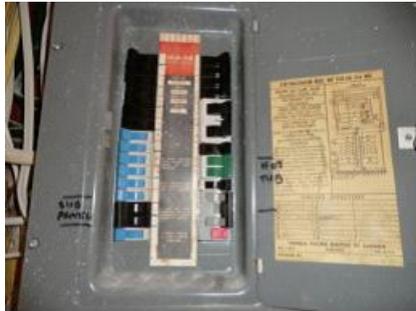


Electricity--- The heart of the property

Henry Liu CPBC 53115 Canada Association of Home and Property Inspectors of BC

It is undoubted that what a great invention the electricity is, which played an important role in our daily life. We could not imagine how we can go through in our lasting cold winter if the power lost even only 1 or 2 days.



Recently, we got the inspection request from the client who was especially concerned about the house power supply & distribution. Because his friend lived in this property before & told him the breakers are occasionally tripped. Therefore, we paid extra attention to the power service entrance, service panel and wiring. The building has 100 A service entrance which is typical for the house size under 3000 sf with 2 kitchen and 1 dryer. But we noticed that the home owner installed a hot tub in the back yard. In this case, if several high power appliances were turned on at the same time by coincidence, the breaker got tripped was understandable. Actually there is no safety hazard at this moment. The client wants to set up another set of washer and dryer for the suite. If so, the service power has to be upgraded to 125 A which could cost \$1500 to \$2000 mostly for the labor & material of electrician. Certainly, the application to BC Hydro is first.



There are 2 common methods of residential power supply in our area. One is the service drop from the street pole. The other is the underground service lateral which is often seen in the newer community. We could not get too much observation on the rear. But normally both of them are taken care by Hydro and seldom fail. However, Figure 1 apparently needs service by home owner in order to avoid power shock, fire and roof leaking. The key inspection is the control panel Figure 2. This is the heart of the building.

Even the older buildings mostly they have upgraded to breaker control panel. It is unusual to see the fuse panel in lower mainland BC now. The great benefit of the breaker panels is they can be reset right away once correct the incidences caused tripped breakers. By contrast, without spare fuse we cannot bring the power back to normal. The breakers should be clearly marked on panel. The service entrance capacity, the main breaker, the size and material of the wire must match. We have to make sure the connection are tight and no burn. Most main service entrance is 100/125 A in Lower main land. The aluminum wire is commonly adopted for cost consideration. For the same reason the AL wire is only allowed and could be used on the large appliance but has to be stranded rather than solid. Also the anti-oxidant grease should be applied on the exposed wire to stop Aluminum oxidation. The neutral and ground wire can only be connected in the main service panel. The interior distribution wires are mostly copper. The large appliances, such as range, AC, dryer, have to be served by individual appropriate sized breakers. The GFCI breakers have to be tested monthly for its function.

Some conditions we met during the inspection, Figure 3 the main panel was covered which cannot be inspected and operated; Figure 4 there was abandoned live wires in the control box which is not safe. Although it may not cause trouble right away, we suggest hiring licensed electrician to verify.