June 3, 2016

Austin Historic Preservation Office
Planning and Development Review Department
P.O. Box 1088
Austin, Texas 78767

RE: 1715 Summit View Place – Structural Evaluation

To Whom It May Concern:

At the request of Ms. Jennifer Marsh, on April 13th, a representative of this office visited the above mentioned residence to observe existing conditions and provide a structural assessment of the existing structure. The residence can be described as a two level conventionally framed structure with a clay tile roof supported on a structurally elevated floor system with a crawl space beneath built in 1932 according to Travis County appraisal records. The foundation is comprised of wood floor joist supported by wood beams that bear directly on a variety of built up CMU blocks, square concrete plinths and a board formed concrete wall with assumed strip footing along the perimeter seated at an unknown depth below grade. The entire residence is clad with an exterior stucco façade. Our investigation included visual observations of the exterior perimeter of the building from grade level, primarily the stucco façade, visible roof lines, exposed dilapidated portions of the perimeter foundation elements such as rim joist or sill beams, visual observations of a portion of the crawlspace below the building and visual observations of the wall board and ceiling finishes on the building's interior. Ms. Jennifer Marsh has also provided *Structures* with a subsurface investigation report from *Holt Engineering* to assist in our investigation.

This observation is not a full code or compliance inspection. This office has performed a visual, practical and non-destructive observation of the properties present condition and provides in this report a summary of observed items. Any area that was not readily accessible or visible is not included in this report. Our office representative is not required to move such items as, but not limited to, panels, furniture, carpeting, siding, personal belongings, etc. in order to perform this observation. This observation does not cover items or conditions that may be discovered only by invasive methods. It is not intended to be technically exhaustive, nor is it intended to reveal all existing or potential defects. No removal of materials or dismantling of systems was performed under this observation.

The following serves to describe notable items that may or may not be a result of structural performance. Items will be described and commented upon. For purposes of description, the right side of the building when faced from Summit View is considered the west side of the residence.

UPPER LEVEL

An observation of the upper level revealed the structure to be experiencing differential vertical movement throughout visually evident by cracks in the interior gypsum board finishes around doorways and windows. Various exterior doorways and windows also show signs of extensive water damage in conjunction with distress cracks in the gypsum board finishes. The roof ridge line appears to be deflecting at the ends yet straight along the interior span. Minor undulation of the roof rafters were observed in various areas which may be attributed to the differential movement experienced at the

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foundation or shortcomings in the structural capacity of the framing. Water damage and apparent mold spots in the gypsum wall board finishes were observed along perimeter walls but not in any interior partition walls upstairs. It appears that water is being introduced by means of the cracks in exterior stucco façade and migrating between the cavities in the wood framing. Several areas of the ceiling gypsum board finishes have separated from the wood framing or have fallen down completely due to water intrusions. Water staining and wood rot at the masonry chimney stack as observed from the bedroom above the garage may be caused by deficiencies in the rear apron, back gutter or inadequate flashing at the roof level. Mold and other possible health hazards are of great concern within the framed cavity walls throughout the structure. With the exception of the differential settlement and water damaged wall board finishes along the perimeter, the upper level was structurally unremarkable.

LOWER LEVEL

The first level was noted to be undergoing differential foundation movement mainly along the perimeter. The structure's foundation is a pier and beam type system with the wood floor joist and beams being supported on a variety of foundation elements including CMU blocks, square concrete plinths, board formed concrete wall (at perimeter) and wood timbers stacked up on grade as observed from the crawl space access below the stairs. It appears that over time measures were taken to shore up areas of the floor that were experiencing deflections by introducing stacks of CMU blocks as needed. The square concrete plinths and concrete board formed wall elements are indications of a more substantial attempt to stabilize the structure but these elements were either not seated at a proper depth below the crawl space grade or poor site maintenance allowed for water to infiltrate the foundation perimeter activating the clay soils below which reduces the carrying capacity and promotes settlement. The majority of the residence has experience differential settlement to the point where the floor framing rim joist and sill beams have significant deterioration due to its proximity to grade. Although I could not verify that this deterioration has extended up into the bottom of the stud framing for the walls, it is very likely that a number of studs have been damaged near the bottom of the perimeter walls. A significant amount of ponding water was observed in the crawl space which is being introduced by means of voids in the wood framing and stucco façade at grade level along the perimeter in a few areas. The elevation of the building as a whole will need to be raised substantially to achieve proper clearance of the wood framing from grade and to provide ample ventilation of the crawl space per the requirements stated in the 2012 edition of the International Residential Code. Although bearing depths of existing foundation elements were not verified, it does not appear that a deep foundation system is currently in place. According to the subsurface investigation performed by *Holt Engineering*, the underlying existing soils are comprised of brown fat clay, greenish tan clay and gray fat clay which are all consistent with the "Del Rio" geological formation which are highly expansive soils that will undergo large volume changes with changes in soil moisture. Although we have not verified the bearing depth of the existing foundation elements, we are certain that the current system is seated within the top six to ten feet from existing grade which according to the geotechnical report consist of residual soils. In general, residual soils will show considerable variation of engineering properties from top layer to bottom layer and this is what we believe is the cause for differential movement, especially across the perimeter of the foundation. The foundation recommendations contained in the geotechnical report specify that all structural loads should be carried on drilled under-reamed piers seated at a minimum depth of 22'-0" below existing grade to limit the differential movement to one inch or less. Given the vintage of the existing residence and the requirements suggested by the geotechnical investigation, we believe that preparing the existing wood framing portion of the foundation to be elevated and shored up for installation of deep support piers would be a monumental task if at all possible. Although plausible that this may be achieved along the perimeter of the existing residence, it is not feasible to suggest that the interior support points can be replaced with a deep drilled pier element due to the limitations of the crawl space.

It is the opinion of this office that the residence in its current state is structurally unfit for occupancy. The structural soundness of this residence in its current state may not be the most significant cost in the overall picture of restoring this property. Other factors that should be evaluated but are not in our realm of expertise include, plumbing, electrical, site drainage, waterproofing and roof coverings. Given the

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aforementioned conditions contained in this report, a portion of the residence' structural elements remain salvageable and repairable but there remains a substantial amount of required structural repair. Raising the existing elevation of the structure to the proper level above grade per code and leveling the foundation elements will require substantial jacking of the structure and may be an unreasonable consideration. This will most likely result in significant shifts in the wall finishes on the interior and exterior, distortion of window and door openings that may have been adjusted over the years to accommodate the foundation movement, and perhaps breeches in the roofing membrane at various locations where planes intersect. Considering the extensive degree of repairs required, we feel that the cost of repairs would be unreasonable to satisfy the required structural standards of the building. Although not under the scope of this evaluation, it is recommended that a mold inspection be provided to further assess the level of deterioration of the structure due to pervasive indicators along the perimeter walls and ceiling finishes. Extensive site management efforts will be required in order to ensure that water will not continue to be introduced into the crawl space of the residence.

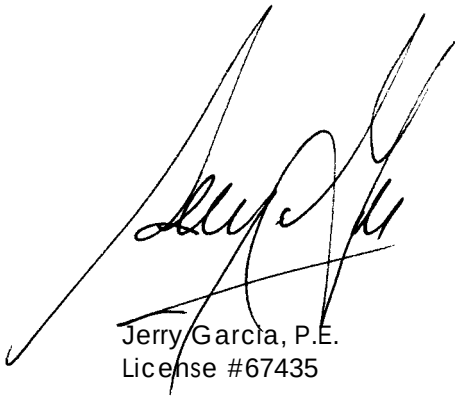
The assessment consisted of a one-time visual observation only. Neither the assessment nor this report is intended to cover mechanical, electrical or architectural features.
Furthermore, the owner agrees to limit Structures PE, LLP's (Design Professional) liability to the owner due to the opinion such that the total aggregate liability of each Design Professional's liability to all those named shall not exceed the Design Professional's total fee for services rendered on this project.

Please notify this office by registered letter within two weeks of this date stating objections to or questions regarding the information contained in this letter. If none are received, it is concluded that no exceptions are taken regarding the professional opinion rendered or this liability limitation statement.

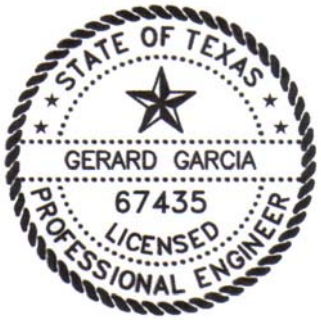
I appreciate the opportunity to assist you with this matter. Please contact this office should you have questions regarding the above mentioned observation at 512-499-0919.

Sincerely,

Hector Ortiz
E.I.T #42989



Jerry Garcia, P.E.
License #67435



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Existing Structure Photographs

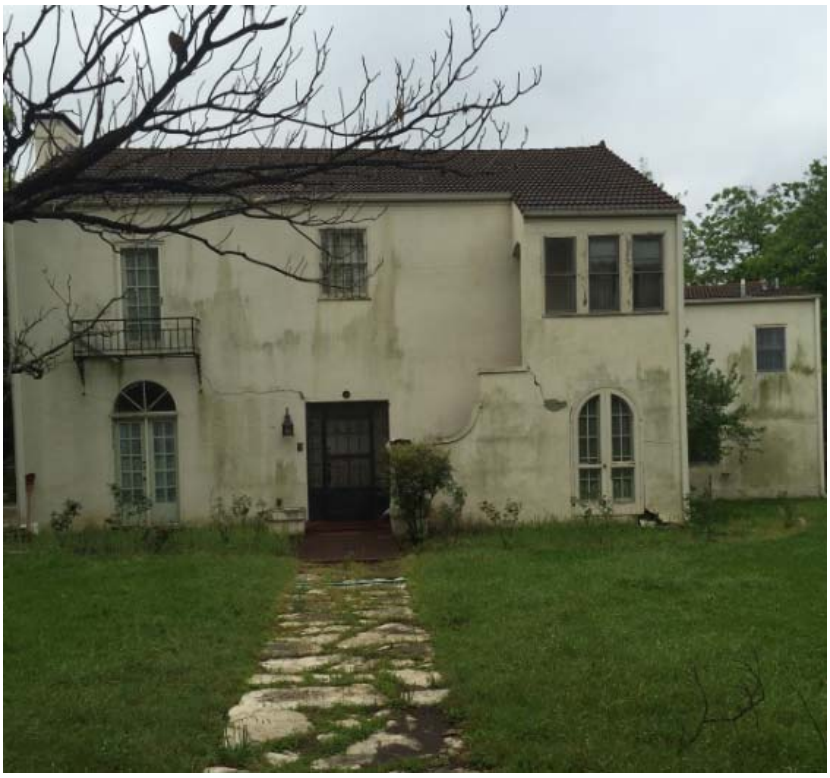

Photo 1: Front of house (viewing from Summit View Place)

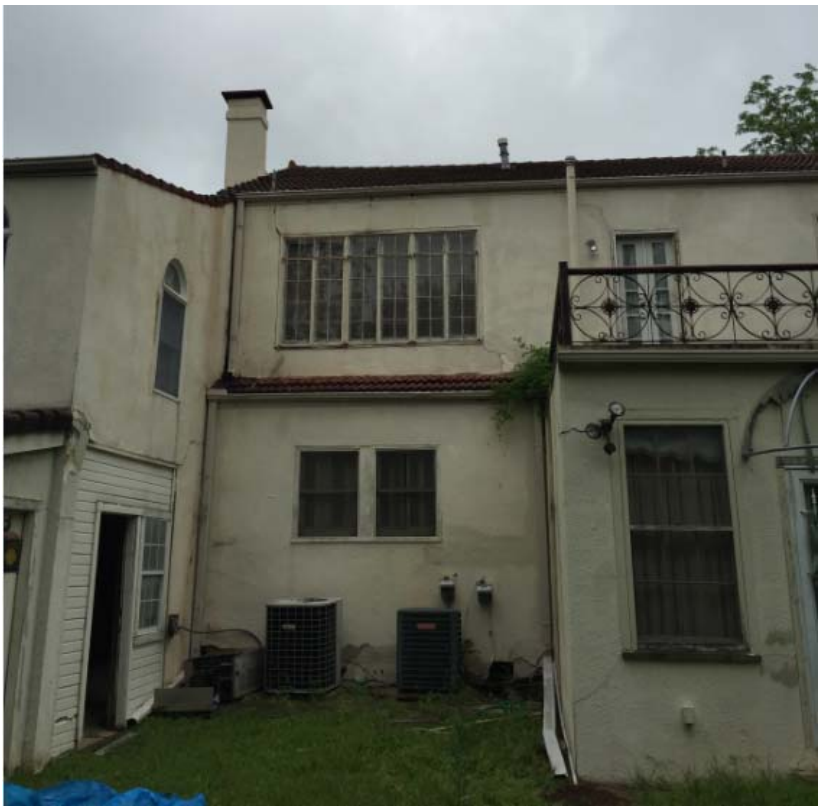

Photo 2: Back of house

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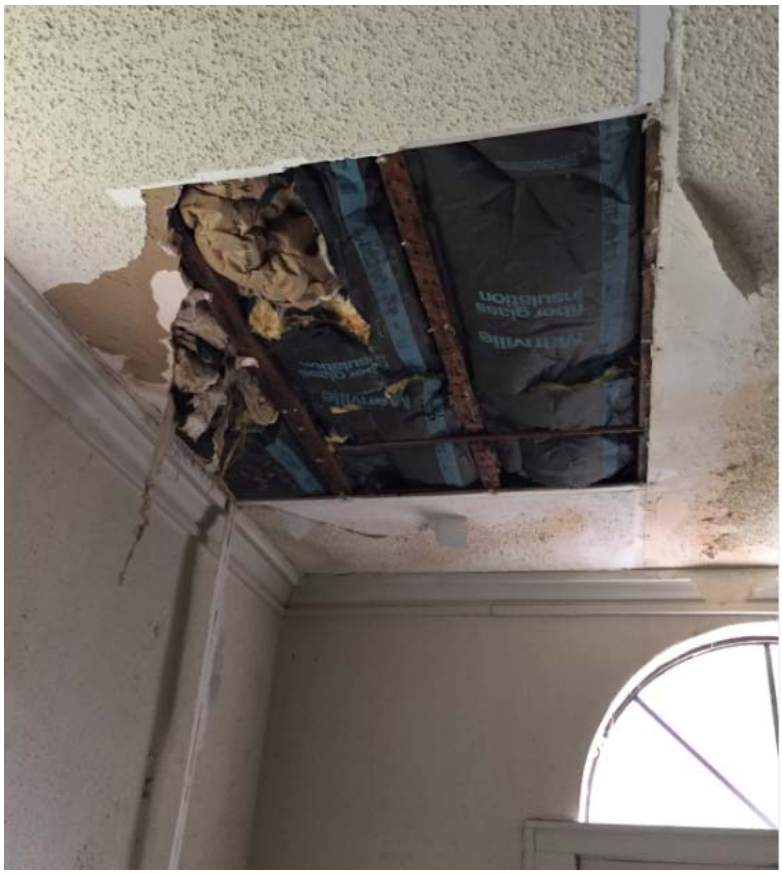

Photo 3: Potentially water damaged floor joist

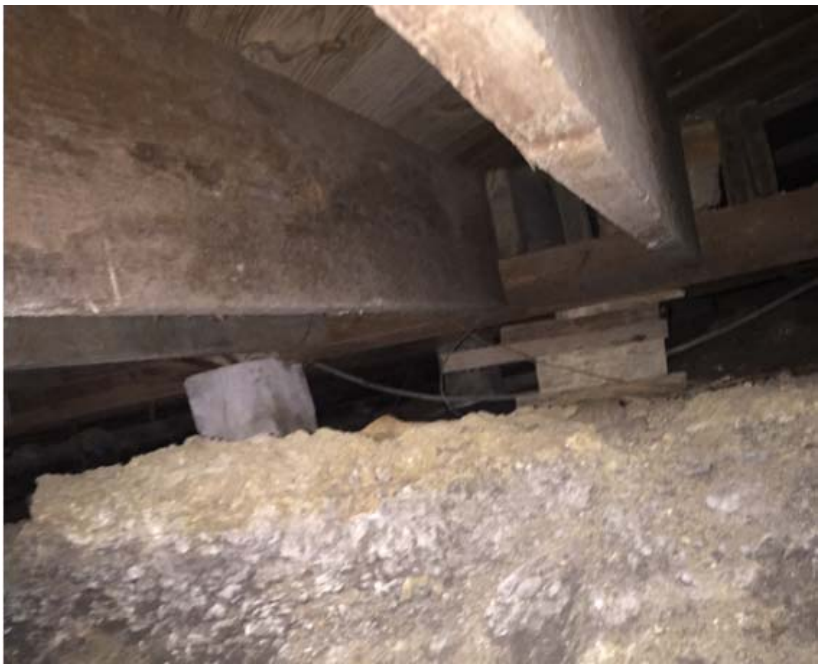

Photo 4: Stacked wood as foundation support; Listing concrete plinth not in contact w/ framing

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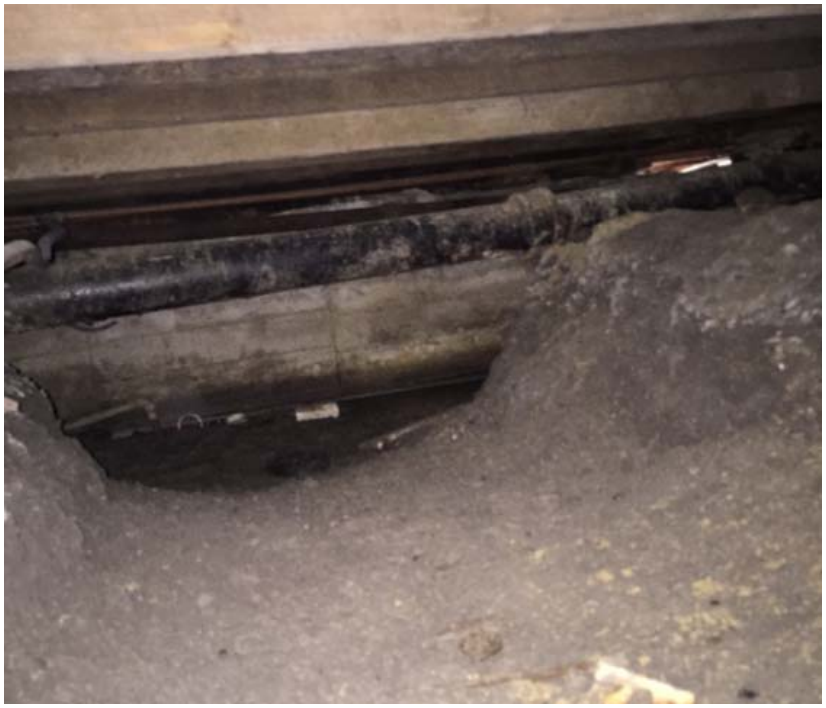

Photo 5: Board formed concrete wall along perimeter

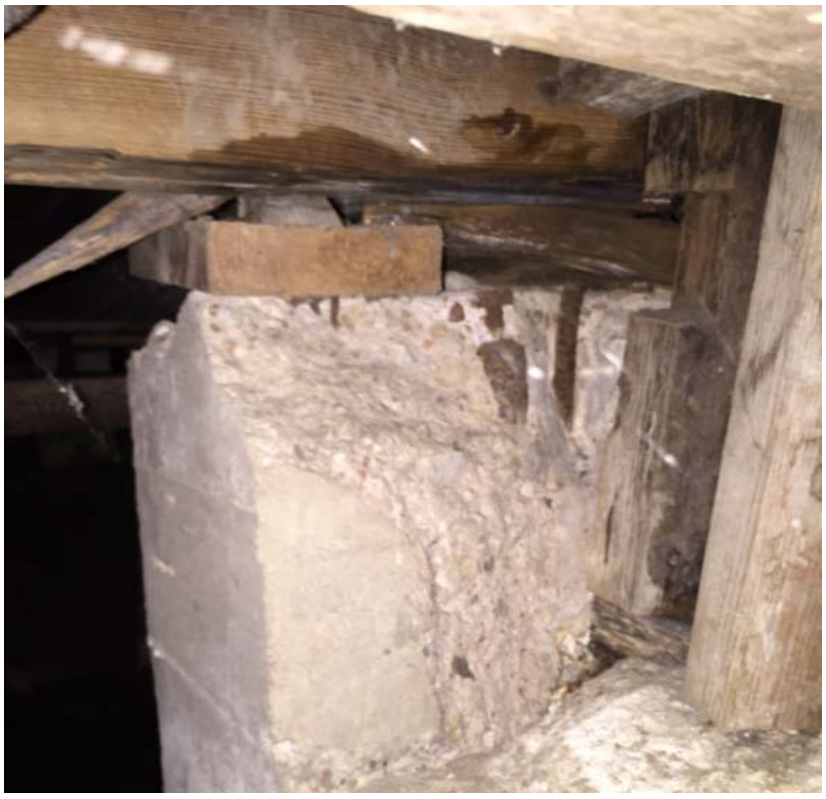

Photo 6: Damaged square concrete plinth with inadequate bearing surface

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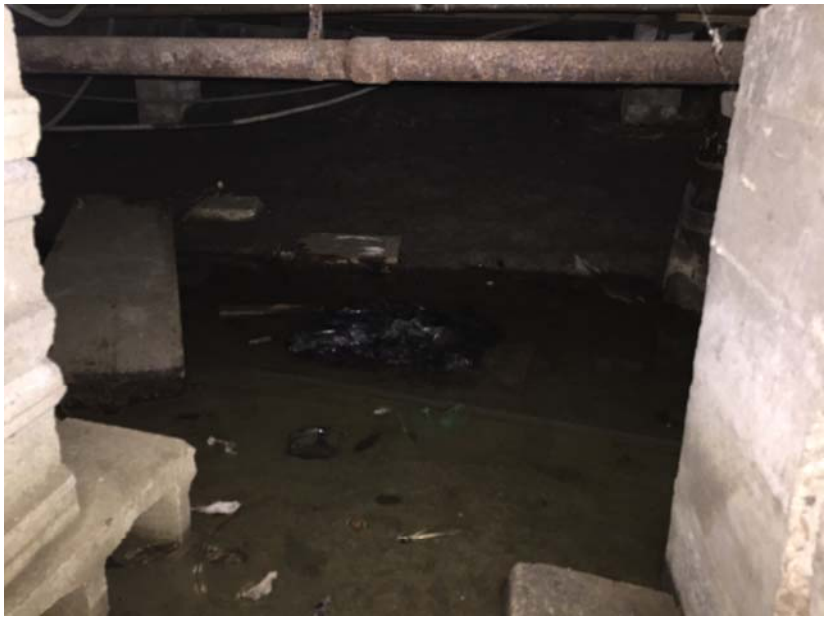

Photo 7: Ponding water observed in crawl space

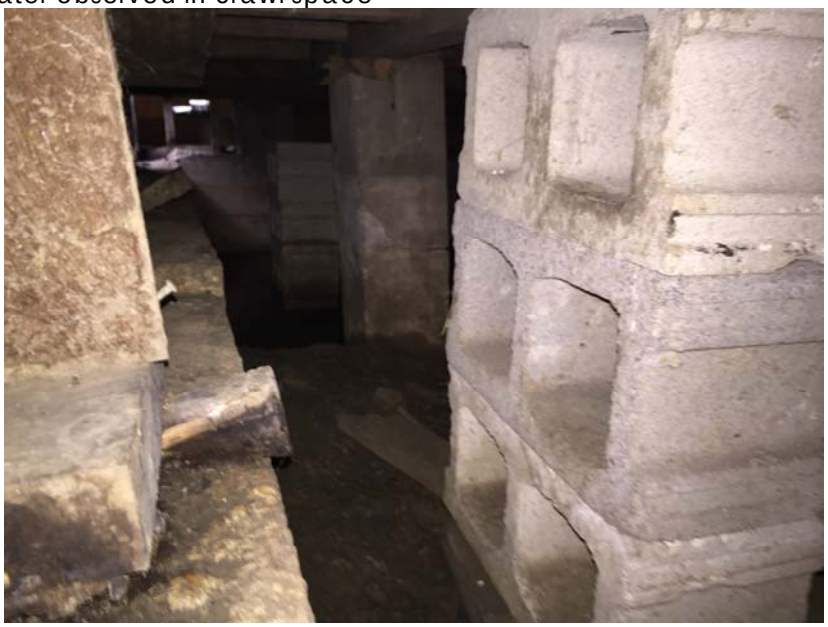

Photo 8: CMU blocks and concrete plinth supporting wood framing

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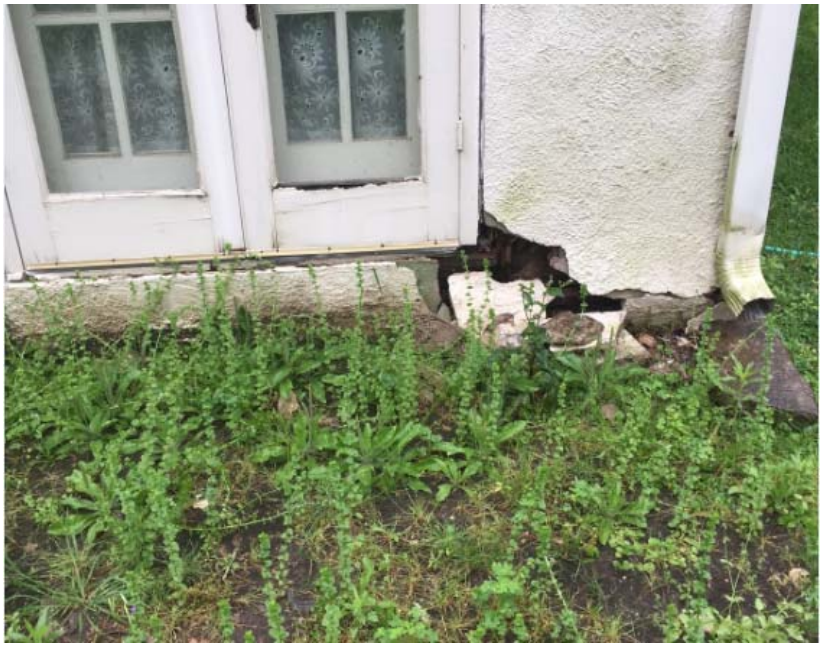

Photo 9: Void in stucco façade and dilapidated rim joist

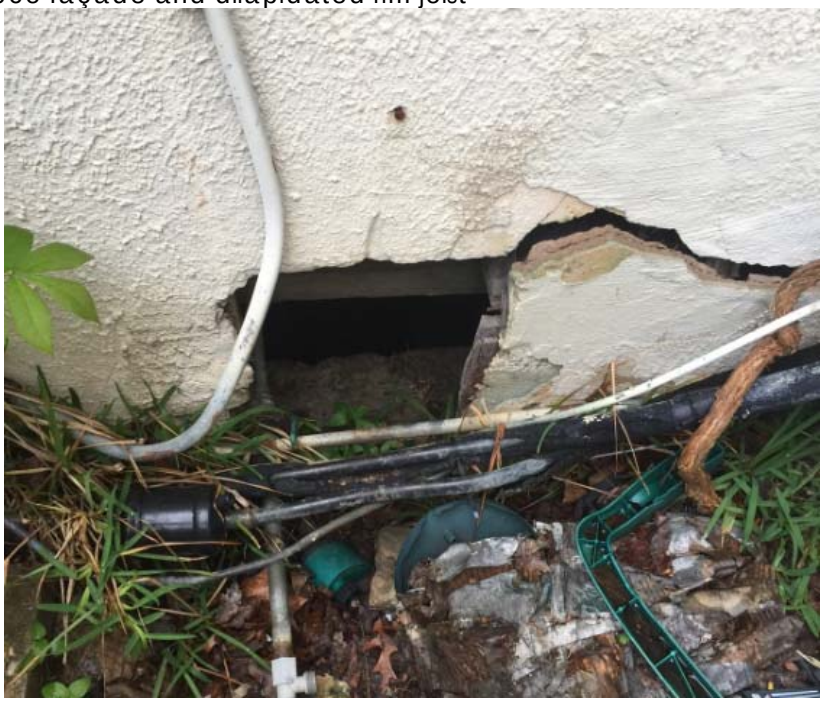

Photo 10: Void in stucco façade and perimeter rim joist at back of house near water faucet

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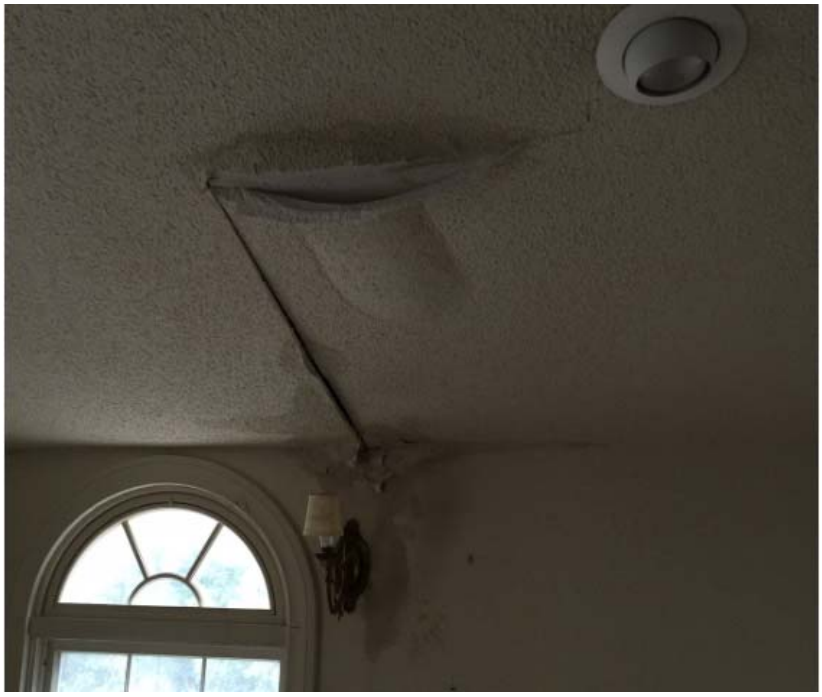

Photo 11: Water damage at wall and ceiling finishes

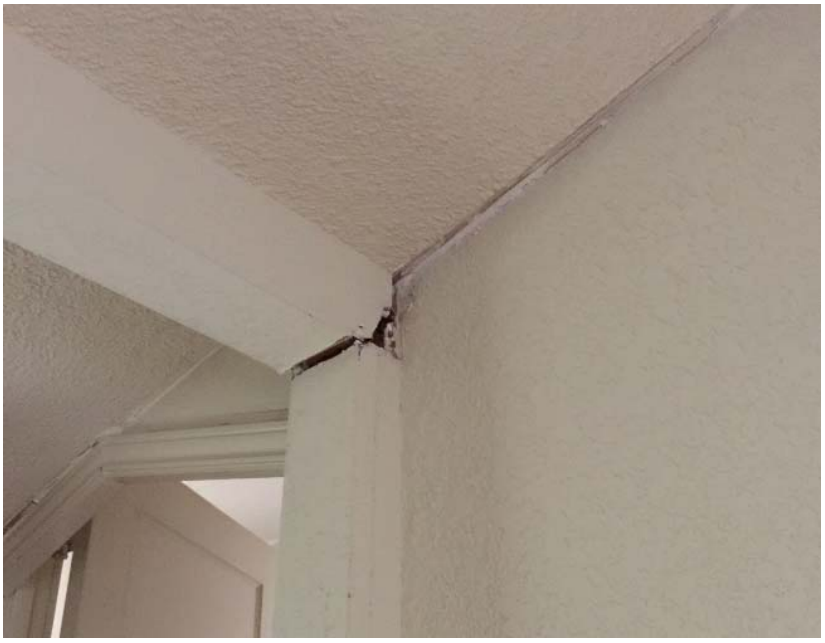

Photo 12: Large separation crack at connection of drop beam to wall column

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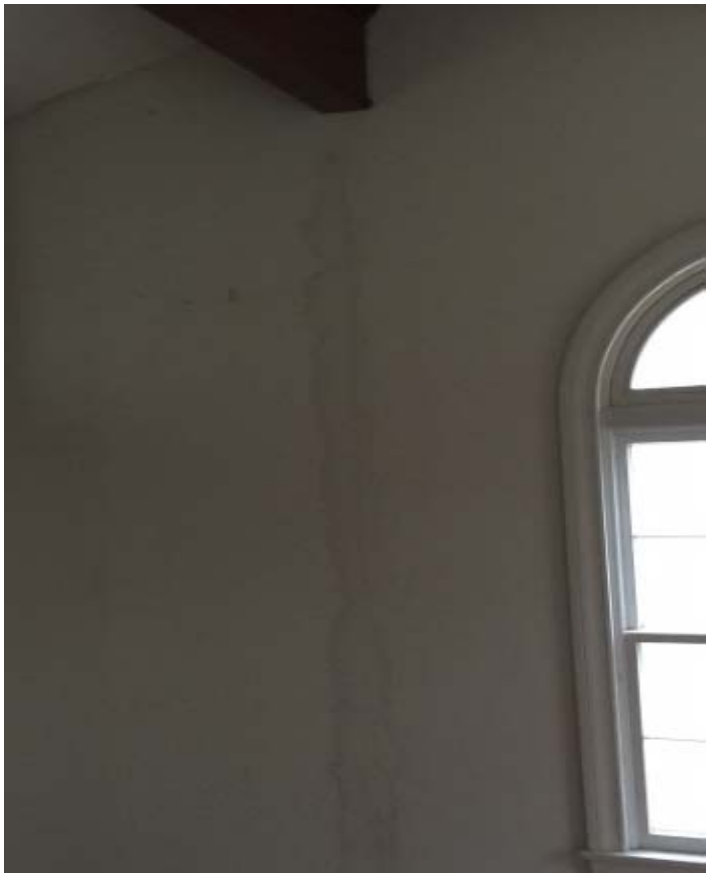

Photo 13: Water damage stains in gypsum wall finishes

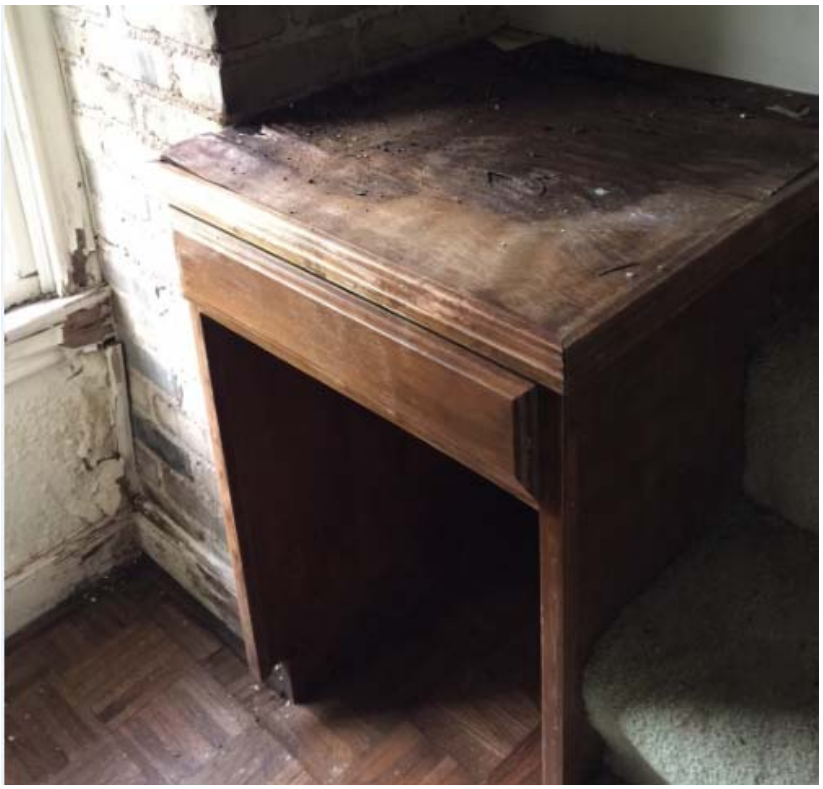

Photo 14: Water damage at chimney stack base

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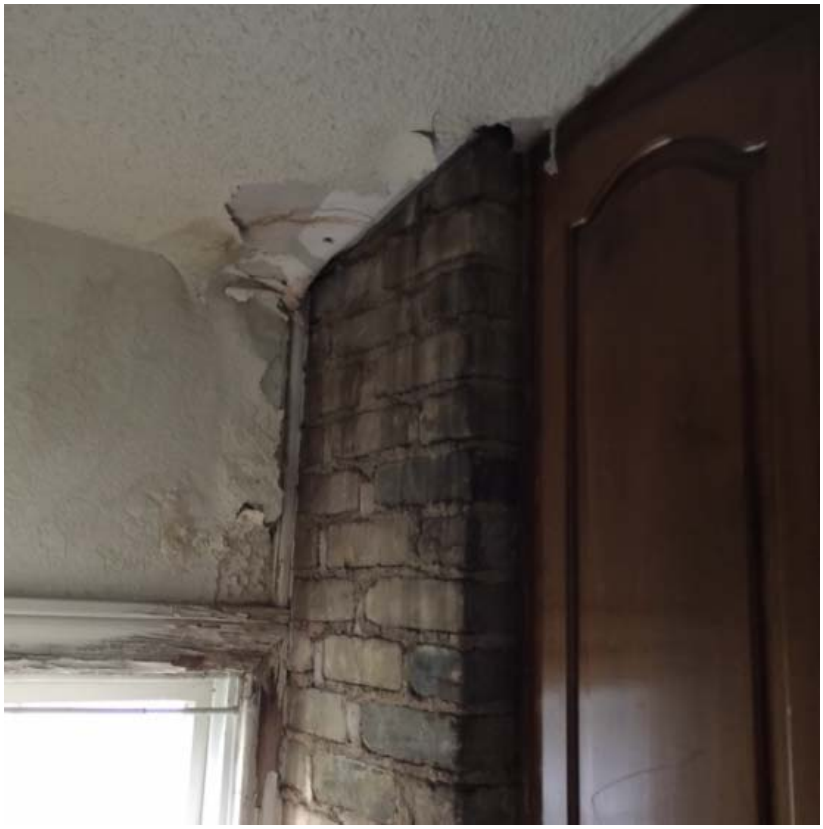

Photo 15: Water damage at ceiling line of chimney stack

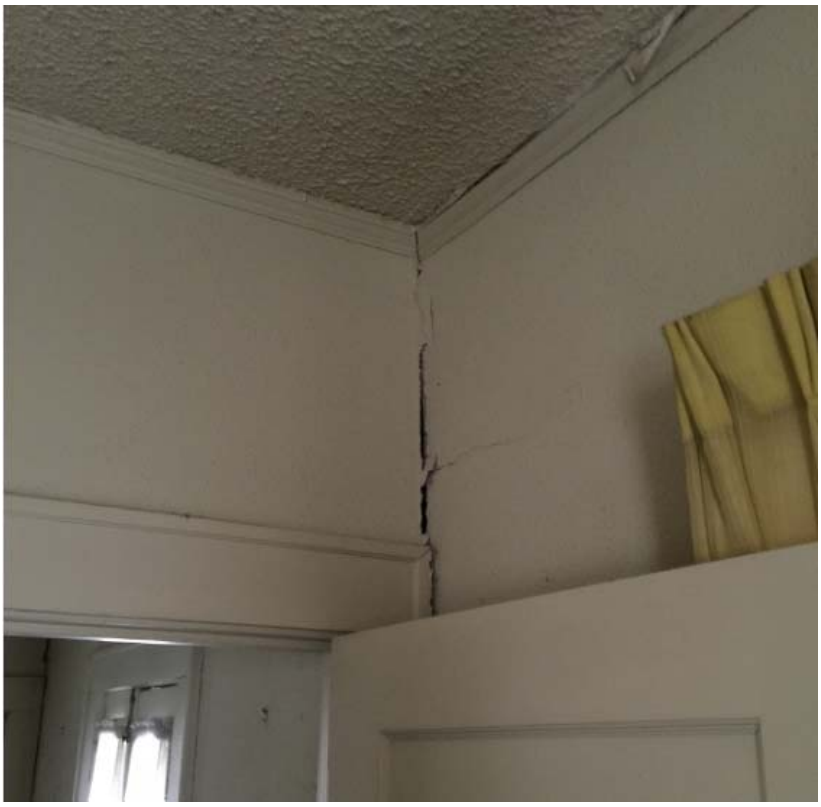

Photo 16: Large crack at door jamb adjacent to perimeter wall

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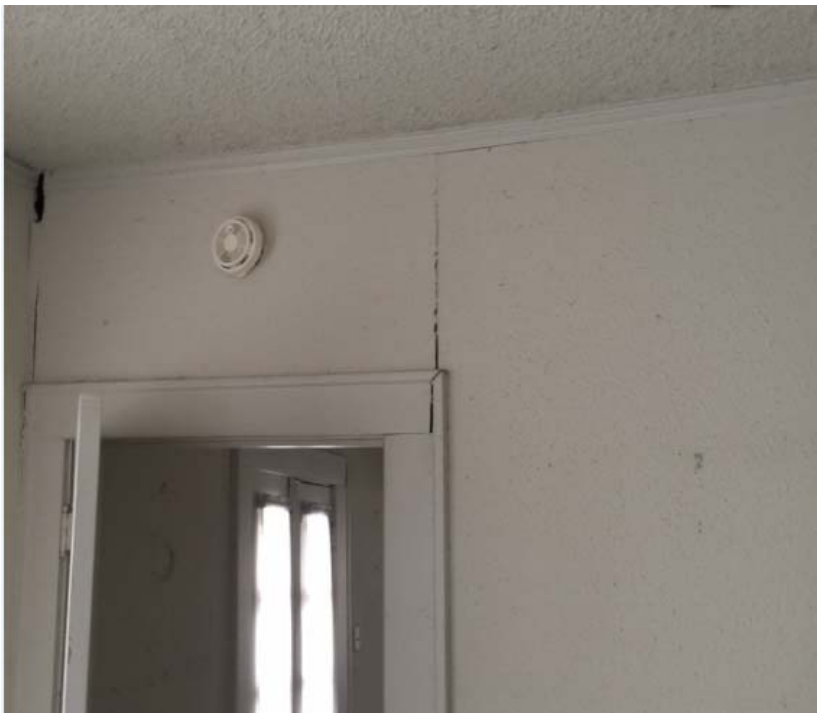

Photo 17: Distress cracks in finishes around door jamb

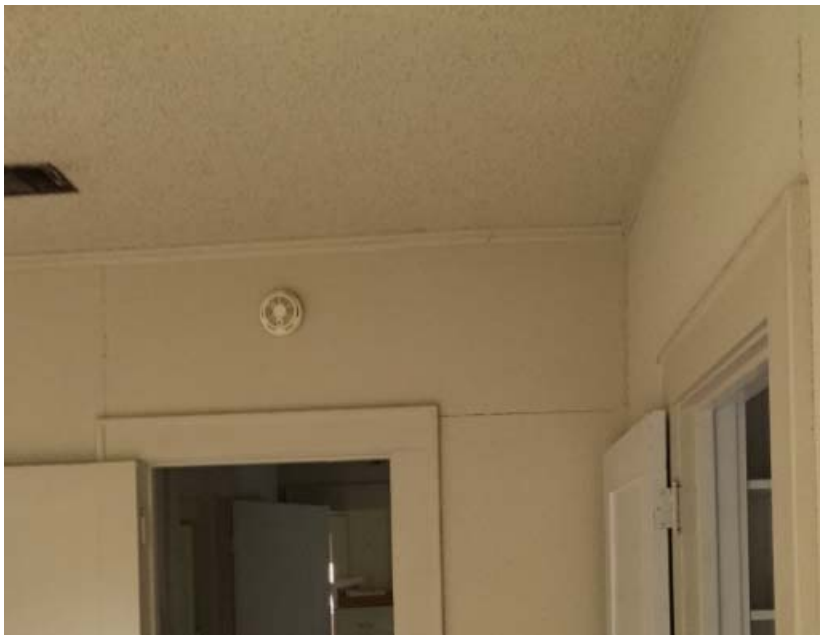

Photo 18: Distress cracks in finishes around door jamb

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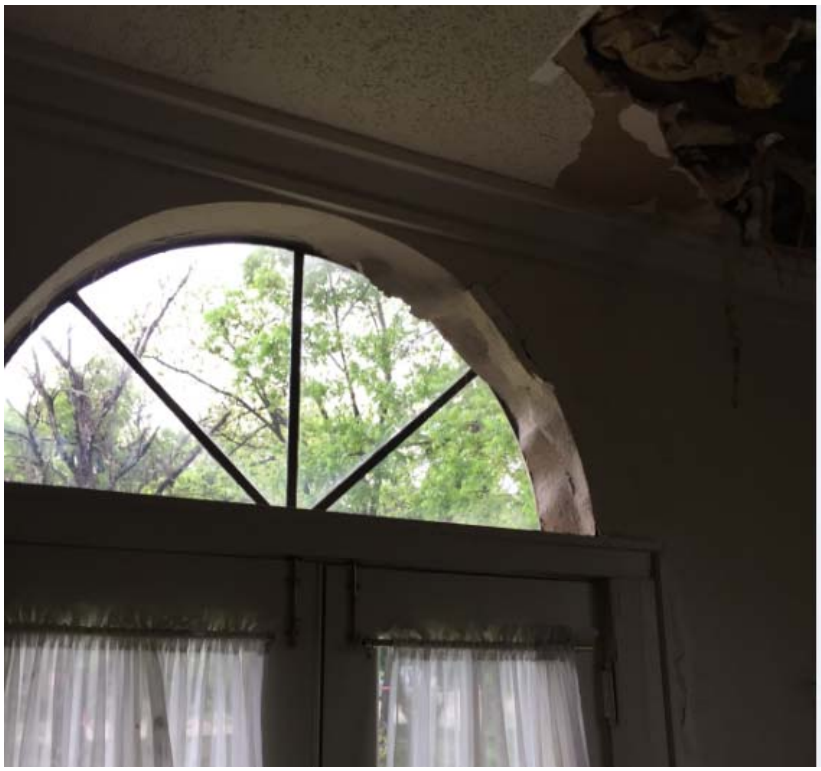

Photo 19: Water damage at semicircular window finishes and ceiling

Photo 20: Foundation heave at midspan of door threshold

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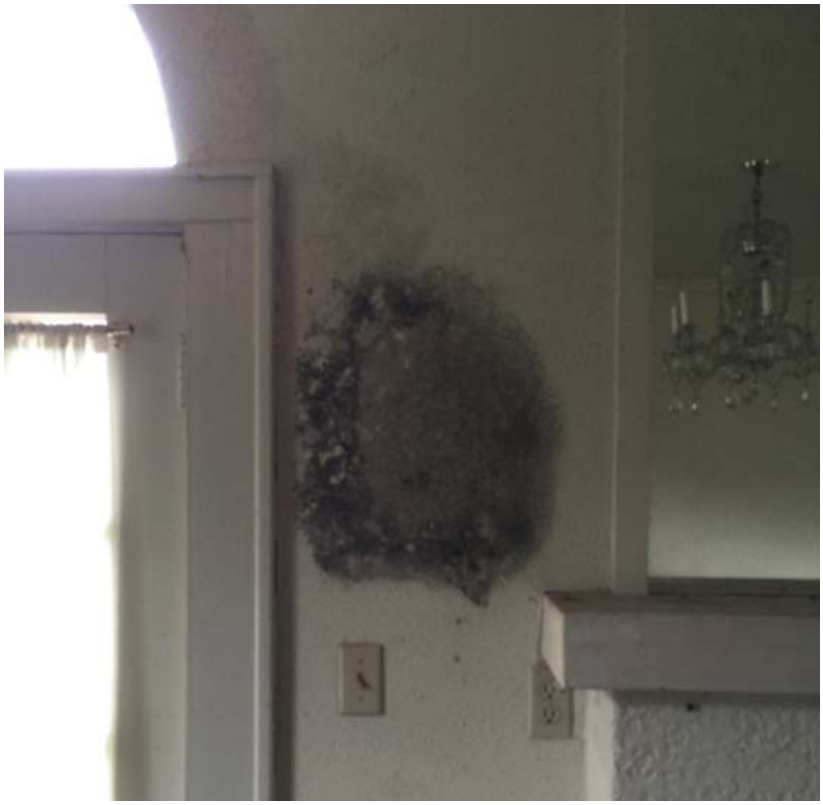

Photo 21: Potential mold colony within wall cavity

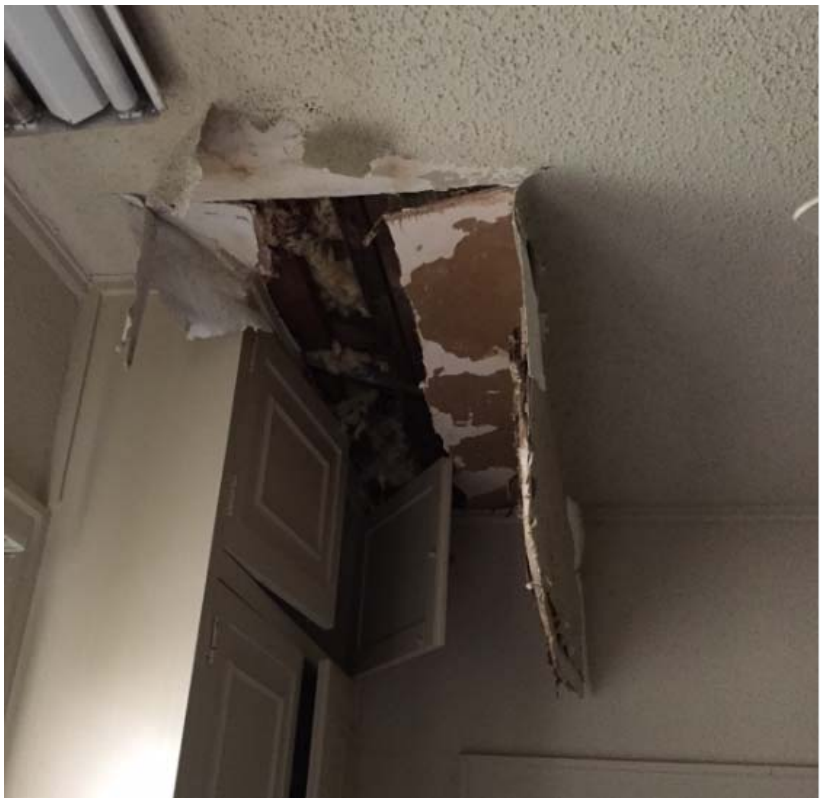

Photo 22: Ceiling finishes that have separated from wood framing due to water intrusions

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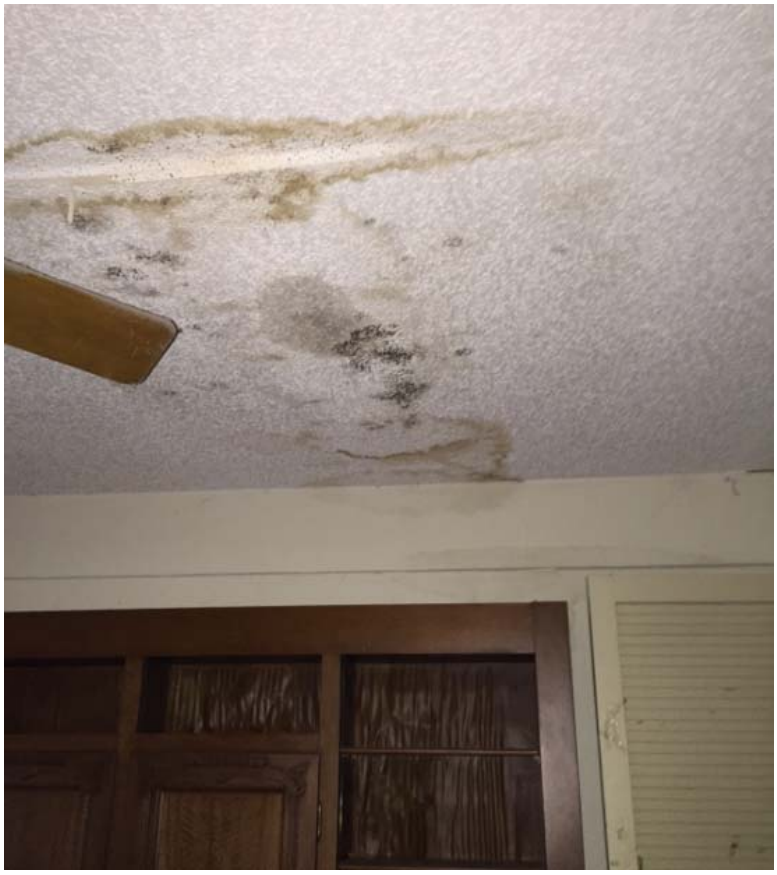

Photo 23: Water damage to ceiling and built-in cabinets being introduced from roof deck above

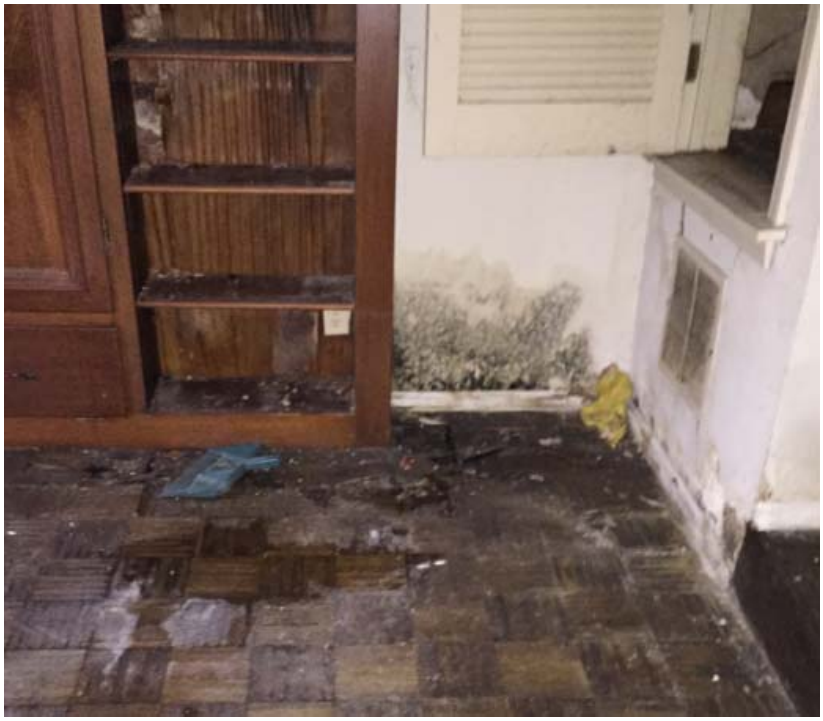

Photo 24: Potential mold colony within wall cavity

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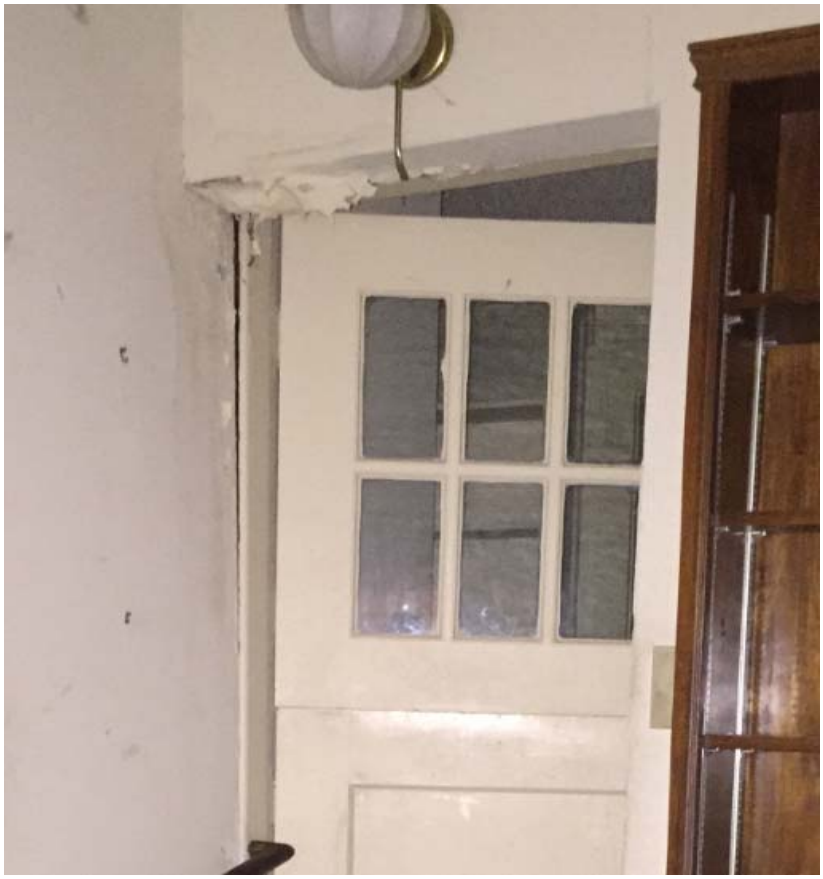

Photo 25: Door jamb seperating from wall

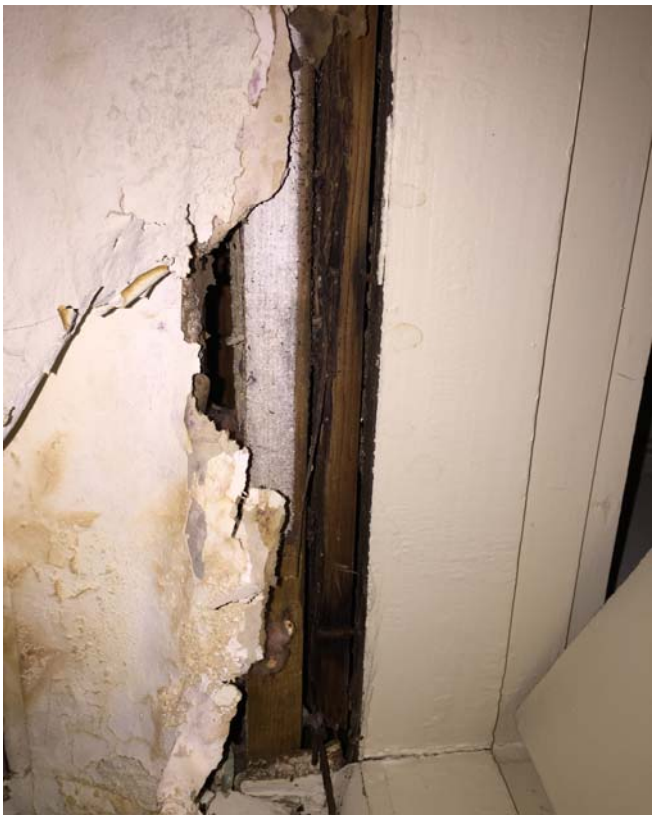

Photo 26: Rotting wood at door header

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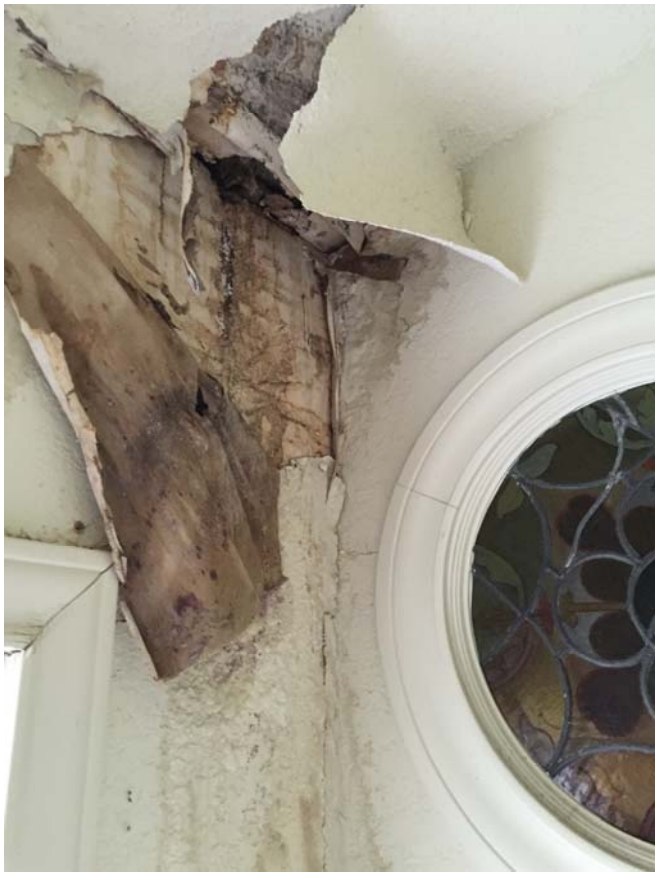

Photo 27: Water intrusions at perimeter corner wall

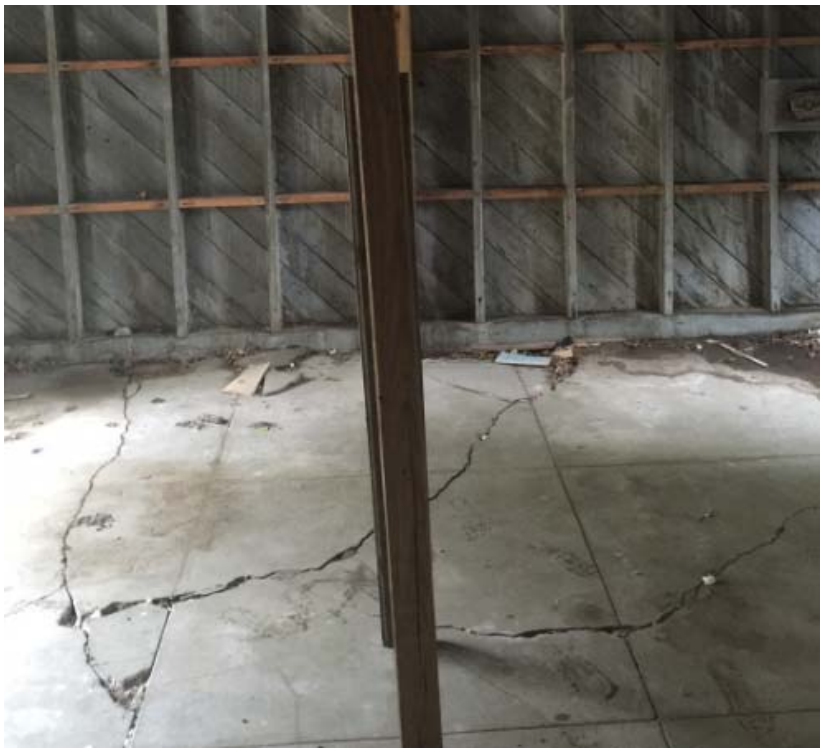

Photo 28: Extensive cracks in garage foundation

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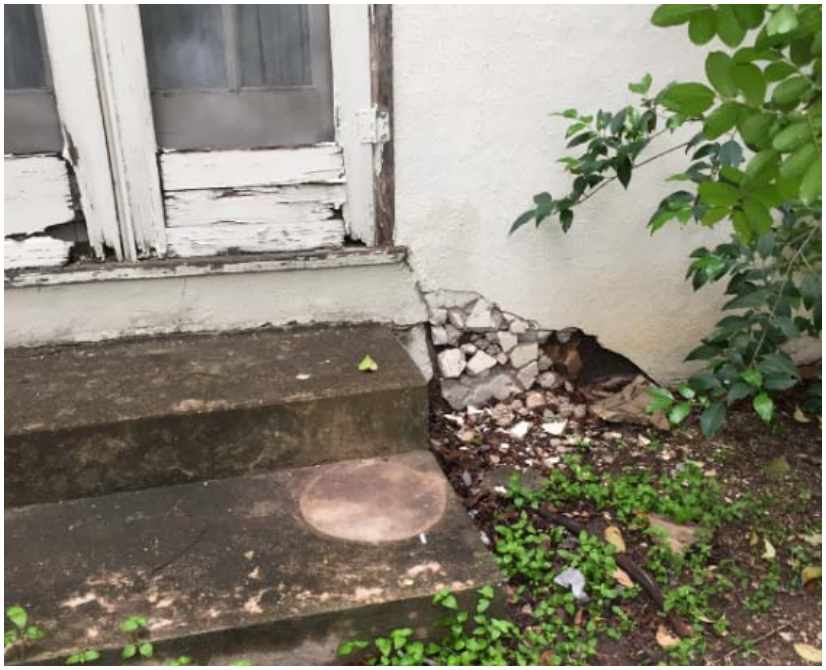

Photo 29: Void in stucco façade at grade level

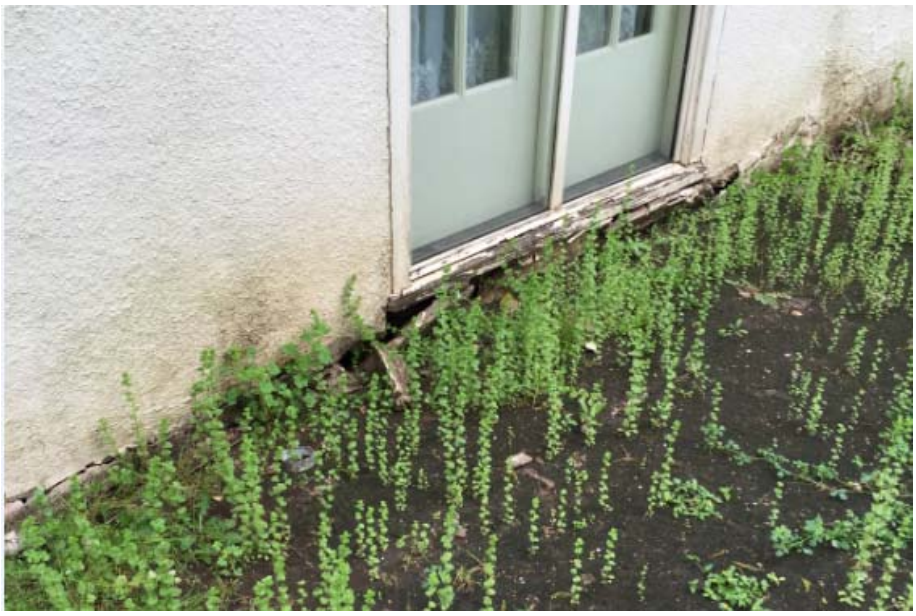

Photo 30: Dilapidated rim joist at grade level

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