

February 24, 2017

Gilbert Brothers Commercial Brokerage Company
1205 SW 18th Avenue
Portland, Oregon 97205

Attention: Molly Mink Liston
Reference: Kenton Korner

Project: 17-13

Dear Ms. Liston:

This letter summarizes the acoustical review of floor/ceiling and demising wall assemblies for the Kenton Corner project at 8355 North Interstate Avenue in Portland, Oregon. The existing building is to be retrofitted for affordable housing. Sound transmission class (STC) and impact isolation class (IIC) performance is determined for proposed assemblies.

1. Wall Assembly

- 1.1 The existing demising wall consists of 5/8" gypsum board on 2x4 wood studs spaced 16" on center and a layer of 5/8" gypsum on the opposite side. Stud cavities are filled with batt insulation. Performance is calculated at STC 35 based on similar laboratory tested wall assemblies.
- 1.2 The planned modification to improve the wall sound isolation is to use a proprietary adhesive (Green Glue) to add a third layer of gypsum to one side of the existing walls. Two tubes of adhesive are used for each sheet of gypsum.
- 1.3 Orfield Laboratories, Inc. test OL 05-1046 was performed in October, 2005 on a wall consisting of 1/2" gypsum board over Green Glue on 1/2" gypsum board on 2x4 studs, spaced 24 inches on center and 1/2" gypsum board (alone) screwed to the opposite side of the studs. Batt insulation (R-13) was installed in the stud cavities. This wall performed at STC 52.
- 1.4 Based on the referenced test, the proposed modified wall at Kenton Korner is calculated to perform at STC 50 or better.

2. Floor Ceiling Assembly

- 2.1 The existing floor/ceiling construction consists (top to bottom) of a finish flooring over $\frac{1}{4}$ " plywood on 1x6 tongue and groove decking over 2x10 joists spaced 16" on center with a single layer of $\frac{5}{8}$ " gypsum applied directly to the bottom of the joists. Three inch thick batt insulation is installed in the floor joist cavities. The calculated performance of the existing floor/ceiling is STC 42 and IIC 35 based on similar laboratory tested assemblies.
- 2.2 The addition of a second layer of $\frac{5}{8}$ " gypsum at the ceiling would increase the calculated STC rating to 43.
- 2.3 Using resilient floor coverings would improve the IIC performance of the floor/ceiling. A finish floor of 25 ounce carpet and bonded foam carpet pad ($\frac{3}{8}$ " thick, 6.5 pounds per cubic foot minimum density) would increase calculated IIC to 55. The carpet would not measurably increase STC.
- 2.4 A finish floor of cushioned vinyl (Marmoleum Decibel or equivalent) would increase calculated IIC performance to 40. The vinyl is not expected to measurably increase STC.
- 2.5 Typically, footfall impact noise is the most common cause of complaints in floor ceiling system isolation. Using a carpet and pad as specified above would significantly mitigate footfall and other impact noises.

Sincerely,



Todd A. Matthias, P.E.
Acoustic Design Studio, Inc.



EXPIRES: 12-31-2018