



**Minutes – Friday, April 28, 2023**  
**Video Conference**  
**9 am to 11 am**

**Attending:** Ken Levenson, Brian Eden, Dan Lamb, Diane Cohen, Fred Schoeps, Gerrie Wiley, Guillermo Metz, Hailley Delisle, Holly Hutchinson, Ingrid Zabel, Janelle Bourgeois, Jean Marie Nizigiyimana, Marie McRae, Paul Moore, Ray Burger, Sarah Carson, Scott Doyle, Steve Beyers, Tom Hirasuna, Dave Bradley, Peter Bardaglio

**Multi-Residential Passive House Projects in NYC – Ken Levenson**

*Ken Levenson, the executive director of the Passive House Network in Brooklyn, discussed the organization's work and the development of multi-residential passive housing in New York City. Ken has been a registered architect in New York State since 1993 and is a Certified Passive House Designer, as well as founding board member of New York Passive House, the National Passive House Alliance, and the North American Passive House Network.*

- Passive House Network is national 501c3 – associated with Passive House Institute in Germany, the international association
- Members and chapters across U.S., including Passive House Empire State, which is active upstate
- Focused on education and capacity building – culture change key to sustainable future – need to change conversation and people's expectations
- Buildings are failing us – building is not neutral act – huge part of carbon pollution problem – account for 40% of global emissions
- Often unreliable in their performance, expensive, and unhealthy – underserved and marginalized communities bear disproportionate share of burden
- Passive House supports fundamental performance – platform for sustainability
  - Reduced Carbon Emissions
  - Net Zero Energy
  - Support Healthy Environments
  - Green Infrastructure
  - Provide Resilience
  - Support Affordability
  - Environmental & Social Justice
  - Historic Preservation
  - Protect our Investments
  - Comfort & Joy
- World's most rigorous energy efficiency standard – also health standard and comfort standard – energy efficiency, health, and comfort all interconnected
- Passive House also supports electrification and renewable energy – reduction in demand makes for much more flexibility in implementation of both
- Recent studies demonstrate that passive house construction does not increase load on grid – results in 75% reduction in heating & cooling systems and up to 90% reduction in energy use
- Demonstrates value of well insulated home – if power goes out in winter time, can actually stay warm with couple of candles
- Produces clear outcome with fixed targets
  - Airtightness
  - Heating Cooling/Dehumidification
  - Energy Use Intensity
- Passive house standards can be applied to all kinds of building types: offices, factories, hospitals, gymnasiums, and libraries as well as housing – issue now is scaling up and normalizing them

- First modern passive house built in Germany in 1990 – based on years of scientific research
- Integrated methodology with five key principles
  - Climate specific insulation levels
  - Airtightness
  - Thermal bridge free connections
  - High performance windows and doors w/ solar protection
  - High efficiency, heat recovery, appropriate ventilation
- Smart controls and renewables should enhance high-performance, not compensate for poor performance
- Passive House should be for everyone, not just affluent
- Fluctuation in energy usage much narrower in passive house design than LEED or built-to-code structures
- Passive House can avoid cost-plus paradigm and stay in budget and on target by adopting following:
  - Passive House on day one
  - Work with certifier from day one
  - Require team to have proper training
  - Optimize from start & stick to certification & target
- Should be able to stick close to conventional construction costs – 2 to 2.5% more – retrofits are tougher
- HANAC Corona Gardens in Queens first certified multifamily Passive House – 100 units for senior housing – around 2015
- Cornell Tech on Roosevelt Island 24-story housing for students and faculty – all electric except for domestic water heating – sparked many other similar projects
- Convivium on East 36<sup>th</sup> St. (market-rate rental housing) and Flow Chelsea (mixed market rate and affordable housing) on West 29<sup>th</sup> St. in Manhattan built around same time – makes solid financial sense with long-term ownership – lower vacancy rates
- Sendero Verde in East Harlem next big step – occupied entire city block – required Passive House for residential floors above base to win bid – over 600 units in three buildings
- Breaking Ground in Bronx provides certified Passive House residences for low-income seniors and formerly homeless seniors with special needs – includes on site social services
- NYSERDA sponsored three-year Buildings of Excellence design competition spurred construction of Passive House and total electrification by making \$40 million available – across state but primarily in NYC
- Newton, MA has become hub of sustainable development – Green Newton promoted Passive House for 15-building project, mostly multifamily – turned out to have nine of buildings certified
- Now state has come out with new building code to drive more Passive House construction of multifamily and commercial buildings in MA – focuses on restricting capacity of HVAC systems, compelling robust enclosures

#### Q&A

- Peter: Idea of Passive House standard as foundation not just tip raises question of why aren't we doing this more?
- Ken: Construction industry fundamentally conservative – difficult to persuade contractors that this is future – same holds true for real estate developers
- At end of day culture change is generational, not timetable we need it to be on
- Peter: Getting people to understand difference between upfront cost and long-term investment is key
- Fred Schoeps: If we're really going to create culture change, the developers and bankers have to be on board
- Ken: You need someone on the inside in the bank or real estate development firm who's working to get to yes instead of trying to find the no, and who's working to convince everyone else on the inside that this is doable – usually someone in the middle who's pushing
- Sarah Carson: Passive House isn't always the answer – there may be other ways to get the same results in terms of a building's performance – love concept of Passive House as foundation of super-efficient shell and foundation upon which you layer other generation sources – shows that concerns about the impact of electrification on grid are bit of a red herring

- Brian Eden: Big part of problem is focus on upfront premium and inclination of contractors to avoid doing anything they haven't already done – great to see that it's become much more broadly accepted
- Peter: What are the main changes in evolution of Passive House over last few years?
- Ken: Integrating renewables into the calculation – not degrading performance but maintaining same standards but electrifying more smartly
- Also supply of components is another significant change – many more companies importing from Europe to US and American manufacturers getting on board – also many more examples to point to and greater inclusion of mainstream voices
- Also important that tension between affordable housing advocates and energy efficiency advocates has declined considerably – affordable housing must be healthiest and most resilient for climate and social justice
- Peter: How does Passive House address tension between energy efficiency and greenhouse gas emissions
- Ken: Renewable energy doesn't match up with demand, so we have to drive down demand – we're going to flip from summer peak to winter peak in terms of demand on grid – so question is how much of demand is it going to be? How much infrastructure and battery storage capacity is going to be required?

### **Plastic Waste Management in Burundi – Jean Marie Nizigiyimana**

*Jean Marie Nizigiyimana is a Hubert H. Humphrey Fellow at Cornell University this year. He is the founder and CEO of JENI-ECO Company, a plastic recycling and manufacturing company in Burundi, and has been involved in a wide array of sustainability efforts there. Jean Marie shared with us the challenges of plastic waste management in Burundi and solutions he is developing to address them.*

- Burundi is small country in central Africa surrounded by Democratic Republic of the Congo, Rwanda, and Tanzania – became independent nation in 1962
- Working to address three main challenges: pollution, empowerment of women, and youth unemployment
- Burundi, like many other African countries faces issue of waste in general and plastic pollution, which is main cause of diseases related to poor hygiene
- Burundian women still depend on their husbands for almost everything, especially in rural areas -- not fully empowered to be free and work to provide for their families
- Also problem of youth unemployment widespread
- Serve as head since 2015 of the Department of Environment Protection and Climate Change Resilience within United Forces of Partners for Sustainable Development (UFPD)
- Main activities:
  - Educate - climate change workshops and seminars
  - Plant trees - campaigns resulting in planting of 470,500 trees in 5 years
  - Access to drinking water - manage and maintain water fountains in rural areas to provide drinking water
  - Sensitize population to principles of hygiene
- Waste management very big issue in Burundi – mountains of trash everywhere
- Poor hygiene in Burundi cause of several diseases, including cholera, dysentery, malaria, amoeba-related illness, and others
- Waste management first step – in 2018 we started Tube Heza project to help clean Gitega City by collecting waste from houses
- Undertook city cleaning campaign to remove most of mountains of waste – simple wooden garbage bins put in place – not easy to change people's minds and get them to stop throwing waste everywhere and start using bins
- Local administration stepped in to help, providing metal bins to replace wooden ones and expanding paving
- Buy-in from public key to success – everyone felt concerned
- City totally different from one in 2018, when campaign began
- From beginning of waste management initiative, rise of plastic waste became clear – that's when I decided to launch ENI-ECO Company in 2019 to carry out plastic recycling

- Sought to solve issue of plastic waste by making something that could last for at least 50 years – took year to work on a product that could be sold at the market – pavers made from melted plastic waste mixed with sand and other materials
- Fighting plastic waste to prevent it from polluting water bodies, soils, and atmosphere
- From waste to value: remove 5 tons of plastic waste each month from environment and recycle it
- Total of 120 tons of plastic waste recycled from January 2020 to June 2022
- Empowering women and creating jobs: 18 women and young people employed
- Engage community: more than 100 students get school supplies at end of each summer holiday from collecting plastic waste and selling to JENI-ECO Company
- Initiative appreciated – we have requests from other provinces and countries to help
- Future projections on waste management, recycling, and women and youth empowerment
  - Expand waste management and recycling from one province to whole of Burundi
  - Recycle more than 60 tons of plastic waste each month
  - Create more than 100 new jobs with priority given to women
  - Empower women financially by hiring at least 50% women
  - Seek out support to achieve our goals – move to help other African countries
- How can we solve plastic waste issue? By making products from this waste – not just pavers but also roof tiles and bricks
- Need to shift from manual to machine production to increase from 5 tons per month to 60 tons per month
- Getting the right tools essential: shredder, mixer, extruder, and press
- Would like assistance from engineer to identify specifications
- Peter: Very inspiring to see how both Jean Marie and Ken are acting as agents of change and transformation in both their fields – really about collaboration and network building
- Need to make sure we are maximizing our human resources by making sure everyone is around table in coming up with innovative sustainability solutions
- Other theme that ties two presentations together is public health – in many ways sustainability is about health – makes it clear that sustainability not just an abstract concept but something that touches on every aspect of our lives
- Fred Schoeps: Difficult to identify potential sources of grants and other funding that would allow Jean Marie to make shift from manual to machine production – only needs additional \$50K
- Spending time with Humphrey fellows from around world has provided Fred with broader perspective beyond Ithaca
- Peter encouraged people to take look at Kiva.org – online platform for making microloans to women entrepreneurs in developing countries
- Jean Marie invests portion of revenue from his company to local organization working on issues of women empowerment – brings groups of women together to provide financial training that encourages them to invest pooled savings in small businesses
- Peter invited Brian Eden to talk about his recent work around issue of plastic packaging and waste
- Brian: Wrote resolution along with Barbara Eckstrom that County Legislature passed unanimously in support of State Sen. Harckham's Packaging Reduction and Recycling Infrastructure Act -- legislation will shift NYS's approach to solid waste, focusing responsibility on the corporations that use packaging in their commercial activities
- Plastics are booming – doubling and tripling production of plastics as fossil fuel industry looks for other ways to leverage oil and gas
- Peter: We clearly need to reduce production of plastics as well as find ways to recycle and creatively reuse them
- Question in chat: Are most of plastics in Burundi from inside country or from outside of it?
- Jean Marie: Plastics we're recycling are from inside country but much of it comes into Burundi as packaging of products imported from other countries – Burundi does not accept plastic waste from other countries