

## STRUCTURAL INSPECTION

Date: October 27, 2005

Type: Primary residence  
RE: Post-Hurricane Katrina Structural Inspection  
Structure: Wood frame on beams with concrete columns/Aluminum siding/Shingle Roof

Owner(s): Mary Richardson  
Property: 509 Carr Dr.  
Slidell, La  
© 504.415.6196

Temp Residence: (Baton Rouge) 225-757-5096

### History:

Mrs. Richardson contacted Dammon Engineering to perform a structural inspection on the referenced residence. Mrs. Richardson stated that the water did enter the living space about 1 to 2 inches. She had concerns about the amount of force the walls took during the hurricane and that the floor in the living space is no longer level. Interior doors no longer hang or close properly.

### Findings:

1. A visual inspection of the residence, starting outside the home, revealed 10 of the concrete columns that support the dwelling show signs of stress fractures near the top of the column where it is attached to the beam. A complete visual inspection of all of the columns could not be performed because of debris around the columns; however, cracks were visible in the middle of the slab that the columns were sitting on. All of the floor joist that were visible were in good condition.
2. The roof received substantial damage to the shingles and some decking was destroyed.
3. All of the aluminum siding was missing from the northwest wall.
4. A visual inspection of the interior of the 1<sup>st</sup> floor of living space shows that sporadic pieces of the sheetrock ceiling have fallen.
5. A framing level was used to check the northwest wall and the wall is level within acceptable tolerances. Sheetrock on the northwest wall has separated, intact, from the wall. Since there was sheetrock on the north wall, a visual inspection of the studs on that wall could not be performed. Throughout the house there are multiple places where the paint has bubbled away from the sheetrock.

6. On both floors, doors do not seat properly in the doorjamb.
7. A visual inspection of the interior of the 2nd floor of living space shows that sporadic pieces of sheetrock ceiling have fallen.
8. A level inspection of the 1<sup>st</sup> and 2<sup>nd</sup> floor living space was performed. The 1<sup>st</sup> floor shows that the floor has peaks and valleys with a difference of 2.2 inches, the greatest difference is on the southeast end in the master bedroom and the master bath. The 2<sup>nd</sup> floor shows that the floor also has peaks and valleys with a difference of 1.6 inches mainly at the northwest end. All floors on both levels 1 and 2 have rollercoaster type up and down spaces within 2 to 3 feet span.

#### Analysis:

1. Some of the columns that support the dwelling are in need of repair. After repairing the columns the house will have to be re-leveled. All of the insulation in the attic will need to be replaced due to the water damage sustained from the leaking roof. The insulation in the north wall will also need to be replaced since all of the aluminum siding was destroyed, exposing the exterior plywood to the hurricane winds and rain.
2. The sheetrock ceilings and walls on both floors of living space received water damage due to the rain coming thru the roof, which was damaged by winds. The paint that has bubbled is also a result of the rain coming thru the roof and being blown between the sheetrock and the latex paint. Sheetrock in these affected areas will need to be removed and mold remediation performed.
3. All of the carpet, tile and other floor coverings will need to be removed from both floors of living space so that the floor decking can be inspected and replaced if the plies have separated. A visual inspection from below shows no problem of separation between the joist and the floor decking of the 1<sup>st</sup> floor of living space. It appears that the floor decking may have separated from the floor joist on the 2<sup>nd</sup> floor.

#### Conclusion:

The columns under the dwelling are in need of repair. The north wall received substantial wind damage but is structurally sound. Sheetrock damaged by either flood waters or rain water needs to be removed and mold remediation performed. Although the supports for the 1<sup>st</sup> and 2<sup>nd</sup> floors appear to be in good repair, once the decking is removed structural issues may arise that are not obvious from this inspection.

It is my professional opinion that the main framing of this structure is structurally sound, and completion of the work discussed above, will provide a structurally sound building.

This inspection is limited to the apparent visual conditions of the structural components of this building. It does not cover, nor attempts to cover, any components, items, and/or conditions which, by their nature or location, are concealed or are difficult or hazardous to inspect, or which require the moving of furniture, flooring materials, rugs, fixtures, appliances, or any component-part nailed, bolted, or screwed down or shut. No opinions are expressed regarding conditions which could be discovered only by the disassembly of any component parts, special testing, or removal of any concealing objects.

Inspections are made under normal weather conditions, and are not opinions of the conditions of the property and/or structure which may exist under unusual weather conditions, such as, but not limited to floods, heavy rains or snows, high winds, temperature extremes, or any act of God. Specific hazardous wastes, toxic substances, toxic mold, air and water quality, communicable diseases, asbestos, soil, environmental, radon, carbon monoxide, formaldehyde, building code and termite conditions are not included in this report unless otherwise stipulated.

This report is not a warranty or guarantee of the property inspected, but it is our opinion of its condition at the time inspected. Our liability shall be limited to reimbursement of the total cost of inspection.

Additional Notes:

Please be aware that while the framework of the residence may be found to be structurally sound, there is no guarantee that local, state, or federal officials may not condemn the structure for other reasons.

When work is being accomplished to rebuild the structure, fastenings and nail patterns should meet the new International Building Code requirements for that work.

**Information homeowners should know about flood damaged walls and floors, or those damaged by water entry from rain, etc.**

The wood stud walls will need to be dried out prior to covering with new wallboard. In order to dry out the wood studs, one side of the wall will need to be removed and allow sufficient drying time to occur. Mold remediation should occur as soon as possible. The American Wood Council states that wood needs to dry out to less than 19% moisture content prior to enclosing wood studs, otherwise the structural integrity could be compromised and mold growth could occur. Contractors should not re-install wallboard until the moisture content in the stud wall is below 19%. Houses built using thicker wood products should expect longer dry out times.

Sincerely,

Emmett G. (Pete) Dammon, P.E.  
Louisiana License No. 8796

Attachment: Photos  
Floor level sketch

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