Environmental Hero:
Kenneth Chooi

Geography 101 - Environmental Geography

Rebekah Bolinder

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Green Point Project - Cowichan Bay, BC

Kenneth Chooi:

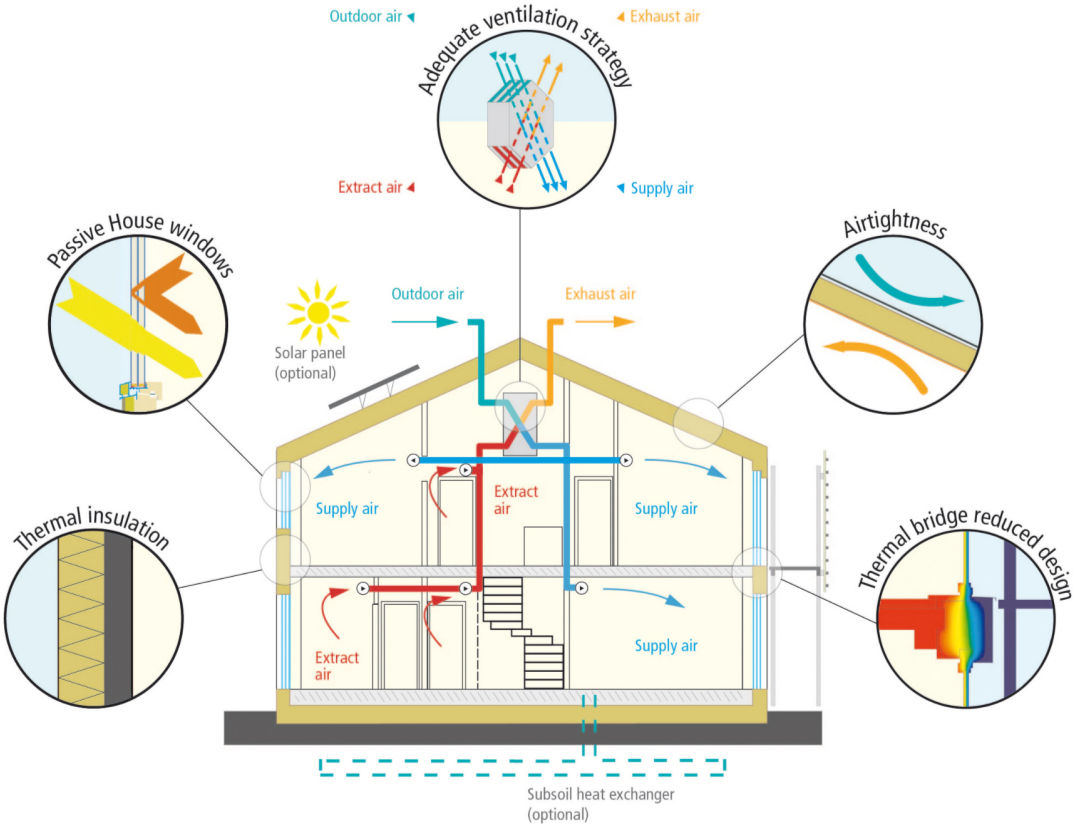
I chose architect Kenneth Chooi as my environmental hero. I was inspired by Kenneth's interest to sustainably design, build and repurpose a single family home that when complete will implement four green building certifications that when combined will achieve the world's highest combination certification in the world. (Passive House Canada, 2018).

Kenneth Chooi is an Architect, and co-founder of the Green Point Project along side Fiona Mclagen. The Green Point Project is located in Cowichan Bay British Columbia at the base of Mt. Tzouhalem, and directly on a provincial archeological site. (The Green Point Project, 2018). The vision and goal of the Green Point project is to reduce climate change, preserve the natural eco-system, engage in bio-dynamic farming, and ultimately provide a healthy and sustainable home for his family. (Chooi, K, 2017). This new 2,500 square foot home will be built on existing foundation and will incorporate as much salvaged material as possible. The project will include PVC solar power, an advanced treatment septic system, and will achieve four green certifications including: *Living Building Challenge, Passive House, Zero-Energy* and the *Green Shores Program* certification. (The Green Point Project, 2017). When complete this project will be the first to combine all four certifications rendering this project one of the greenest and innovative homes in the world. (The Green Point Project, 2017).

Passive House:

The five principles of Passive House include: a continuous insulation and air seal layer, a high performance glazing, a heat recovery ventilation system, as well as elimination of

thermal bridges. (Passive House Canada, 2018). Passive house buildings consume up to 90% less heating and cooling energy than conventional building construction. (Chooi, K, 2018).



(Five Principles of Passive House, 2018)

The key is to have a well insulated building envelope paired with high efficiency windows and doors insuring airtightness. (The Green Point Project, 2017).

<u>Living Building Challenge:</u>

The Living Building Challenge has 7 petal performance areas including: *Place*, *Water, Energy*, *Health and Happiness*, *Materials*, *Equity*, and *Beauty*. (Living Building Challenge, 2018).

The *place* petal honours the unique characteristics of the land and site, and determines how to protect and restore the land once developed. (Place Petal, 2018). The *water* petal is intended to redefine waste. 100% of the water must be supplied by recycled, closed loop, or rain capture methods. (Water Petal, 2018). The *energy* petal requires that all energy must be supplied by on site, using renewable energy. (Energy Petal, 2018). The *health and happiness* petal takes a biophilic approach by connecting the interior space to nature. (Health & Happiness Petal, 2018). The *materials* petal focuses on the use of non toxic material and the exclusion of red list chemicals. (Materials Petal, 2018). The *equity* petal focuses on inclusion, and a inclusive sense of community. (Equity Petal, 2018). The *beauty* petal recognizes the need for aesthetics, beauty, and spirit.

(Living Building Challenge Petals, 2018)

The Red List:

The Living Building Challenge requires the exemption of all red listed chemicals and items including:

- ALKYLPHENOLS
- ASBESTOS
- BISPHENOL A (BPA)
- CADMIUM
- CHLORINATED POLYETHYLENE AND CHLOROSULFONATED POLYETHYLENE
- CHLOROBENZENES
- CHLOROFLUOROCARBONS (CFCS) AND HYDROCHLOROFLUOROCARBONS (HCFCS)
- CHLOROPRENE (NEOPRENE)
- CHROMIUM VI
- FORMALDEHYDE (ADDED)
- HALOGENATED FLAME RETARDANTS (HFRS)
- LEAD (ADDED)
- MERCURY
- POLYCHLORINATED BIPHENYLS (PCBS)
- PERFLUORINATED COMPOUNDS (PFCS)
- PHTHALATES
- POLYVINYL CHLORIDE (PVC), CHLORINATED POLYVINYL CHLORIDE (CPVC), POLYVINYLIDENE CHLORIDE (PVDC)
- SHORT CHAIN CHLORINATED PARAFFINS (SCCPS)
- VOLATILE ORGANIC COMPOUNDS (VOCS) IN WET APPLIED PRODUCTS
- WOOD TREATMENTS CONTAINING CREOSOTE, ARSENIC OR PENTACHLOROPHENOL

(The Red List, 2018)

A hazardous materials report of the existing building at Green Point found toxic materials including: Asbestos, Lead Paint, Vermiculite, Water Penetration, Mold, Mildew, Poor air quality, and rodent infestation. (Chooi, K, 2017). This is where the “challenge” of the Living Building Challenge comes to play. Not only will these materials need to be removed, they must also be transported and disposed of appropriately. I like how Kenneth is repurposing and salvaging at much of the existing building while removing the red listed items. It will be

interesting to see the process that takes place, and discover what materials he is able to salvage and reuse in the new building.

Final Thoughts:

As an architect, educator and environmental activist, Kenneth strives to encourage his community and others to live and build in such a way that contributes to reducing climate change. Kenneth is inspired by nature and is passionate to educate students on environmental and sustainable design. I found it very interesting that the Green Point Project will be the first to combine both Passive House and Living Building Challenge. It goes to show Kenneth's passion for sustainable design, and promotes a resourceful way of living.

I found it unique that inclusive design was incorporated as one of the 7 petals of the living building challenge. I am curious to see how Kenneth and Fiona will be implementing all 7 petal requirements as well as the green shores, passive house, and net-zero standards. Once completed, I have no doubt that this project will be successful, and achieve all of the goals set out from its inception.

I admire Kenneth for taking on such a complex project, and being a role model and inspiration to all of his design students that have the privilege of learning from him. The Green Point Project has inspired me to research these building standards, and see how I, as a interior design student can incorporate sustainable standards in my projects to come.

Not only will Kenneth's clients and community be inspired by the project's success, but his students will also have the opportunity to see first hand the process, design development, construction, and completion of the project.

The Green Point Project demonstrates why Kenneth deserves to be named an environmental hero in the eyes of his students, colleagues, and the design industry. Not only does the project reflect a combination of creative design and sustainability standards, but it also shows Kenneth and Fiona's proud stewardship towards the site and surrounding environment.

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