



NET ZERO READY OR ULTRA-EFFICIENT
COMMUNITY SCALE DEVELOPMENTS

Millers Pond

Presenter :Doug Tarry

Position: V.P. Operations

Company name and logo: Doug Tarry Homes

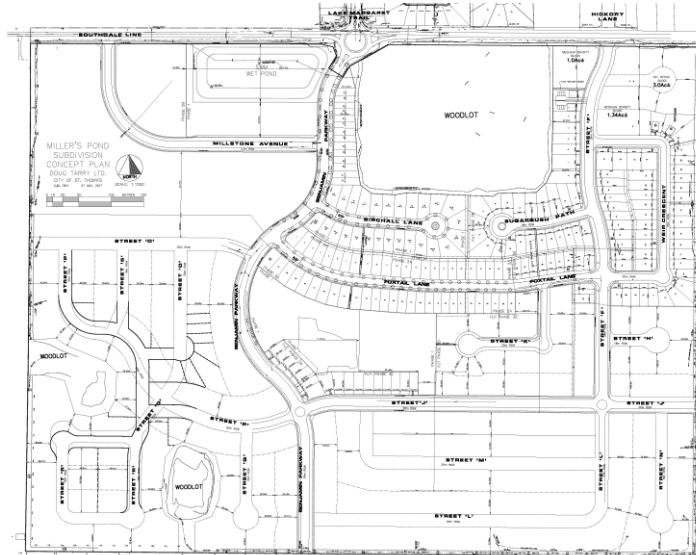


MILLERS POND PROJECT OVERVIEW

- LOCATION: St. Thomas
- SITE: 200 Acres Green Field
- NUMBER OF RESIDENCES: Approx. 800 Low Rise + 400 mid Rise
- PRODUCT TYPE: Singles, Semi's, Towns and Mid-Rise



MILLERS POND PROJECT OVERVIEW



Net Zero Building:
Working water wheel.
Public Washrooms Rough In.
Active Park connected to Public Trails



Spring Training Camp

for Advanced Building Science & Practical Application

NEW DTL HEAD OFFICE:
NET ZERO BUILDING.
Large South Roof for Solar Panels
Smaller North Green Roof
Green Wall in Stairwell.
Graphenstone Ecological Paint

DOUG TARRY HOMES OFFICE BUILDING



RENDER VIEW 1

tillmann
architects
ruth
robinson

Spring Training Camp

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PRODUCT SPECS – LOW RISE

- CEILING /ROOF :R 60
- ABOVE GRADE WALL: R27.5
- WINDOWS: Triple Glazed, Low SHGC
- BASEMENT WALL: R 29.5
- SLAB: R10 Spray Foam
- AIR TIGHTNESS- ACH50 OR NLR: <1.0 ACH
- HEATING: Dettson Dual Fuel With Smart Ducting.
- COOLING: Dettson Alize ASHP
- DOMESTIC HOT WATER: Rinnai Tankless
- VENTILATION: VanEE 90 H with ECM Motor



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

1. ...Natural Goal of Getting to Net Zero... Architecture 2030 Challenge
2. ...Next Step on Path of Continual Improvement.
3. ...As of January 1st, 2019, all DTL Low Rise Housing is Net Zero Ready... so we were already there...
4. We see Mid-Rise as the next challenge.



KEY FINDINGS

1. *HOW MUCH TIME AND RESEARCH DID YOU DO IN PREPARATION?*
 - Discussion with St. Thomas Energy (Entegris) on loads, acceptability of supplying the grid.
2. *WHAT PARTNERS (TRADES, MANUF, UTILITIES, OTHERS..) HAVE BEEN AN INDISPENSABLE PART OF THE PROJECT ?*
 - Bluewater Energy and Building Knowledge. Working with Karwood Homes on Mid-Rise Projects.
3. *DID YOU CONSTRUCT A DISCOVERY HOME OR PILOT ANY TECHNOLOGIES BEFORE ADOPTING CONCEPTS AT THE COMMUNITY SCALE?*
 - Multiple Discovery Homes over several years to Lean our Spec to the Minimum Required to get to Net Zero.
4. *IF YOU DID A DISCOVERY PROJECT, WHAT WERE 3 CRITICAL LESSONS YOU LEARNED?*
 1. Air Tightness and Wall Detailing
 2. Dual Fuel Reduces Energy Cost to Customers.... Adds Panels to the roof..... RYERSON Fuel Switching Pilot.
 3. Educating Customers, Trades, Building Officials and Staff is a constant work in progress.



KEY TECHNOLOGIES OR PROCESS CRITICAL TO ACHIEVING COMMUNITY GOALS:

1. Covered Car Ports using Solar Panels, when roof not enough.
2. Battery Storage. Per Household, or Community Battery Building, or Both? We are still working on this.
3. Community Breaker? Keeping the lights on if the Grid goes dark.
4. Peak Load Community Benefit. Entegris sees positive energy supply during A/C season as potentially significant benefit.



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

1. Smart Electrical Panels
2. Low Load NG still makes sense, Fuel Switching based on Available Solar will Reduce GHG Emissions.
3. Can we do something about appliances and Vampire Load?



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

1. Battery Storage. Currently Still Prohibitively Expensive, but coming down. Limitation on number of circuits. How to do community battery storage.
2. Net metering without Year End Credit = approved theft by Utilities. Grossly unfair to consumer.
3. Higher Construction Cost = Higher Property Value = Higher Taxes. Could there be a Property Tax Reduction / Rebate that reflects community benefit?



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

1. Government needs to get out of the way.... Or at least get on the same page... at all levels.
2. The Pace of Code Change is Painfully Slow... even when you know the change is needed..... (Low Solar Glass.... A Decade to change).
3. We'll need more building inspectors... And we need to integrate them into our training.....Because
4. Objective based Code allows for innovation, provided you can get AHJ to approve.
5. ...



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

1. Attend all the training you can. Get outside of your own community and have a look around. Go to CI
2. What's your climate resiliency construction plan? If the wind wrecks your roof, your building's going in the landfill...