Target Finder Regional Average**
- **Energy Code Average Savings (varies by code)**
- **EUI Target – Established by Client, Team or Municipality**
- **AIA 2030 Commitment EUI Target (70% Reduction)**
Benchmark the Project

ASHRAE 90.1 LPD Standard

1.2 w/sf

Lighting Power Density Healthcare

Project Target (AIA 2030 Challenge?)

0.9 w/sf

AIA 2030 Commitment LPD Target (min 25% Reduction)
<table>
<thead>
<tr>
<th>RANK</th>
<th>ORGANIZATION</th>
<th>SCORE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>BNIM</td>
<td>100.0</td>
</tr>
<tr>
<td>2</td>
<td>The Miller Hull Partnership</td>
<td>99.0</td>
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<tr>
<td>3</td>
<td>WRNS Studio</td>
<td>98.3</td>
</tr>
<tr>
<td>4</td>
<td>HDR</td>
<td>97.6</td>
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<tr>
<td>5</td>
<td>SmithGroup</td>
<td>97.5</td>
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<tr>
<td>6</td>
<td>Mithun</td>
<td>96.7</td>
</tr>
<tr>
<td>7</td>
<td>Touloukian Touloukian</td>
<td>95.7</td>
</tr>
<tr>
<td>8</td>
<td>Bruner/Cott &amp; Associates</td>
<td>95.5</td>
</tr>
<tr>
<td>9</td>
<td>Perkins And Will</td>
<td>95.3</td>
</tr>
</tbody>
</table>
Annually, the embodied carbon of building structure, substructure, and enclosures are responsible for 11% of global GHG emissions and 28% of global building sector emissions.
CARBON BALANCE GOAL (SCHEDULE A1-A5 + D)

- Carbon Emitting (KgCO2e/m²)
- Carbon Sequestering (KgCO2e/m²)

Building Wall Section

Concrete 100
Metals 60
Wood + Plastics 90
Thermal + Moisture 30
Openings + Glazing 30
Wood Materials 50
Wood Structure 60
Rapidly Renewable 60
Mass Timber 144
Durable Building Materials
Sums
Net Carbon Balance

Kilograms of Atmospheric Carbon Dioxide per Gross Area in Meters Squared (KgCO2e/m²)
THANK YOU