

June 22, 2020

To Whom It May Concern

Re: 1411 Iroquois, Detroit, MI
Structural Condition of existing addition at rear of house

Dear Sirs:

This will follow up a review of the existing conditions at the addition at the rear right corner of the original house.

A number of defects or symptoms are noted to be present at the addition construction:

1. The foundation at the section of addition nearest the house, presumably the oldest, was exposed with a shovel and found to be approximately 12" below grade. This foundation depth does not provide frost protection for the structure and typically results in seasonal foundation heaving and movement of the structure above.
2. Reportedly at some time in the past, the existing foundations were "sand jacked". There is no evidence that such a procedure was effective in this case, nor would this be a prescription that would be offered as a valid solution to the problems currently present with this structure.
3. The existing construction has settled, causing a substantial floor slope. The amount of floor slope (approximately 6" in the length of the addition) far exceeds a normal allowance for slope. (typically 1/4" in 10 feet).
4. The existing windows are racked due to settlement of the structure and do not operate. This is an indication of more recent than historical settlement.
5. The floor of the screen porch is sloped due to poor framing and foundation conditions below.
6. The support posts of the porch area consist of two brick piers and one 4x4 post. The brick piers are not protected against water intrusion and are subject to serious freeze-thaw damage. The wood post appears to bear on top of a concrete slab section, and is not plumb. These structural elements are inadequate for long term support of the structure above, with additional frost heave issues due to inadequate footings.
7. Cracks in the exterior stucco finish materials are present indicating movement due to settling and foundation issues.
8. Wood beam framing above the lower open area of the porch addition is subject to moisture damage due to the method of construction and lack of flashing detachment from the stucco finish.


9. Angle bracket bracing using wood materials, as this addition is built with, is not a form of adequate structural wind bracing support for the structure.
10. Interior wall cracks indicate foundation movement.
11. The purpose of the secondary roof structure above a part of this addition is unknown. This may have been added to address settlement problems which caused substantial roof leakage events.

Based upon the above described visually apparent defects and symptoms, it is my professional opinion as a structural engineer, with substantial experience in dealing with single family residential homes, both old and new, that the addition portion of this home has been and is currently failing in terms of structural adequacy for a residential property.

I would advise removal and replacement of the addition, with a properly designed and constructed foundation system, which can only be done with removal of the construction in place.

Should other structural questions arise during the remainder of the project, please call.

Sincerely,


Allen R. Decker, PE.
Michigan PE # 6201024238, expires 10-31-20
Artisan Engineering LLC

