

Diverse Voices – Global Adaptation of Passive House: Culture, Climate and Challenges

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Abstract:

With rising awareness and determination to fight against the climate crisis worldwide, practitioners are finding the Passive House standard a potent solution for the building sector. As passive and other sustainable building standards are proliferating worldwide, those standards meet a host of different location-specific challenges. We, a diverse group of women architects/certified Passive House consultants, seek to understand the adaptation of the Passive House standard globally. We will discuss the challenges to adaptation of the standard around the world. While some principles and modeling protocols apply universally, others will need to be directed by human behavior, cultural context and climate.

Presenter Biographies:

Christina Aßmann is an architect and building scientist with 20 years of professional experience working on various project types. Her work embraces design, sustainability, regenerative design, carbon reduction, social justice and the synergy of different high-performance building standards. Christina is passionate about incorporating her sustainability research into her role as an educator and Energy Code Trainer through NYSERDA's initiative to educate building professionals. She also serves on the advisory board for NY Stretch 2023 Energy Code Development and Advancement. Her interest in sustainability strategies stems from her upbringing in Germany where her parents instilled her with a focus on environmental stewardship.

Ilka Cassidy, Dipl. Ing. Architecture, CPHC, Co-founder of Holzraum System, is passionate about Passive House envelope design and building science, focusing on the benefits of natural building materials. She grew up in Germany and received her Diploma of Engineering/ Architecture degree from the RWTH Aachen.

In her work with pre-manufactured systems, she connects architectural concepts and design seamlessly with construction and engineering, incorporating sustainability goals and occupants' health in every aspect of the design process.

She has worked on multiple projects as a Certified Passive House Consultant and is an active member of Green Building United in Philadelphia as well as a podcast host for the Passive House Accelerator.

Ilka co-founded C2 Architecture, a Philadelphia based full-service Architecture firm, in 2005. We have conducted interviews with a host of global sustainability professionals, practitioners and homeowners in high performance buildings, from Germany, to Spain, Turkey, India, Japan, Vietnam, Korea, South America, Australia, and Africa. This is an on-going research project that aligns with this year's conference theme of "Scalable Solutions". Our premise is to investigate how established solutions can be adapted on a large scale, where the challenges lie and how they can be addressed. It is clear that a "one fits all" solution will not work, but that a more sensitive approach is necessary for global proliferation.

It is evident that the countries where the standard has been implemented with some measure of success had to overcome hurdles including availability of required construction materials, building and mechanical components, awareness and education of construction methodology, and technical skill. Some countries

have exhibited success with implementation of design approach, integration with construction technology and providing necessary builder education. Others are presented with cultural-specific challenges including language and adaptation to traditional building techniques.

Innate human behavior is hard to change. Traditions should be respected and integrated into region-specific guidelines. Beyond cultural context, lack of awareness and understanding of the Passive House concepts appear to be more or less prevalent around the globe. Some countries don't even have the baseline of an energy code.

Sharing interviews conducted as part of our research, the presenters will address how advocacy, awareness and education of the end user can help facilitate the adaptation of Passive House along with other sustainability standards. Will foreign investments in "unicorn projects" help the spread and acceptance of the standard? We have found that sometimes, the applicability will depend on the project type and size. For example, it may not be feasible for a single-family home but may work for multifamily housing in the same county. How can economic limitations be addressed in an incremental implementation method?

We hope our research and discussion will be a catalyst for a global initiative and network supporting adaptation of Passive House.

Our international research team is from Germany, Japan and India/Sri Lanka.

Additional team members are: Sayo Okada and Sangeetha Sambandam. However, they won't be able to attend the conference.

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