Innovations for High Performance Buildings

- This innovation is a process, or approach, for renewing or rehabilitating the enclosure of existing buildings.
- Involves looking for ways to lower the occupants’ energy consumption at low incremental capital cost.
- Can be applied to virtually any large building requiring building enclosure renewals or rehabilitation.
The process entails:

- Viewing the building as a whole
- Applying calibrated energy modelling
- Performing a cost-payback analysis for each energy efficiency measure (EEM)
- Tapping into utility incentive programs
- Implementing the bundle of EEMs that best fits the owners economic parameters
Case Study: The Belmont

- Residential building in Vancouver, BC, Canada
- Building enclosure near end of its service life
- The owners decided to proceed with a building enclosure renewal project in 2012, and RDH applied this process
### The Belmont: Example of EEM Options

<table>
<thead>
<tr>
<th></th>
<th>Simple Payback</th>
<th>Payback with Incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baseline: Double Glazed, Aluminum Frames</td>
<td>n/a</td>
<td>n/a</td>
</tr>
<tr>
<td>Double Glazed, Fibreglass Frames</td>
<td>5 years</td>
<td>&lt;1 year</td>
</tr>
<tr>
<td>Triple Glazed, Fibreglass Frames</td>
<td>14 years</td>
<td>6 years</td>
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</tbody>
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Outcomes

- The Belmont now uses 25% less energy annually than it did before building enclosure renewals
- The EEMs were implemented at the time of planned renewals, keeping the incremental cost of the upgrades low
- Replicating the success of The Belmont is an opportunity for the entire industry