**Summary Notes from Energy Retrofit Training Network Call**

**Tuesday April 14th, 2020**

**Goals of the Network (so far…)**

* To better understand the Associations and Colleges and Universities involved in supporting and building the Contractor network needed to meet the hoped for/needed growth in the Residential Energy Efficiency Market;
* What training and certifications are already in place in the market;
* What the gaps are;
* What are the best ways to address those gaps;
* Other players that we should be working with or that should be brought into the market; and
* Other goals????

**Who is Doing What….**

**HRAI- Heating, Refrigeration and Air Conditioning Institute of Canada (HRAI)**

* Represent industry for space heating and cooling of buildings, domestic water heating, ventilation and indoor air quality, refrigeration processes, and building control systems
* One of their strategic priorities is on education and career development
* HRAI has a significant role in addressing the climate change challenge
* Work on net zero energy ready building codes by 2030, model building retrofit code by 2022, labelling/rating requirements etc.
* Education includes “post-trades” training for the HVACR industry. Training is based on current codes and standards.
  + “Post-trades” refers to those who are already licensed, HRAI does not provide licensing. Unlicensed individuals who take training include engineers and designers to learn about technical systems.
* New Ventilation Courses in 2019-2020 include:
  + Basic Principals of Residential Ventilation (online)
  + Residential Ventilation using Section 9.32 of the Building Code (2 day course includes OBC 9.32 Design, NBC 9.32 Design, BCBC 9.32 Design)
  + Residential Ventilation using CSA F326 (3 day)
  + HRV/ERV Installation and Balancing Fundamentals (1 day)
  + Depressurization Testing of Residential Systems (1 day)
* Other Certification Programs Include:
* Residentials Heat Loss/Heat Gain Calculations (4 day based on CSA F280-12)
* Residential Air System Design (4 day)
* Residential Commissioning (2 day)
* Residential Radiant Hydronics Design (4 day)
* Small Commercial Heat Loss/Heat Gain
* Small Commercial Air System Design
* Non-certification Programs:
  + Indoor Air Quality (IAQ) for Residential and Small Commercial (2 day)
  + Introduction to Residential HVAC Equipment (1 day)
  + Building Officials Guide to Understanding HVAC Building Code Requirements (1 day)
  + HRAI also provides onsite training and customized training on a request basis
* Fuel Pump training: there are customized programs for grops and stakeholders, customized optimization installation on heat pumps
  + May be a gap that exists in Ontario
* HRAI worked with GreenON on a pre-approved contractor list. Criteria includes licensing and liability insurance. This is posted on their site, and this will be shared through CAP.
  + The HRAI website has detailed description of training.

Fanshawe College- London Campus: Deep-Energy Building Retrofit

* Energy storage and battery capacity has been improving over time
* Building efficiency market has been growing over time
* Fixing existing buildings increases local employment
* Fanshawe has a SILEX for each student: Signature Learning Experience. All students should have at least 3 priority skills, including resilience, social intelligence, sel-directed learning, global citizenship, problem solving, etc.
* At Fanshawe, several buildings have been retrofitted and include clean energy. Ie. Solar walls
  + Building envelope upgrades reduce heating needs during the day.
  + Able to store surplus energy in wall enclosures and draw it off in the evening. Even when the sun is not shining, energy is still generated.
  + With sensors and systems they can monitor indoor air quality and occupant health. Solar panels send e-mails with information, show offset of much of the cooling needs in summer.
  + Parking garage for electric cars on campus, off grid home to be built on campus, domestic hot water on campus
  + Removed 400 tons of emissions per year
* Working with Federal government on a plan to renovate 14.5 million existing homes in Canada
* College is a great sandbox for testing out methods and accessing research dollars.
* Helping small builders get into the market quickly, who don’t have resources compared to larger builders.
* Moving towards industrialized approach to make prefabricated solutions for homes.
* Project on 68-unit townhouse complex in London campus, 70s archetype townhomes in various states of decay. Working to upgrade, looking at thermal perspective and identify leaking.
* Project to validate energy modeling for these buildings and use sensors to look at operational components to optimize efficiency

Humber Agile EE Residential Capacity Building in a VUCA World

* Humber: polytechnic educational institution that teaches theory and hands-on training. 3 campuses with 33,000 full time students and 23000 part time and con ed students
* Spring 2020 Residential Energy Efficiency Capacity Building Programs
  + For homeowners:
    - Homeowner Retrofit Orientation to initiate an Energy Audit and EE Project (HERO)
    - Virtual Reality (VR) Project to increase Retrofit Literacy and Participation (EARTH) (in development)
  + Community/Municipal Stakeholders:
    - HEAT: A 2 day retrofit technical and engagement skills capacity building for community/sustainability animators and municipal staff
  + Neighbourhood and Communities:
    - Local HEROES: Neighbourhood HEAT/HERO sessions with 800 hours of retrofit/program animator engagement support
  + Energy Advisors:
    - EA Bootcamp: Foudnation Exam Prep (5 days) all 200 NRCan Learning Objectives
    - EA Bootcamp 2: admin and HOT200 – 5 DAYS (in development)
* Deliver courses for homeowner and community members and workforce upgrades
* Adapting to the New Normal- new digital facilitation and engagement modalities
  + Using those who have already completed programs to engage students going through workshop/webinars in breakout groups
  + Interactive Mobile Engagement
  + Next steps: chat bot for engagement and 3D immersive mobile experiences
  + Facilitation tools in online environment
* 1000’s more energy advisors needed:
  + Chicken and egg situation- advisors will not be trained if no retrofits happening, but scaling retrofits requires many advisors
* Important for advisors to play a role in promoting programs- can not put this all on the shoulders of contractors

**Next Steps**

* Tuesday April 28th 10 am – 11:30 am
* Will focus on feedback on Network Goals and presentations from NAIMA; Home Retrofit Consortium; BILD (tbc); Algonquin (tbc)