A VISION FOR THE NEXT DECADE

#NAPHC2016-2025
DRIVEN BY PROJECTS NATIONWIDE

58 MULTIFAMILY SUBMITTED, PRE-CERTIFIED, CERTIFIED

SITE EUIs OF 10-20 Kbtu/ft².yr

~20-50% better than DOE’s ZERH
~1000 PROFESSIONALS NATIONWIDE

CPHCs, PHIUS CERTIFIED BUILDERS, RATERS & VERIFIERS

$\text{CO}_2$ Emissions = $\frac{\text{Population}}{\text{(GDP/Population)}} \times \frac{1}{\text{(Energy/GDP)}} \times \frac{1}{\text{(CO}_2/\text{Energy})}$

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~350 PROJECTS NATIONWIDE

- Submitted (161)
- Certified (130)
- Pre-Certified (57)
PHIUS Certified and Pre-Certified Square Footage
DRIVEN BY PROJECTS NATIONWIDE

58 MULTIFAMILY SUBMITTED, PRE-CERTIFIED, CERTIFIED

SITE EUIs OF 10-20 Kbtu/ft².yr
~20-50% better than DOE’s ZERH
COOPERATION WITH ZERH YIELDS HERS

Source:

©2015 Passive House Institute US | PHIUS
INCORPORATING QAQC+ ACCEPTED BEST PRACTICE

High-Performance Home Staircase

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...NEXT FOR THE NEAR FUTURE...
NEW PROGRAM 2017

FOUNDING MEMBERS OF THE INDUSTRY ADVISORY COUNCIL
First Research Projects:

- Monitoring project “proof of concept” for all climate zones
- High performance material category definitions, quality assurance
- Marketing of products who have qualifying materials and components
PHIUS MULTIFAMILY ADVOCACY & RESOURCE CENTER

SUPPORTED BY

PASSIVE HOUSE FOR MULTIFAMILY BUILDINGS
MULTIFAMILY PASSIVE BUILDING PROJECTS

The PHIUS+2015 Passive Building Standard ignited the rapid growth of multifamily passive buildings from coast to coast. Learn more about proven best practices in the following case studies.

ORCHARDS AT ORENCOR, OR

The Orchards at Orenco in suburban Portland, Oregon, is currently the largest multifamily passive building development in North America.

UPTOWN LOFTS ON FIFTH, PA

ACTION Housing developed Uptown Lofts on Fifth in Pittsburgh to provide affordable housing with affordable utilities made possible by the high-performance passive building envelope.

BEACH GREEN NORTH, NY

Beach Green North, designed to meet passive building standards, also includes resilient features to weather heavy storm conditions in Far Rockaway, Queens, New York.

KNICKERBOCKER COMMONS, NY

Knickerbocker Commons is a six-story affordable multifamily passive building development in the Bushwick neighborhood of Brooklyn, New York.

PERCH HARLEM, NY

The Perch Harlem development is New York City’s first market rate
Beach Green North, Midrise in Queens:

- Bluestone Organization orders feasibility study and performs financial assessment of project in early 2014
- Makes decision to go forward with certification and detailed WUFI Passive model/design to meet PHIUS+2015
- Construction begins Nov 2015, PHIUS+ onsite verification in progress, completion scheduled for early 2017
HI RISE BUILDINGS ON THE HORIZON

249 unit - NYC

209 unit - NYC

Hotel – Boston, MA

259 unit – Chicago, IL

Hotel – Pittsburgh, PA
TEAM PRAIRIE VIEW A&M  CLIMATE ZONE 2A

PHIUS+2015 Passive Building Standards  
Hot & Humid Climate Conference  
May 6, 2016, Austin TX  
Atlanta 2017 TBA

DOE Race to Zero 2016 Grand Winner
<table>
<thead>
<tr>
<th></th>
<th>BEopt PHIUS+2015 Base for Houston</th>
<th>Prairie View Base Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>House Type</td>
<td>3 Bedroom</td>
<td>3 Bedroom</td>
</tr>
<tr>
<td>House Size</td>
<td>2,080 SF</td>
<td>1,567 SF</td>
</tr>
<tr>
<td>Wall Insulation</td>
<td>R-13 cavity + R-12 c.i.</td>
<td>R-21 cavity + R-9 c.i.</td>
</tr>
<tr>
<td>Roof Insulation</td>
<td>R-49 Ø ceiling</td>
<td>R-38 cavity + R-9 c.i.</td>
</tr>
<tr>
<td>Roof Finish</td>
<td>Composite Shingles, medium color</td>
<td>Standing Seam Metal, galvalume finish</td>
</tr>
<tr>
<td>Floor Insulation</td>
<td>None- slab on grade</td>
<td>R-21 cavity + R-9 c.i.</td>
</tr>
<tr>
<td>Windows</td>
<td>15%; Double Pane, Low-E, Insul. Frame</td>
<td>15%, Double Pane, SHGC-0.2, U-0.15</td>
</tr>
<tr>
<td>Window Shading</td>
<td>2 ft overhangs</td>
<td>2 ft overhangs; 8 ft porch; movable exterior horizontal louvers</td>
</tr>
</tbody>
</table>

WUFI PASSIVE IS EVOLVING

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...AS FOR THE BIGGER PICTURE...
ECONOMICALLY OPTIMIZED PASSIVE STANDARDS ASSURE BEST VALUE OF PV SYSTEM


© 2016 PHIUS
DIRECT CURRENT MICROGRID

THERMAL STORAGE & ENERGY STORAGE

The duck curve shows steep ramping needs and overgeneration risk.

Sample Net Load – March 31, 2012

(from the California Independent System Operator)
PASSIVE BUILDING IS PART OF THE SOLUTION

Katrin Klingenberg, Executive Director PHIUS

www.PHIUS.org/www.PHAUS.org