Ask Jon Eakes

Venting a mouldy basement.

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Last year we shot a special Spring Clean-Up show and in that show we cleaned up some mould on the lower walls of one of our viewer's basement. Recently we went back to permanently solve that problem by installing an exhaust fan that would draw the cold moist air off of the basement floor, doing a better job than most de-humidifiers. You can purchase an exhaust fan unit specially designed for this job called "Humidex", but in this basement it was going to be extremely complicated trying to get the ductwork out of the basement so we opted for a more flexible in-line fan.There was a basement bathroom exhaust fan already in the basement, but it was pulling air off of the ceiling and obviously not removing the moisture from the living room floor in the other end of the basement. However it did provide us with a duct that already snaked it's way to the outdoors. It had a small 3 inch flexible duct that was quite long and had lots of bends in it, certainly not ideal, but air did move through it. To replace it would have required major renovations upstairs. We decided to leave the bathroom fan operational and simply cut into the ductwork with a "Y" type of joint and then put in a powerful "in-line" fan that would draw it's air off of the floor and be controlled by a humidity sensing controller.The first photo shows you the layout of what we were going to do. It was important to install back-draft dampers in both lines so that if either of the fans went on, it would not blow the exhaust back down the other fan's line. This is exactly what you need to do whenever two fans use one exhaust hood.The Aeroflo in-line fan simply hangs from the ceiling any place that is convenient. This fan used 4 inch ducting -- not too good going into the 3 inch exhaust line, but that is why we used a slightly more powerful fan than we would have needed if we had a direct 4 inch exhaust. Note that the exhaust grill is being placed as close to the floor as possible. We even put the humidistat switch almost at floor level as well to make sure that the fan would not quit until we dried out that carpet.We had Keith my electrician friend from Accurate Electrical in Aurora, Ontario check out our electrical options. There was room in the panel to bring a new line to the fan, but that would have required snaking through the walls. There appeared to be available junction boxes in that utility space, but it turned out they were 240v lines going to the two hot water tanks. They were not previously labelled as such so he wrote that on the boxes, just in case the next occupant tried to tap in for something, which could cause real problems. Finally he determined that the bathroom fan was on a line that could carry the extra fan without problems, so he brought the power over from bathroom fan switch. Make sure you plan not only the ventilation side of a project like this, but the electrical side as well.

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