



NET ZERO READY OR ULTRA-EFFICIENT COMMUNITY SCALE DEVELOPMENTS



Jennifer Weatherston
Director of Innovation & Integration



PROJECT OVERVIEW

LOCATION: 2 Sites – Woodlands Preserve Guelph Ontario / Lora Bay Cottages Blue Mountains Ontario

NUMBER OF RESIDENCES: Guelph x18 / Lora Bay x30 first phase

PRODUCT TYPE: Single Family



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CEILING / ROOF : Raised Heel R60 Blow in Fibreglass Insulation
 ABOVE GRADE WALL: R10 XPS R22 Batt Fibreglass Insulation
 WINDOWS: Triple Pane 366
 BASEMENT WALL: R10 XPS + R22 Mineral Batt
 SLAB: R10
 AIR TIGHTNESS- ACH50 OR NLR: Target 1.0 or Less
 HEATING: **HYBRID** Dettson Chinook and Alize Air Source Electric Heat Pump
 COOLING: hybrid – Electric Air Source Heat Pump
 DOMESTIC HOT WATER: Envirosense Hot Water Tank – Gas / Instantaneous
 VENTILATION: Vanee ERV 90H

PRODUCT SPECS



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WHAT PROMPTED THE INTITAL IDEA TO DEVELOP A LOW LOAD COMMUNITY?

1. Seeing Advancements in Building Code, overall improvement in performance of homes resulted in higher performing communities
2. The Challenge to find alternative energy sources, how can we make it affordable for buyers to get off the grid or put more money back in their pockets

Homes offered today	Per Home Energy Consumption *	By Scale of Community	Community Net Energy Impact*	Community Net GHG Impact*
Current Ontario Building Code Home	110 GJ	100 Homes	11,000 GJ	900
Energy Star Home	101 GJ		10,100 GJ	800
NET ZERO READY Home	37 GJ		3,700 GJ	150
NET ZERO Home with Solar	37 /-37 GJ		0 GJ	

*SUBJECT TO HOUSE SIZE, MECHANICALS AND FUEL SOURCE / *GHG BASED ON AVERAGES / **ALL ENERGY REFERENCES ABOVE ARE BASED ON ANNUAL CALCULATIONS

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THE LEARNING CURVE~

1. Our research has been on going for a number of years now. Discovery homes are reviewed for cost opportunity or revised methods / products. Consultation's with site / trades for improved applications
2. Industry Partners are critical – framers, Building Knowledge Canada, Owens Corning, Jeldwen
3. Multiple discovery homes have been completed, there is room to pull back or advance the homes
4. **3 Key Lessons** ~ Keep it simple, conservation first – start from the outside in, keep looking for alternative opportunities and value for the buyers



THE KEY ITEMS THAT MAKE OR BREAK IT

IDENTIFY 4 KEY TECHNOLOGIES OR PROCESS THAT ARE CRITICAL TO ACHIEVING YOUR GOALS FOR THE COMMUNITY?

1. **PROCESS** – slow down and think about the unintended consequences – there is always an unintended impact – how do you minimize the associated risk
2. **CONSERVATION** first mentality– where is the most opportunity to scale as opposed to lowest price and less scale
3. **MECHANICALS** – still one that requires consistent review – conventional manufacturers need to step it up
4. **TEAM** – it takes a team of folks that do not settle for anything, each answer is scrutinized and researched, alternatives ran through multiple scenarios, trade off solutions. This can be internal or external



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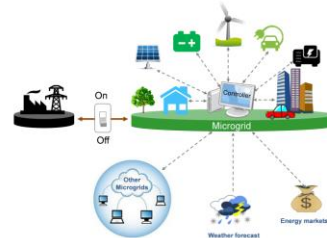
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WHAT ARE YOU KEEPING AN EYE ON AS PROMISING FUTURE TECHNOLOGY OR PROCESS OPPORTUNITIES THAT COULD MAKE THESE PROJECTS EASIER AND AFFORDABLE?



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IF NZ COMMUNITIES ARE GOING TO BECOME MAIN-STREAM, WHAT TECHNOLOGIES OR CONCEPTS NEED FURTHER DEVELOPMENT ? ...

1. Community Support @ Municipal Level – rebate and acknowledgement the new infrastructure and waste / water demands are significantly less. Less up front in the ground costing
2. Increased control of affordability – how homes are priced. Commitment to not change the model – adjust but sell the value
3. Value propositioning – clear accurate return on investment data that can be consumer friendly
4. Collaboration with Utilities – funding to help offset innovation. Be receptive to change



WHAT BUILDING CODES, INFRASTRUCTURE DESIGN OR PLANNING PROTOCOLS NEED TO CHANGE FOR LOW LOAD, NZ COMMUNITIES TO BECOME THE "NORM"???

1. Municipalities recognizing the value of the community to their infrastructure and offer back incentive in some form to builders
2. Incentivize – this benefits municipalities – why not help one another move the bar
3. Code changes are trending this way -
4. Planners – find a way to mix density and optimal solar exposure or sitings. At present density is the key and plans are maxing out sites.
5. Consumer awareness – increased data, performance, return on investment. Possible property tax rebates or improvements.
6. Designers – architectural buildings with single sloping roof lines – make a house beautiful without complicating it.



WHAT 2 PIECES OF CRITICAL WISDOM WOULD YOU IMPART TO BUILDERS/DEVELOPERS WHO ARE CONSIDERING COMMUNITY SCALE DEVELOPMENT?

1. Are you committed? If the market changes – will you change the whole focus or shift it slightly
2. Are you ready? Do you feel confident, have you scrubbed your budgets, designs and found the best production style options for your business that over security and long term reliability. Who are your industry partners? Do you have a loyal trade base that works as a team with you and your team. Can you do what you say you are going to do on all the sites within the community?





Thank you

