



Structural Assessment of Collapsed Building

Date of Observation: March 10, 2022

Location: Building Collapse
102 McNatt Avenue
Aurora, MO 65605



Picture 1

Overview: The buildings 102 and 104 have collapsed in the front. Building 100 is still standing and was used as a rental apartment and was occupied during the collapse. No injuries were reported. The city has barricaded the half of E. Mill St. and Mc Natt Ave. and have blocked the entrance to building 100 for public safety and has requested this structural analysis and recommendations on further action needed to ensure public safety.

Structural Assessment Requested By: Carrie Howlett, Community Development Director

Present During Observation:

Michael Atkinson, P.E. of Allgeier, Martin and Associates Inc.
Alec McDonald, E.I. of Allgeier, Martin and Associates Inc.

Information provided by Carrie Howlett, before the observation was taken into consideration in the preparation of this report.



Picture 2 – Looking SE at 102 & 104

Observations and Discussions: It is our understanding that 102 and 104 collapsed sometime during the evening hours of Tuesday, February 16th, 2022. During the on-site inspection on Thursday March 10th, one of the tenants of the second story of 100 told us that he was flung out of bed during the collapse. He also reported that he had to walk up a slight incline to reach the north wall of his apartment. The tenant's account of his experience is consistent with the collapse of the adjacent building where the failure of the joints would pivot in the wall thereby causing an uplift in the north edge of the floor in 100 McNatt. This is also consistent with the wider gap seen in the flashing (Picture 11) at the north end of the front wall. Because this wall has been pushed upward, any continuation of load transfer in the wall is disrupted and would no longer be considered stable. The wall standing between 100 and 102 seems to have bowed and is lifting

2nd story of 100 up. It appears some of the boards were burned in 102. The back of half of the party wall between 102 and 104 was still standing but is no longer straight or plumb.

As shown in the photographs, the condition of the buildings has deteriorated significantly resulting in structural stability. The bricks in the back wall of 100 McNatt are dislocated and the arches are flattened, settled, and partially collapsed resulting in further structural instability.

Building Construction: The structural composition system of 102, 104 and 106 generally consists of unreinforced, grouted stacked brick walls integrated with wooden floor and roof beams that is typical of early 1900 multistory building construction. These structures are believed to share a common wall (aka a Party Wall) as seen in the roof photographs. The wooden beams generally span between the brick walls and are supported in pockets provided in the brick wall. Structures 102 and 104 contain an intermediate beam and column system to support the midspan between the brick walls. This structural configuration creates a building envelope where the walls and roof function together to create a structurally stable system.

Recommendations:

Due to the advanced deterioration and lack of maintenance of the buildings and the structural instability caused by the collapse of 102 and 104, it is the recommendation of this office that all buildings between and including Lots 4 through 11, (Address 100 through 114 McNatt Avenue), be demolished as soon as possible for public health and safety. This is the most economical option investigated.

Observation, Assessment, and Report: Alec McDonald, E.I. and Michael Atkinson, P.E. of Allgeier, Martin and Associates, Inc. performed this structural assessment consisting of Pages 1-8 for the purpose described herein and the structural assessment is intended for the sole use of the Owner. No other use of this structural assessment is authorized and this assessment shall be used in accordance with the signed agreement between Allgeier, Martin and Associates, Inc. and the Owner. It should be noted that this report is based on visual observations with limited mechanical techniques and there is no claim, either stated or implied, that all conditions were observed. Allgeier Martin reserves the right to amend this report if additional evidence or information is revealed.

Sincerely,

ALLGEIER MARTIN and ASSOCIATES, INC.



Alec McDonald E.I.



Michael Atkinson P.E.
Vice President

Attachments Pg 4-8



Picture 3 – Party Wall between 102/104



Picture 4 – Burnt boards in 102



Picture 5 – Backside of Unit 100 1st floor



Picture 6 – Back of Unit 100 2nd floor



Picture 7 – Looking Northeast Towards the front of Lots 4-8



Picture 8 – Looking South Towards the back of Lots 4-8



Picture 9 – Back side of Lot 5



Picture 10 – Back side of Lot 7



Picture 11 – Front of Unit 100, 2nd Floor Flashing