Quality

AND

Quantity

Case studies in advancing the single-family passive house market

Moderated Session (120 mins)
1- Introduction Presentation, John Loercher (20 mins)
2- Case 1: Eagle Rock, Passive to Positive – Michael Hindle (25 mins)
3- Case 2: Rachel Carson Ecovillage, Auros Group – Craig Stevenson (25 mins)
4- Case 3: Flex House, North River Architecture & Planning – Stephanie Bassler (25 mins)
5- Discussion + Q&A, Moderated by John Loercher (25 mins)

Learning Outcomes:
1. Expedite the process of certifying multiple single-family units within a development
2. Reduce the total cost/sq. foot of single-family homes to that seen in the multifamily market
3. Successfully prefabricate and construct entire communities of Phius certified buildings
Certification Growth

Factors contributing to Multifamily adoption:

- Better form factor = favorable building energy balance
- Proven to be only 2-5% above conventional costs
- Passive House included in QAPs across the country for LMI housing
- Updated buildings codes, stretch codes and local legislation (bottom-up approach)
- Incentives favor standardized, verifiable certifications

MULTIFAMILY AND SINGLEFAMILY PROJECTS
By percentage of certification, 2014 - 2023

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Let’s make some waves

- Phius-certified single family homes make up about .02% of new construction in the US
- Custom, ‘one-off’ buildings have always been the focus, but not the way forward
- Retrofits are critical (new Revive program)
- We need some accelerants in the single family market

230 Single Family Projects
(as of 2023)

1,019,495 New Single Family Projects
(2022 Census – Survey of Construction)
Accelerants

Alternative Construction Methods
- Prefabricated options - Modular and Panelized
- CNC fabrication
- Exciting new materials and products

Phius Protocols for Developments
- Phius offers ways to make certification for multiple buildings easier by offering:
  1. A site-source energy protocol
  2. A cumulative project review process

Phius 2021 CORE Prescriptive Path
- Significantly reduced review timeline
- Prescriptive requirements for all building components
- Not as site-dependent as the performance path

Alternative Project Delivery Methods
- Integrated design development
- Design-build / Integrated Project Delivery
- Onsite training and certified professionals

Adoptable
Prescriptive
Customizable
Case Studies

**Eagle Rock**
Stoughton, MA

- **Architect:** RODE Architects
- **CPHC:** Passive to Positive
- **Builder:** TBD

17 Individual residences integrated with complete site design and targeting Phius ZERO certification.

**Rachel Carson Ecovillage**
Pittsburgh, PA

- **Architect:** Evolve EA
- **CPHC:** Auros Group / Northeast Projects
- **Builder:** Blueprint Robotics

35 Phius 2021 CORE certified housing units across 16 buildings in a walkable ecovillage.

**Flex House**
Various sites, NY

- **Architect:** North River Architecture + planning
- **CPHC:** Northeast Projects
- **Builder:** North River Design + Build

An adaptive design tied to the Phius prescriptive path, executed in a design-build-develop method.

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**Phius Certified**
**Integrated Design**
**Economy of Scale**

(Case studies in advancing the SF Passive House Market.)
EAGLE ROCK

Stoughton, MA

Certification: Phius 2021 CORE (Pending)

Michael Hindle, CPHC
Owner, Principle

Andy Allwine, AIA CPHC
Project Manager

Passive to POSITIVE
PASSIVE HOUSE AND LOW IMPACT DESIGN

Highlights
- 3 Building types, 17 buildings, 17 units
- Integrated development model
- Phius 2021 CORE certification targetted
- MassCEC Embodied Carbon Reduction challenge participant
- In design
RACHEL CARSON ECOVILLAGE

Gibsonia, PA

Certification: Phius 2021 CORE, design certified

- 3 Building types, 16 buildings total, 35 SF units, 1 common house
- Integrated development model
- Phius 2021 CORE certification
- Prefabricated offsite by Blueprint Robotics
- In construction
Stephanie Bassler, RA CPHC
Architect, North River Design Build

FLEX HOUSE

(Various Sites) NY

Certification: Phius 2021 CORE prescriptive, final certification

- 3 fully certified, 1 design certified, more in development
- Design / Build / Develop Model
- Phius 2021 CORE Prescriptive certification
- Site-built construction with semi-untrained subs
- Ongoing development
**Quality AND Quantity**

(Case studies in advancing the SF Passive House Market)

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**Case Studies**