



Windsor Elms Village

# WINDSOR ELMS VILLAGE

## DEEP ENERGY RETROFIT

BROUGHT TO YOU BY





SUSAN HAYES MACDOUGALL,  
WINDSOR ELMS VILLAGE, CEO



Windsor Elms Village

Currently, Sue is the 2nd Vice President of the Annapolis Valley Chamber of Commerce. Sue sits on the Board of Governors for Acadia University, as well as the Boards of Directors for Glooscap Ventures, The Valley Regional Enterprise Network and the Nursing Homes of Nova Scotia Association.

Sue was born and raised in the Annapolis Valley, and after having started her career in the U.S., she returned to our beautiful province in 1998. Sue lives in Kentville with her husband Rob, and together we are blessed with 5 children and 2 grandchildren.

Web: [windsorelms.com](http://windsorelms.com)



WILL MARSHALL, P.ENG, LEED AP, CMVP  
EQUILIBRIUM ENGINEERING, PRESIDENT

Will is a Professional Engineer with extensive process and project management experience in the commercial, residential and industrial sectors. For the last 12 years, he has been directly involved in the design and implementation of sustainable buildings, energy efficiency, and high performance mechanical systems.

During his career, William has worked as the Environmental Manager for Michelin North America, as the lead Faculty in the Nova Scotia Community College's Energy Sustainability Engineering Technology Program (ESET), and currently is an active faculty member with both the Canadian Institute for Energy Training (CIET) and the Canada Green Building Council (CaGBC). Having developed and delivered curriculum for engineering technologists, corporate clients, and other industry groups, William is dedicated to moving energy management into the daily culture of organizations.

Web: [EQENG.CA](http://EQENG.CA)



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## ABOUT US

Nova Scotia based energy services firm rooted in sustainable building design and energy conservation.

Provides energy modelling, energy efficiency and renewable energy consulting services amongst other engineering services.

Deep Energy Retrofit project design and delivery experts.



# WINDSOR ELMS VILLAGE

- Founded in 1965
- Not-for-profit Society
- 250+ Employees, 150+ Volunteers
  - Largest Employer in Windsor / West Hants
  - Annual Operational Budget of \$16M
- 108 Private Rooms
- Is an Eden Registered Long Term Care Home, Focused on Resident-directed Service
- Licensed by the Province



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# PROJECT BACKGROUND

FACILITY TYPE - LONG TERM HEALTH CARE

FACILITY SIZE - 122K sq.ft

FACILITY AGE - BUILT IN 2010/11

PRE-UPGRADE ENERGY CONSUMPTION

- \$250,000/YEAR

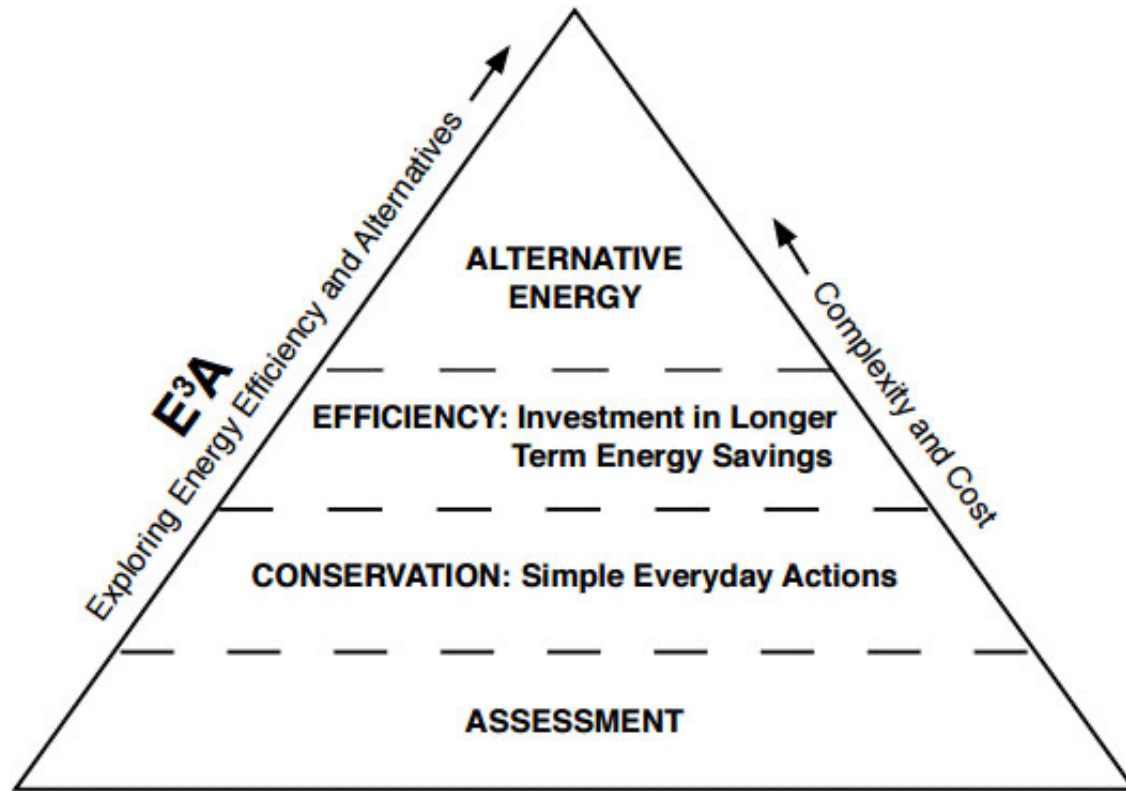
MONTHLY PEAK FACILITY LOAD

- 767 KW

ANNUAL GHG EMISSIONS

- ~1,050 TONNES OF CO<sub>2</sub>e

# PROJECT APPROACH



Source: <https://www.e3a4u.info/energy-technologies/understanding-energy/energy-pyramid/>



# PROJECT PATH

1

**Energy Audit:** A high level review of building energy consumption and savings opportunities.

*Duration of 2-4 weeks.*

2

**Feasibility Study:** A detailed audit accompanied with investment grade project costing and savings estimates.

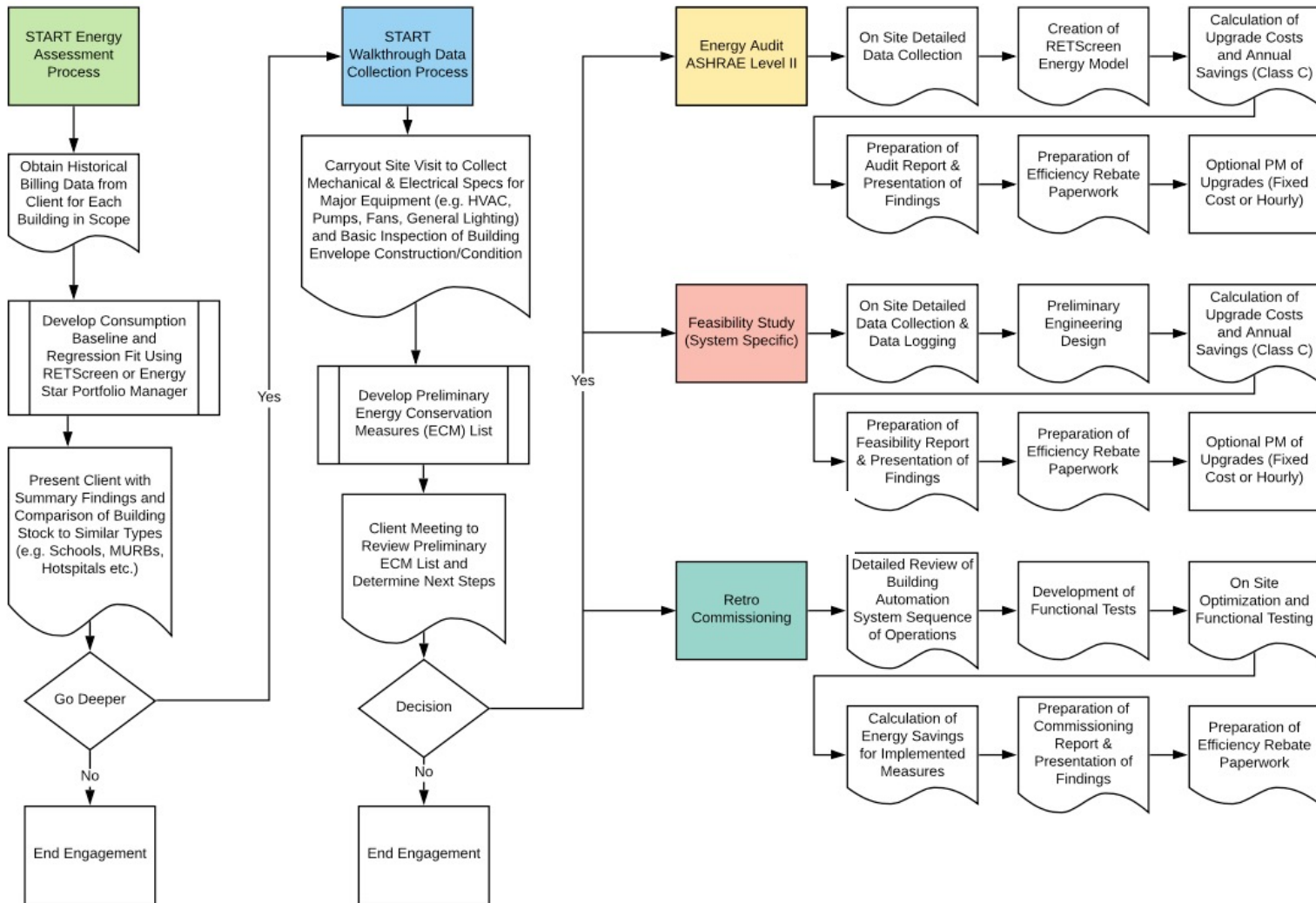
*Duration of 2-3 months.*

3

**Implementation:** Installation, commissioning and measurement and verification.

*Duration of 12-18 months.*





ENERGY AUDIT "ACTION" PHOTO



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# PROJECT TIMELINE

## JUNE 2018

- Solar Analysis by Equilibrium
  - Uncovered Other EE Opportunities

## MARCH 2019

- Detailed Feasibility Study and Grant Applications

## OCTOBER 2019

- Begin Energy Retrofit Engagement w/  
Equilibrium Acting as Project Managers

## 2020

- COVID, COVID & SOME MORE COVID

## 2021

- Final Solar & Storage Install



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# ENERGY EFFICIENCY MEASURES



26 Pump  
Replacements



112.5 kWh Battery  
Energy Storage



Complete LED  
Lighting Retrofit



Building Controls  
Updates



115.2 kW Solar  
PV Array



3 Propane  
Humidifiers



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# PROJECT PERFORMANCE



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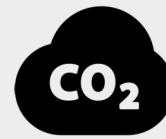
Capital Cost: \$948k



55% reduction in electricity use.  
Savings of 950,000 kWh/year



\$93,000 estimated annual  
operational savings.  
(\$90,000 in energy savings,  
\$3,000 maintenance savings)



GHG Emissions reduced by  
50%.  
525 tonnes/year of CO<sub>2</sub>e.



# PROJECT PARTNERS

## 1. Energy Audit Partners:



Program: CBDC Clean Technology Study

## 2. Feasibility Study Partners:



Program: Energy Feasibility Study



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# PROJECT PARTNERS

## 3. Implementation Partners



**Program:**

Custom Solutions Rebates



**Program:**

Low Carbon Communities Grant



**Program:**

Green Municipal Fund



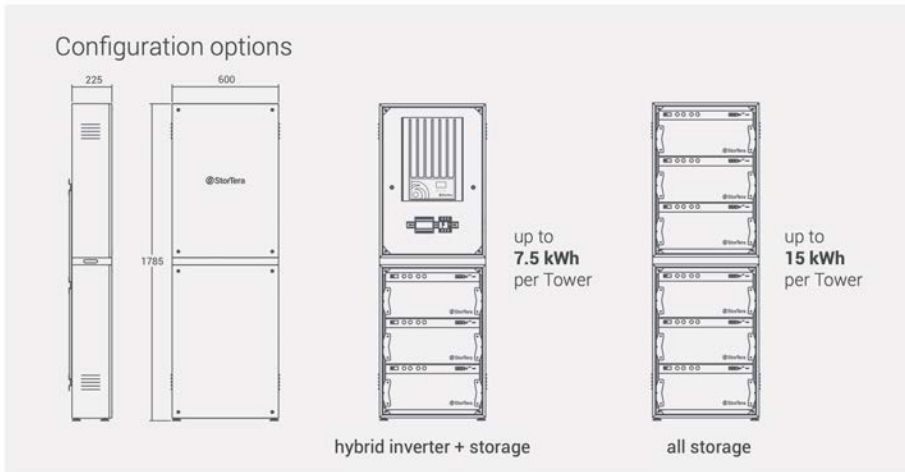
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# PROJECT BENEFITS

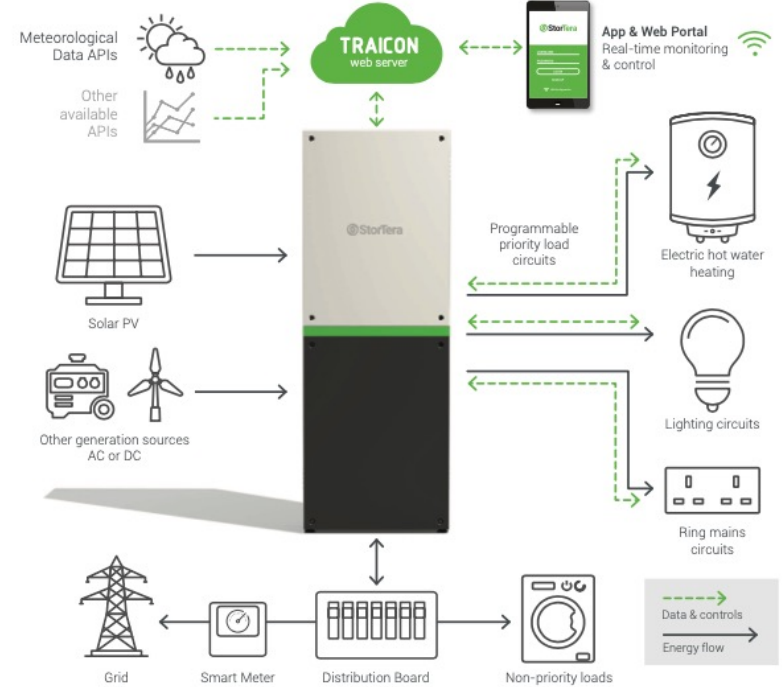
- **Operating Capital**
  - Enhanced Programs & Quality Of Life Outcomes For The Residents
  - Outdoor Garden Project
  - Staff Growth & Development Opportunities
- Improved Safety - Lighting & Air Quality)
- Pride - Environmental & Financial Stewards
- Staff Recruitment; This Work Matters To Those Entering The Workforce Like Never Before
- Reduced GHG Emissions And Energy Use
- Leadership In Long Term Care
  - Nursing Homes Of Ns Association On Board
  - Good Governance
  - Attracts New Opportunities





## OUR SCOTTISH PARTNERS

### All-in-one energy storage & control



# HOME OF WEV'S NEW SOLAR FIELD



EQ WORKING HARD!!



 equilibrium  
engineering



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## QUESTIONS?

### CONTACT US

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