

Q&A from October 26, 2022 Builder Forum Series | Integrated Design Process (IDP) for Part 9 Buildings

Presented by the Township of Langley, Nicholas Bell (Foxridge Homes, Qualico Developments), Larry Clay (Clay Construction)

Township of Langley: TOL

Nicholas Bell: NB

Larry Clay: LC

Q: Why not spray foam?

NB: The use of spray foam is entirely up to the builder or client. There is nothing specifically prohibiting the use of spray foam in a part 9 residential building. If someone truly wants to use spray foam they can.

LC: I have mixed feelings about spray foam. On one side, it is better than Batt and Polyethylene and is recommended by people I respect like Richard Kadulski. On the other hand, it is high in embodied carbon. There are mixed reviews on its ability to maintain air tightness long term.

Q: What are the presenters' opinions on spray foam?

NB: We have used spray foam but currently do not use it in our homes as we have found better results with alternative product choices. The overall longevity of the product as an air barrier when a house settles would be a concern of ours if we were to consider switching back.

LC: I look for other methods of insulating and sealing but not opposed to using it in some applications. Just not my first option.

Q: How are modular homes affected by the new energy requirements, step code? How will this affect the CSA approved modular system?

TOL: Modular homes have many definitions. Before energy requirements for a building can be established, it first must be clarified if that type of building is permissible in the Township. It is recommended that an applicant get in touch with the Township if they are considering a modular home to discuss further.

Q: Can we tour the Net Zero home?

NB: More information about our Net Zero Home will be made available to the public through the Foxridge Homes website and social media. Please check in regularly to stay up to date on our progress.

Q: Does anyone have a comment on AeroBarrier?

NB: AeroBarrier, as a product, performs well for the initial air sealing of a home, particularly for homes with very difficult assembly details, and I am aware of some builders who have used it. With our current external air barrier approach to air tightness and our quality control methods used on our job sites, we have not had a need to use this product. For our homes, the use of AeroBarrier would be an added cost which is unnecessary for us to achieve our required air tightness scores.

LC: Some of the tightest homes are using AeroBarrier to achieve this result. At this point, there are no longterm studies to support longterm effectiveness. In our

homes, we are focusing on the basics of a continuous interior and exterior air control layer. This includes training the trades. I would not be opposed to using Aerobarrier when the first approach is not getting us where we need to get to.

Q: Does your Net Zero Home include power for an EV - If so how many kilometers per year?

NB: Our Net Zero homes does include an EV charger. However, a Net Zero home is designed and modelled to produce as much energy as it consumes on an annual basis, under its standard operating conditions and electrical base loads. Charging an EV at a Net Zero home falls outside the technical requirements of the program.

Q: Please put up a list of Solar Consultants!

NB: There are a lot of great solar consultants throughout Greater Vancouver. If you're considering installing a solar system on your home or using solar on your next build, I would suggest interviewing a number of them and finding the one that best suits your individual needs.

Q: Who is doing the mechanical design for the net zero house? Contractor or Mechanical engineer?

NB: The mechanical design for our Net Zero home was developed with the efforts of ourselves, our Mechanical Contractor, the project Energy Advisor, and with help from the equipment manufacturers' technical representatives.

Q: How is makeup air handled for the net zero house?

NB: Makeup air requirements are reviewed and considered in the overall design of the mechanical system for the Net Zero House. Everything has to be properly sized and reviewed with these high-performance mechanical systems for them to function properly. The system also needs to be measured and commissioned to ensure it is functioning as intended.

LC: Our mechanical contractor will allow for make-up air once they know our air tightness, hood fan size and other equipment's fuel source.

TOL: Ventilation requirements for all Part 9 homes shall comply with Part 9 of the BC Building Code, irrespective of the energy performance targets

Q: How are the different Districts dealing with houses that don't meet the proposed Step of Step Code?

TOL: We cannot comment on other municipality's compliance protocols; however, I would assume that non-compliance with a requirement could create complications with getting a BP, occupancy etc.

Q: Have you ever designed or built a Step 4-5 home in colder climate zones than Vancouver? ie: interior of BC

NB: No, not personally.

LC: No

Q: You tuck tape your windows? I've never seen that.

NB: N/A to Foxridge Homes

LC: We tape our windows with high performance tape. Tuck Tape is not a product I would use to tape the windows. We purchase our tapes from Siga or 475 High Performance Building Products.

Q: Would you ever consider building a fully electrified home?

NB: It would not be our preference but isn't something we've ruled out as a potential requirement down the road. We are interested in alternative carbon-neutral fuel sources and how they might impact things in the future.

LC: Yes, we have. I am not convinced that our current infrastructure could support a sudden move to full electrification.

TOL: For more information, please see BC Hydro's Integrated Resource Plan on BC Hydro energy supply forecasts, their Base Resource Plan, and how they are preparing for change, including accelerated electrification scenarios: [BC Hydro Integrated Resource Plan 2021](#)

Q: What's the best method for installing and sealing windows to meet Step 4-5?

NB: If you're doing a good job now, chances are you don't necessarily need to change anything when building to Step 4 or 5. If you think there's room for improvement, you could always reach out to an envelope engineer, and they can draw up some details for you.

LC: Installation will always be manufacturer's recommendations. We prefer to use high performance tapes to seal the interior and exterior of the window.

Q: As an EA and home designer I completely agree with the concept of IDP and I push for this on every project we work on however it's more often than not, especially out in the valley, that a homeowner doesn't have a builder in the planning phase let alone a heating contractor. Larry or Nicolas do you have any recommendations you can make based on your experience to help encourage people to get builders on board earlier?

NB: Not involving the right people during the initial stages of a project is going to be a significant hurdle for anyone to try and overcome. Building to the higher steps or other high performance building standards is not easy. The complexity of these homes is only growing, and the only way to efficiently build to the higher steps is to get the right people involved as early as possible. Anyone attempting to build a home under the Step Code or other green building programs needs to understand this as a basic requirement of the design stage for the home.

LC: If the builder has not been chosen during the design phase, it will need to be the architect/architectural designer who will need to instruct the homeowner. This may speed up the hiring of a builder. Once the architect designs a home that can't easily meet the requirements of the Step Code, they will start engaging the EA

earlier. The purpose of this seminar is to educate builders/architects to involve key partners earlier in the process.

Q: Larry, with an exterior EPS application and dew point outboard, what is your preference of location or method for the building wrap?

LC: I prefer a warm Air Control Layer so the building wrap is sandwiched between the plywood and the insulation. We make sure we tape to the foundation, tape to the windows and make it continuous by taping to the membrane that connects to the interior air control layer.