



19 March 2014

Mr. Kai Curry
2753 Hennepin Av. S.
Suite 4
Minneapolis, MN 55408

Dear Kai:

I've taken a closer look at the existing floor assembly in your space at 2753 Hennepin Av. S. and what it would take to modify it to make it conform to fire resistance ratings in the current building code.

It is very difficult to know for certain the fire resistance and STC rating of the existing floor assembly for the space. In order to determine this it is necessary to find testing data on the exact assembly used. Unfortunately assemblies featuring plaster over wood lath haven't been used for many years so references in common usage today don't feature information on this assembly.

In order to modify the existing floor assembly to achieve a 2-hour rating, it would need to conform to an assembly that has already been tested. It appears that a base layer of 5/8" type X gypsum board would need to be installed over the existing ceiling in the commercial space below with another face layer of 5/8" type X gypsum board installed on resilient channels over that. This assembly also assumes one layer of 15/32" plywood subfloor as well as a layer of 19/32" plywood finish floor above. Since the original subfloor is composed of individual boards, I assume it does not meet the fire resistance of the plywood and would need to be removed and replaced in order to meet the finished floor elevation of the rest of the second floor. This would obviously be a huge undertaking. But since you don't have access to the commercial space below, retrofitting that ceiling would seem to be even more difficult. The existing suspended ceiling would first need to be removed to access the floor assembly and the work would likely take a week or two at a minimum, which would of course disrupt the operation of the business currently operating in the space.

Even attempting to achieve a 1-hour rating would encounter the same difficulties. You would only need one layer of 5/8" type X gypsum board installed on resilient furring channels below but this would still require access to the space and cause prolonged disruption to the business below. This assembly also requires one layer of 5/8" interior plywood with a layer of 3/8" particle board over this. I'm presuming that this would again necessitate removing all of the existing subfloor and finish floor in the space first in order

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to align with the existing finished floor. To achieve a STC rating of 50 with this assembly you would also need to install 3 ½" thick glass fiber insulation batts between the joists after the existing floor and subfloor were removed. The 2-hour assembly described in the modification above does not have a STC rating but presumably the same rating of 50 could be achieved by adding the insulation.

I hope this helps. Let me know if you have additional questions.

Sincerely,

A handwritten signature in black ink, reading "Joseph G. Metzler". The signature is fluid and cursive, with the first letters of each word being capitalized and prominent.

Joseph G. Metzler, AIA, CID, LEED AP
Principal