



November 5, 2010

Mr. James Dunn
736 Kentucky Street
Lawrence, KS 66044

Re: Structural Assessment
711 Connecticut
Lawrence, KS 66044

Apex Engineers, Inc. observed the structure located at 711 Connecticut, Lawrence, KS 66044. For the purpose of this report the structure will be referred to as facing east. The structure is wood framed construction over a stone foundation. The following is based on a visual, non-destructive observation of the structure only. No attempt was made to check structural components that were not readily visible or accessible. It should be noted that certain assumptions and or conclusions must be drawn in a report of this nature, and that, it may be the case that additional structural issues could arise as further evidence were revealed through more intrusive investigation. This report is intended to provide an overview of the existing conditions only, and, no warranties or guarantees shall be implied. Our firm has been asked to provide a structural assessment of the existing structure and opinion report as to the restoration plausibility for this house. Finish materials, unless specifically addressed herein, were not evaluated.

Observations

- Rotting and/or damaged wood, siding, and trim was noted extensively at the perimeter of the house. These items, although architectural in nature, if left unchecked and un-repaired could lead to structural damage in the future, if they have not already.
- Rotting wood was noted in the walls, ceilings, and floors of the structure due to moisture damage.
- The beams and columns in the basement are also rotting and appear to be unstable.
- Significant movement and/or failure of structural members as noted by sheetrock cracking throughout the house, around windows, at headers, and along the ceiling lines.
- Moisture and water damage was noted on the floor throughout the lower level. Moisture damage was also noted in multiple locations throughout the ceilings of the 1st and 2nd floors.
- Diagonal sheetrock/plaster cracks were noted throughout the house at almost every room, indicative of lateral movement and/or shifting of the framing. These cracks were exacerbated at and around corners of openings such as windows and doors where a stress concentration point is provided.
- Sheetrock/plaster cracks were noted in the ceilings of most rooms.
- Compression cracking was noted above most doors and windows likely indicative of failure of the header behind, the support structure at either end, and/or lateral shifting.
- Several door headers were noted as out-of-level.
- Floors throughout the house were noted as sloping in multiple directions.
- Deterioration of the stone foundation. Large gaps were noted between stones.
- Addition at back has settled significantly.
- Possibility of mold exists throughout the structure and shall be inspected by an Environmental Engineer for verification.
- Gutters are missing at several locations.

9000 W. 64th Terrace
Merriam, KS 66202

www.apex-engineers.com

phone 913.432.3222

fax 913.432.4965

- The grade at the perimeter of the house appears to be flat and does not allow for water to drain away from the foundation.
- The structure has recently been condemned by the City of Lawrence Planning & Development Services for the following issues:
 - There are large openings in the north side foundation.
 - None of the doors or windows are weather tight.
 - The flooring throughout the 1st level is weak and unstable and there are holes in the floor.
 - The ceilings and walls are crumbling throughout the 1st floor.
 - There is mold and rot on the walls due to water infiltration.
 - 1st floor in its entirety is in a general state of dilapidation and disrepair.

Conclusions & Recommendations

The structure appears to have been left in disrepair for a significant period of time. Because of this, many of the structural components of the house have or may have been compromised. In addition, it is the opinion of this firm, that without significant structural repairs, additional movement and damage can be expected. As a minimum, our firm recommends the following repairs:

- 1) The existing foundation shall either be replaced
OR
The foundation (including all load-bearing elements: foundation walls, interior pier pads, grade beams, etc) shall be stabilized and leveled with a properly placed steel helical or push pier (or equivalent) system. Generally piers shall be required at all corners and along straight wall lengths at a maximum of 6'-0" on-center; however, this will vary as a function of the approach and type of repair system used (verify with foundation repair company). The work would also include tuck-pointing of the foundation. All work shall be completed by a licensed contractor and qualified foundation repair expert specializing in this field.
- 2) It should be noted that the foundation repair process will likely cause additional structural and architectural damage at least initially that will need to be addressed at that time. This may include items such as foundation tuck-pointing, nail pops, additional sheetrock cracking, trim popping, etc.
- 3) The west (addition) portion of the house should be re-framed upon completion of the foundation repair work to restore it to a level and plumb condition as well as properly re-securing it over and to the foundation wall below.
- 4) The sloping floor systems throughout the house will need to be leveled. This repair will require the addition of new support beams and/or bearing walls in the basement. Actual repair measures are unable to be determined at this time as the majority of the house is finished.
- 5) It is recommended that the sheetrock be removed at multiple locations (actual locations to be determined) throughout the house to allow for a representative sampling or 'spot' checking of the existing structural members at the perimeter of the house. Additional demolition may be required at that time dependent upon the discoveries of structural damage in the walls from moisture or otherwise.
- 6) All architectural items noted in the above *observations* section of this report shall be repaired, replaced, and/or restored to protect against potential additional structural damage. This would include, but is not limited to; soffits, siding, trim, windows, roof covering and materials, and any other damaged and/or rotting wood.

- 7) Gutters would need to be replaced.
- 8) The grading shall be adjusted to provide a positive slope that directs runoff away from the foundation. A positive slope of 1 inch per foot drop for 6 to 10 feet away from the house shall be maintained. In addition, rain gutters and downspouts shall direct water away from the house, discharging it no closer than 4 feet from the foundation.
- 9) A structural engineer should be retained throughout the construction process to provide close monitoring. Additional repair measures and/or recommendations may be required as additional evidence is revealed during the demolition and re-construction process.
- 10) An environmental engineer shall be retained to inspect the home to determine environmental hazards exist.

Due to the extent of the structural damage observed it is likely that demolition and replacement are the most economically feasible and viable solution for this project. It is probable that restoration costs would far exceed replacement costs. However, Apex Engineers, Inc. does not provide construction cost estimates. It is recommended that a general contractor be consulted for this service. Should restoration be chosen, Apex Engineers, Inc. again recommends that a structural engineer be retained throughout the construction process for close monitoring.

LIMITATIONS

The scope of our services includes only those items specifically addressed herein. All other items are outside the scope of this inspection; including but not limited to, any environmental assessment (such as, but not limited to mold, mildew, presence of hazardous or toxic materials in the soil, surface water, ground water, etc.).

Apex Engineers, Inc. has performed our services in a manner consistent with the standard of care and skill ordinarily exercised by firms of our type practicing under similar conditions at this time and locality. This report is intended for the confidential and exclusive use of Apex Engineers, Inc.'s client. No other person or company is authorized to use this report for any purpose without Apex Engineers, Inc.'s client permission. Without exception, this report will expire 180 days from the date of issuance. Please call if Apex Engineers, Inc. can be of further assistance.

Best Regards,
Apex Engine

Theron M. Barton
Principal

