Passiv for the Masses ~
Tunneling Through the Cost Barrier through Innovative Design and Production Methods

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Why Change?
Do we really need to have this conversation?

Nope, nope, so much nope
Proactive or Reactive

It’s our choice

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What will YOU do?
It’s our choice
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We have no choice
From a 2012 Presentation

“Investing in value instead of energy consumption requires little financial efforts but rather creativity and intelligent solutions”
~ Wolfgang Feist

Code Adoption by State
National Legislation
Market Adoption

USA 2012

2009 2012
2012 2015
2015 2018
2018 2021

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Define the Problem
The first step in solving a problem

- Design & Construction
- Broken process
- Lack of integration
- Lack of respect
- Lack of basic physics
- Lack of a useful feedback mechanism
- Lack of components

“Forget everything you know and walk in backwards” ~ Katrin Klingenberg
What do we need to do?

• Create a better process

• Create for integration

• Foster respect, humility and understanding

• Educate and inform the profession in basic physics

• Design and install useful feedback mechanisms

• Create, test, refine and market components
Create, test, refine and market components
Craft Solutions
Eliminate non-value added work

- Envision the product properties
  - The product will seek to create and leverage efficiencies in design, manufacturing and construction to create a market rate product as part of a solution for high performance construction in sector being served.
- Design
  - The product will allow designers flexibility but will allow designer to trade flexibility for reliable cost savings, quality control, ease of detailing, ease of energy modeling, robust durability
- Manufacturing
  - The product will embrace a lean standardized approach with minimized shop drawing, automated parts creation, single point entry, efficiency in factory motion
- Construction
  - The product will be intuitive to North American trades, consolidate or eliminate site labor, create simple solutions to complex issues
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Design
Allows designers flexibility, constrains flexibility for reliable cost, quality control, ease of detailing, ease of energy modeling, robust durability

- **Standard System**
  - Think Lego ®
  - Design Flexibility
  - Ease of Detailing
  - Quality Control
  - Robust & Durable
  - Reliable Cost
  - Easy Energy Models
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Design

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- **Standard System**
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  - Reliable Cost
  - Easy Energy Models
Manufacturing

Embrace a lean standardized work approach, minimized shop drawing, automate parts creation, single point entry, efficiency in factory motion

- **Standard System** (inspired by Henry Ford – “Any color as long as it’s white”)
  - 8’ & 9’ Heights
  - 2’ Inside and Outside Corners
  - Standard Passivhaus Certified Single & Twin Windows and Doors
  - Affordable (Data from 54 projects priced)
    - Single Family: $20-$30 (USD) per sq ft floor area
    - Multi Family: $8-$15 (USD) per sq ft floor area
    - Eliminates Shop Drawings
    - Components pre-cut & jigged to reduce production time
    - EU Windows & Doors
      - Simplified Purchase
      - Delivered Installed & Airtight
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Manufacturing
Two Systems, One Purpose – Making Passivhaus accessible to a larger market

• Custom System
  • ANY Height
  • ANY Configuration
  • ANY Munster Joinery Passivhaus Certified Windows and Doors
  • Affordable? - $40-$60 (USD) per sq ft floor area
    • NEED Shop Drawings
    • ALL Components - custom cut and layout
    • EU Windows & Doors –
      • Simplified Purchase
      • Delivered Installed & Airtight (when size allows)
Construction

The product will be intuitive to North American trades, consolidate or eliminate site labor, create simple solutions to complex issues

- Modular systems
  - Slab Foundations
  - Basement Foundation
  - Framed Walls
- Require basic skills
- Requires less labor
- Allows faster construction

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Construction
J Form ~ Bottom Plate
Construction

Walls

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Construction
Walls
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Construction
Walls

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Construction

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Is this really the solution?
Of course not, it's a step on the way!
Questions & Contact

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