WORKSHOP ON NOISE OF HOMES

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Summary

Towne, an accoustical consultant, provided a very ample checklist for the proposed condominium or apartment leaser of home buyer. The checklist can be used by lay individuals to evaluate property. The checklist covers extra noise sources, such as location of fire department, garbage collection point, recreational facilities, playgrounds, swimming pools, freeways, etc. The type of noise producing equipment that is found in the home is covered, such as air conditioners, garbage disposal systems, the rubbish chute in the condominium, the kitchen and utility exhaust fans, the flushing and filling of water closets, shower running, etc.

Schreiner discussed the rating of home air conditioning equipment. These are rated – there are a total of sixty manufacturers in the United States and each of these manufacturers submit anywhere from five to twenty-seven models each so there is a large listing of air conditioning equipment. There is a numerical rank ordering from 0 to 20; however, you have to be an expert to know how to then take those numbers and convert them to something usable. They are soon to use a method of rating so that one can determine how many dBA will exist at your property line. The spread of noise from the various models and manufacturers varies from 49 to 89 dBA at 1 m.

Even though a house has excellent airborne sound isolation, a structural path may completely defeat that capability. There is considerable improvement by going from a 50 sound transmission class wall to as high as 59. Sampling of excellent walls in good construction throughout the U.S.A. showed that 59 is the highest found in a commercially available structure, as offered by a builder. This particular wall was a packaged modular type construction which makes it also very unique because you would think that a custom design would have a capability of doing it better. However in this case, these are modular construction where each apartment is inserted like a pigeon hole by itself, and another one stacked on top of it and laid side by side, so that the 59 was indeed an excellent achievement of airborne sound. When the appliances were evaluated it was found that the shower running in a normal load generated a 74 dBA in the room where the shower was, and in the room horizontally adjacent to it the level was as high as a 54 dBA even though we had this 59 STC wall separating the two. Theoretically the level should have been considerably lower, now the reason it wasn't was the fact that the piping coupled to the shower head was solidly anchored to the structure and the entire structure was radiating and causing the structural path to circumvent the excellent airborne capabilities. Thus, you cannot solely rely on airborne means to

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fully determine what the isolation level will be when dealing with plumbing noise, fan noise, etc. Guidelines are provided as to what kind of numbers to look for. Sleeping rooms should be provided with an environment that varies from about 25 to 35 dBA. HUD has established an upper limit of 45 dBA not to exceed 30 min in a 24 hr period of time.