Promoting Passive House to Developers, Architects and Contractors

Rob Leonard
Vice President, Production and Field Support

- HERS Rater
- PHIUS+ Rater and Large Building Verifier
- Energy Star Rater
- BPI Building Analyst Professional
- NAHB Certified Green Professional
Liberating Passive House from the Shoebox

Key Learning and discussion points

- Demystifying Passive House
- PH SFR, shines for MF
- PH makes developers money
- PH within grasp
- Collaboration using IPD or IDP
- Contribute to the value engineering
- PH process “has their back”
  - Reduces Risk and burden
  - Third Party Verification
- Soften Building Science Approach
- Attributes of Off-Site Prefabrication
- Stay connected and communicate
Offering Baseline Definitions

Baseline Definitions for promoting

- **Passive House**
  - Not Passive Solar
  - Clear Concise explanation of the PHIUS process
  - CPHC
  - Precertification
  - PHIUS+ Rater
  - Third Party Certification

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Offering Baseline Definitions

Baseline Definitions for promoting:

**IPD or IDP**
- IPD (Integrated Project Delivery) contractual arrangement
- IDP (Integrated Design Process) more informal working relationship
- Either assures PH success
Offering Baseline Definitions

Baseline Definitions for promoting Offsite Prefabrication

- Produced away from Job site
  - Component,
  - Volume or
  - Panel
- Integrated Planning and supply chain optimization
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Bust the Myths

- **Passive House is attainable**
  - A Number of successful projects
  - Using familiar means, methods and designs
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Make it an Easy Button

- Developers, Architects and Builders are busy
  - Give them the “easy button” the “recipe”
  - Installation Manual
  - PHIUS Resources
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Push for IDP

- **Early, inclusive, continuous collaborative approach**
  - Naysayers will push back
  - Involves Careful Listening
  - At best
    - Everyone benefits from efficiency
    - Everyone’s risk is reduced
    - The whole choir of systems singing in unison
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Identity key influencers and decision makers

• **Assure their continuous inclusion in the process**
  • Remind the PM
  • Whisper down the lane affect
  • Be sure Lenders are included
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Continuous Technical Support

- **Stay Involved, keep key players involved**
  - May involve some free sharing of information
  - Eliminates confusion
  - Continued myth busting

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Emphasize “the Building as a System”

- Numerous Benefits
  - No Surprises during construction
  - Predicted performance
  - Superior QA
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Emphasize “the Building as a System”

- Numerous Benefits
  - Surprising Comfort
    - Minimized HVAC and high performance Building Envelope
  - Assured Sustainability
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Prefabrication Attributes

- Faster Installation
- Reduction on-site Supervision Requirement
- Easier Commissioning
- No Air Leak Chasing
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Prefabrication Attributes

- No significant training time
- No special tools or equipment
- Materials R&D / Procurement
- Simplifies On-site Logistics and handling
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Prefabrication Attributes to Produce Passive House Buildings

• No special training for air tightening and flashing of windows and doors
• Smaller crews
• Less skilled labor required
• Less job site waste
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Help to establish and maintain a resource network

- PHIUS Certified Professionals
  - Provide Information and Guidance
  - Layperson Terms
Help to establish and maintain a resources network

- **PHIUS and Other Tools**
  - WUFI
  - PHPP
  - Precertification
  - IDP
  - Prefabrication
  - Previous Project Experiences and resources
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This all contributes to build TRUST

• Trust
  • Builds Confidence
  • Creates Sales
  • Sales generate Projects
  • Establishes Long Term Relationships
  • Creates Referrals
Results-Powerful Trifecta-IPD IDP / PHIUS+/ Prefabrication

- **Process & Product Efficiencies**
  - Early Decisions
  - Builder can contribute
  - Owner’s goals maintained
  - Issues Resolved Early
  - Maximum Efficiency
  - Reduced Documentation
Results - Powerful Trifecta - IDP / PHIUS+/ Prefabrication

IDP

- **Optimal Budget Control-short & long**
  - More Accurate Budgets
  - Optimization of Construction Cost
  - Optimized Life Cycle Costs
  - QA
  - Sustainability
Results-Powerful Trifecta-IDP / PHIUS+/ Prefabrication

Passive House

• PHIUS+ Benefits
  • Lower Risk through stringent QA / QC
  • Comprehensive Design & Energy Model Review
  • HERS Score-Widely Recognized
  • Incorporates DOE programs

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Results-Powerful Trifecta-IDP / PHIUS+/ Prefabrication

Offsite Prefabrication

- **Prefabrication Benefits**
  - Superior QA / QC
  - Lowers Risk - satisfy PH requirements systematically
  - Waste Reduction
Results-Powerful Trifecta-IDP / PHIUS+/ Prefabrication

Offsite Prefabrication

• **Prefabication Benefits**
  • Less Overall timeline for a project =
    • Overhead & Burden
  • Reduced Risk to construction:
    • Staff
    • Less Weather Exposure
  • Smaller Crews
  • Proper Materials Selection and Compatibility
Pain Point relief for Developers, Builders and Architects

- Meeting forecasted budgets
- Reducing Financial Risk
- Optimized Cost Control
- Quality and Sustainability
- Assured Energy Performance
- Reduced Construction Costs and Risks
- Team incentives to improve performance and reduce risk
- Developer has greater sense of trust
Results - Powerful Trifecta - IDP / PHIUS+/ Prefabrication

Building Owner & Occupant Benefits

• **Reduced Energy Cost**
  • Best Path to Net Zero & Net Positive
• **Decreased Capital Costs & maintenance costs for downsized HVAC**
Results—Powerful Trifecta—IDP / PHIUS+/ Prefabrication

Building Owner & Occupant Benefits

- Reduction Allergen and respiratory ailments
- Quieter Living
- No drafts – higher satisfaction
- Reduced Carbon Footprint
Recon from the Real World

Perspectives

“THERE HAS TO BE A BETTER WAY TO BUILD.”
Recon from the Real World

A Recent Project Prospect

• Was on Track for PH
• Builder / Developer had no prior Experience with PH
  • Apprehension
  • Budgetary Concerns
• IDP team well established
• Concerns alleviated via complete team involvement
• All planned with PH and Prefabrication
• THEN...
Recon from the Real World

A Recent Project Prospect

The Lender walks onto the field

- Not working with the broader team
- Thought Passive House was “too risky”
- Lesson Learned - Be sure everyone is included in the IDP
Leveraging Lessons Learned

Multifamily focus

• Focus more on:
  • Multifamily
  • Affordable Housing
  • Workforce Housing
  • Senior Living
Leveraging Lessons Learned

Multifamily focus

- Federal Tax Credits for Affordable Housing
- Developers compete for Tax Credits on Basis of QAP Points
- PA and other states have adopted Passive House into their QAPs
Leveraging Lessons Learned

Multifamily focus

*Architect Magazine*: “Many housing finance agencies already prioritize sustainability by awarding points for projects aiming to meet the U.S. Green Building Council’s LEED Green Building Rating System or the Enterprise Green Communities criteria.”
Leveraging Lessons Learned

Multifamily focus

Pennsylvania Housing Finance Agency (PHFA) Senior Executive Director and CEO, Brian Hudson Sr., “We chose Passive House because we felt that it ultimately reduces the cost of operating multifamily housing, with the outcome being lower utility bills for residents.”
**Impact of Utility Costs on Developer Fee**

<table>
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<tr>
<th></th>
<th>Housing Authority Allowances</th>
<th>Calculated Passive House</th>
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<td>LIHTC Equity</td>
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<tr>
<td><strong>Net Fee</strong></td>
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**CHIP: “We’re a nonprofit, which means we don’t put the net fee in our pockets. We put that money into new developments. Higher net fees mean we can house more people.”**
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