

The comprehension of cracks on building

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Speaking of the cracks on the building, most time the home owners or buyers will have some concern and get panic. People start to suspect the possible settlement, the damaged structure and even the safety hazards. Unfortunately settlement is often leading to cracks on the components of the building but what we can find cracks not always necessarily related to the settlement. Therefore, it gets tricky when evaluate the damage or defects of the building. If the scenarios are as apparent as figure 1,



Figure 1

Figure 2

Figure 3

which can be judged by commonsense, I would say the licensed home inspectors are not essential. But the truth is not that simple.

Recently, when I had an inspection on a detached home, the buyer expressed his concern on the cracks at the upper Corners of garage door Figure 1 & 2. After looking into the detail, I believed the cracks are caused by the undersized lintel which is overloaded for the living space on top of the garage. The bent trim board could be the evidence. But for over 10 year's history of this house, the cracks get little chance to develop. There is no other sign to show the building settlement at this moment. I told the buyer that the worry of high cost of fixing the foundation is minimal. So, when we diagnose the cracks, we have to watch the building components around and consider the age of the building as well as the configuration of the foundation and soil underneath.

Another kind of crack due to the process of concrete curing is very common. We call it hairline crack. These cracks can happen at any time after the cure of concrete. Generally they are not wider than $\frac{1}{4}$ " and always can be observed from head to tail which means from the widest to vanish. Normally they do not have any effect on the structure but we should not ignore them especially on the special position. Monitor and precaution have to be given in order to avoid damaging the related parts of the building. Ex. Figure 4, this crack shows on the crawl space concrete foundation wall. When I crawled inside, I paid the attention to this position. Luckily there is no sign of moisture and water intrusion all around. Accordingly, I suggest plugging up the crack to stop the potential moisture path, in addition, watching and following up the change of this crack ex measuring and documenting a specific



Figure 4

point on this crack every month. At the same time because of the sign of foundation wall heave; there could be some problem on the perimeter drain tile. With the close monitoring, the clients may ask the licensed drainage technicians to do a detail evaluation. From my point of view, we do not need to worry too much on this kind of cracks but analyse the potential damage and adopt suitable remedy in time is necessary.

We are also familiar with the cracks on stucco which usually appear around doors, windows and corners of walls. These won't hurt the structure but regular paint and maintenance are essential to avoid getting worse. The interior drywall may have cracks as well, which are normally caused by the concentration of stress the same as that of stucco. I recommend having it fixed by the specialist. Otherwise, this may be repeatedly show out and annoying

In a word, cracks could be everywhere. No panic no worry, to have them analyzed and remedied. You will get through.

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