Ambient Environmental, Inc.
Building Science and EHS Solutions
NYS Certified WBE,
SBA EDWOSB & DBE

December 20, 2018

Mr. John Duchessi
Executive Director
Amsterdam Industrial Development Agency
61 Church Street
Amsterdam, NY 12010

Phone: (518) 848-6866

jduchessi@amsterdamny.gov

RE: Structural Condition Assessment
20-22 Main Street, Amsterdam, Montgomery County, NY
Ambient Project No. 181107ENVA

Dear Mr. Duchessi:

Ambient Environmental, Inc. (Ambient) is pleased to submit this Property Condition Assessment (PCA) of Amsterdam Tax ID parcel 55.35-1-48, 20-22 Main Street, Amsterdam, NY, hereafter referred to as the Site.

This PCA was provided by Russel Reeves, CEng., P.E., a structural engineering firm with extensive experience in assessments of this type. The attached report will provide AIDA with a clear understanding of the structural condition of the Site, along with specific risks and hazards associated with the property.

Ambient appreciates the opportunity to provide Amsterdam Industrial Development Agency with this structural condition assessment. If you have any questions, please contact me at (518) 316-0706 or by email (markd@ambient-env.com). Thank you.

Respectfully;
Ambient Environmental, Inc.

Mark S. Dugas, CHMM
Senior EHS Consultant

Attachment

RUSS REEVES, CEng., P.E.
CIVIL-STRUCTURAL ENGINEERS
P.O. Box 1433
Troy, New York 12181-1433
Tel: 518-273-0774
e-mail; rreeves2@nycap.rr.com

December 20, 2018

Ambient Environmental, Inc.
828 Washington Avenue
Albany, NY 12203
Attn: Mark Dugas

Re: Structural Condition Assessment 20-22 Main Street, Amsterdam, New York

Dear Mark:
In order to understand the character and overall condition of the structure and associated skeletal framing members within this building, we made a site visit to 20-22 Main Street where Engineering Technician Barb Tozzi and I met with you and Mr. John Duchessi of the Amsterdam Industrial Development Agency. Photograph 1 shows the Southerly front elevation view of the building.

Photograph 1

The existing structure is three stories in height and has a foot print of 32' x 65' (2,080 sq ft foot print or approximately 6,240 sq ft net total for three stories). In referring to Photograph 2, 22-Main Street is situated to

The existing structure is three stories in height and has a foot print of 32' x 65' (2,080 sq ft foot print or approximately 6,240 sq ft net total for three stories). In referring to Photograph 2, 22 Main Street is situated to the right of the photo. The entrance door to the ground floor office is seen on the right side of the building and is labeled 22 on the door (22 Main Street). This interior work space is more specifically shown in Photograph 3.

Photograph 2

Photograph 3

The center door shown on Photograph 2 accesses the second floor level of both 22 Main Street to the right (East side) of the building and 20 Main Street.

A stair case situated in the front portion of the structure on the second floor accesses the third floor area which is an open and common space. The ground floor level office space of 20 Main Street is located on the West side of the building and is also depicted in Photograph 2.

The building has been vacant for a number of years and has experienced extensive fire and water damage over a multiple year period.

It is estimated that the structure is approximately 100 years old. Timber floor and roof joists span in an East / West direction and are supported by laid-up exterior brick bearing walls situated on the Easterly and Westerly side of the building. The adjacent structures are occupied and are also in the similar age group. There is an unusual design associated with this building in that there are deep timber truss sections that span in a North / South direction and are supported by the front and rear exterior brick masonry walls. This design afforded a clear span opening at the third floor level. Because the trusses carry heavy roof loads and span approximately 65', the use of masonry pilaster columns would have been appropriate and important to the design of this wall assembly. Instead, the full weight and end reactions of each truss member bear directly on the front and rear masonry walls thus making the structural stability in these exterior ,masonry walls critical.

Photograph 4

Photograph 4 shows a typical view at the second floor level of 22 Main Street (the Westerly office space). Although difficult to see in this photograph, this area has experienced extensive water damage. This is specifically occurring in the Northerly one third portion of the floor system and occurs in both the first, second and third floor levels and the roof framing. It shall be pointed out that we had noted that a previous fire had transmitted through the floor system as seen in the basement area of 20 Main Street and in each floor and roof system on both sides of the structure.

Photograph 5

Photograph 5 shows the Northerly rear one third of the third level floor framing (as seen from the second floor), this exhibits gross deflection and heavy water damage. Floor joists have longitudinal fracture cracks through these members due to horizontal shear from being overstressed because of the deteriorated nature of the floor joists and being unable to adequately support the dead loads associated with the third floor level framing. This is unstable and a high hazard condition. The third floor should not be accessed by any personnel. In addition, the third floor is incapable of supporting any live loads. It shall be noted that the third floor level framing is failing as depicted in Photograph 6. A collapse of approximately ½ of this floor system is considered imminent at this time. This will induce a partial collapse of temporary timber column

supports that were installed at the third floor level. These timber column supports and transverse bearing beams placed across the third level floor joists were used to provide supplemental support to the large roof truss members which are failing due to gross water damage and past fire damage.

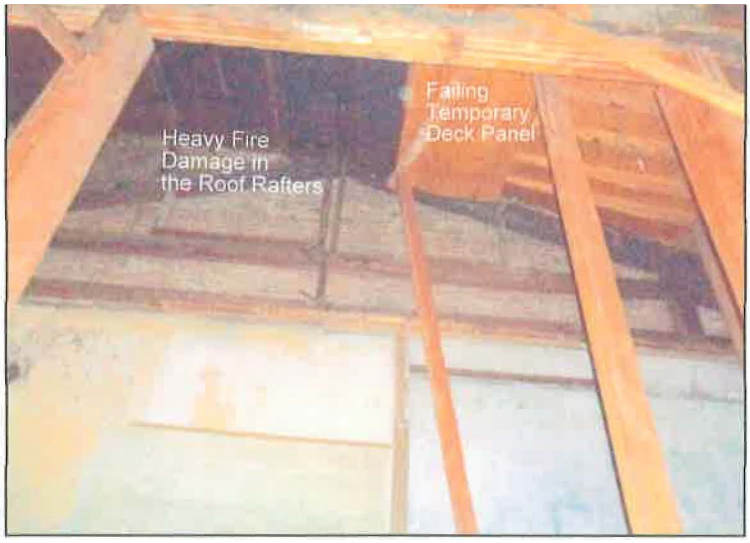
Photograph 6

Photograph 7

We were able to gain access to the third floor level through the center staircase in the front portion of the building at the second floor. This area is highly unstable. Photograph 7 shows a typical view of a portion of this space on the third floor level looking at the rear Northerly brick

masonry wall. Lighting in this area and throughout the building is poor and is reflective in the quality of some of the photographs within this report.

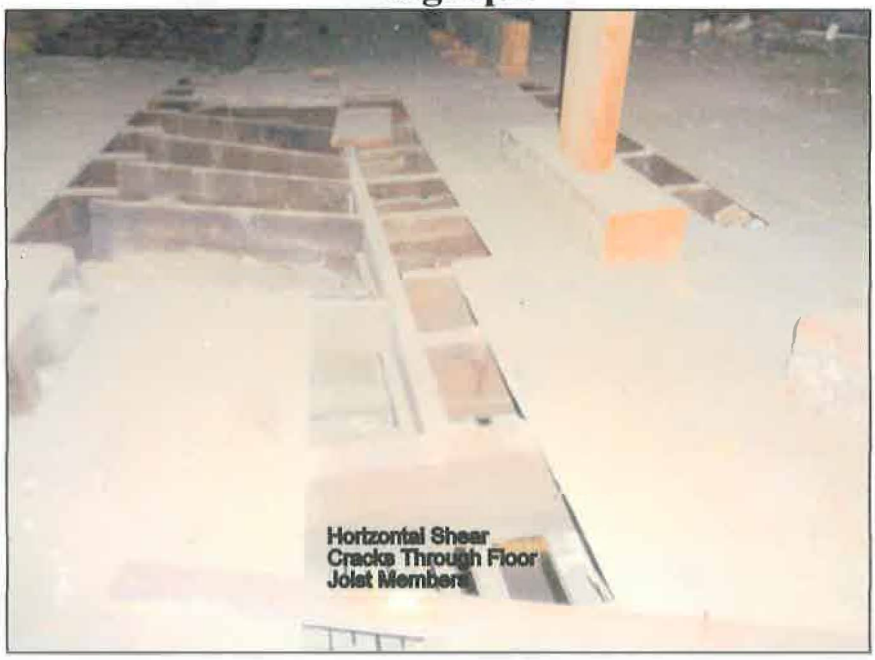
Although difficult to see in the photograph, there is substantial deflection in the third level floor system. At one point, supplemental sections of floor joists were installed and nailed to the ends of 3" x 10" floor joists in order to achieve end bearing on the Easterly wall section. This was inadequate and is contributing to the failure of the third floor framing. This is more specifically shown in the lower portion of Photograph 7.



Photograph 8

Large sections of the roof joists have significant fire damage. A temporary repair was made by installing a plywood deck panel and 2" x 6" studding in an attempt to provide supplemental support to the damaged floor joists and roof decking. This is shown in Photograph 8. This plywood deck panel is now failing under the weight of the roof framing and the 2" x 6" column support is no longer plumb and is deflecting under the eccentric loads imposed to the column from the partial collapsing of this part of the roof. A collapse of portions of the roof section in numerous areas of the building on both sides of the structure is considered imminent at this time.

Photograph 9

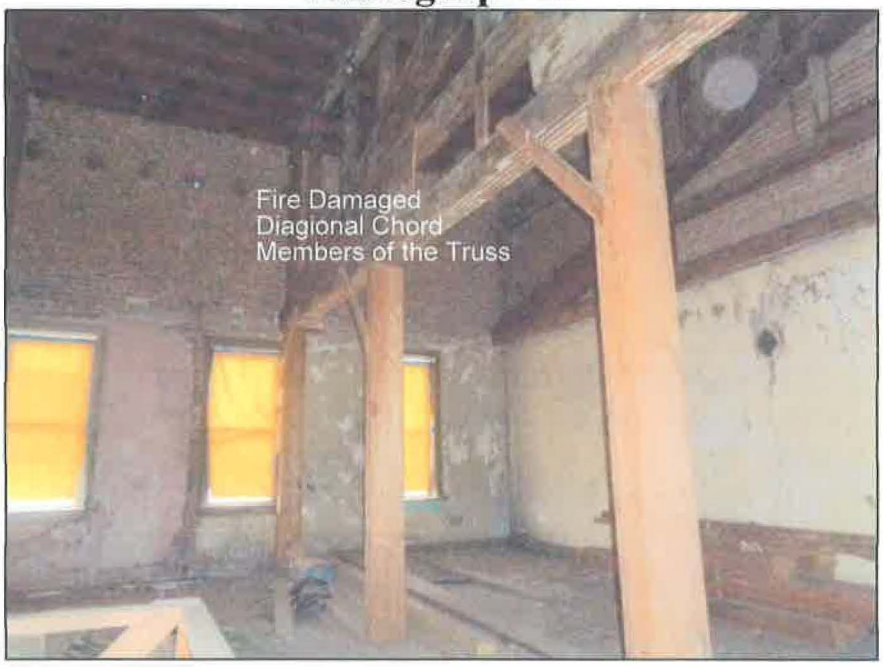


Photograph 10

When we entered the third floor common space, we found new fracture cracks that have opened up in the upper chord members and bottom chord members of the large timber trusses. Although difficult to see in the photograph, these fracture cracks are more specifically shown in Photograph 9. Also shown is some of the fire damaged roof rafters and underlayment. Photograph 10 shows gross floor deflection and

horizontal fracture cracks through portions of the third level floor framing which are producing a highly unstable condition.

Photograph 11



Photograph 12

Photographs 11 and 12 show a deep timber truss section that bears directly on the front Southerly masonry wall. There is fire damage to both roof rafters and roof truss members in this area. Supplemental framing has been installed in an attempt to support the failing truss

sections. These elements are now considered highly unstable. It shall be noted that diagonal chord members are failing due to the aforementioned fire and water damage. Some deflection in these trusses are causing fracture cracking through the front and rear masonry walls.

Photograph 13

Photograph 14

Photographs 13 and 14 show some of the blocking and column supports under truss members in an attempt to maintain load paths of support to the roof framing and trusses thus transferring these loads down through

subsequent floor levels and finally to the foundation. Maintaining the load paths was not properly achieved due to the failure condition that we encountered in the roof section, trusses and subsequent floor systems at each level thus making the building highly unstable. Access into the first and second floor levels of 20-22-Main Street shall be restricted. There shall be no access to the third floor level.

Photograph 15

Photograph 16

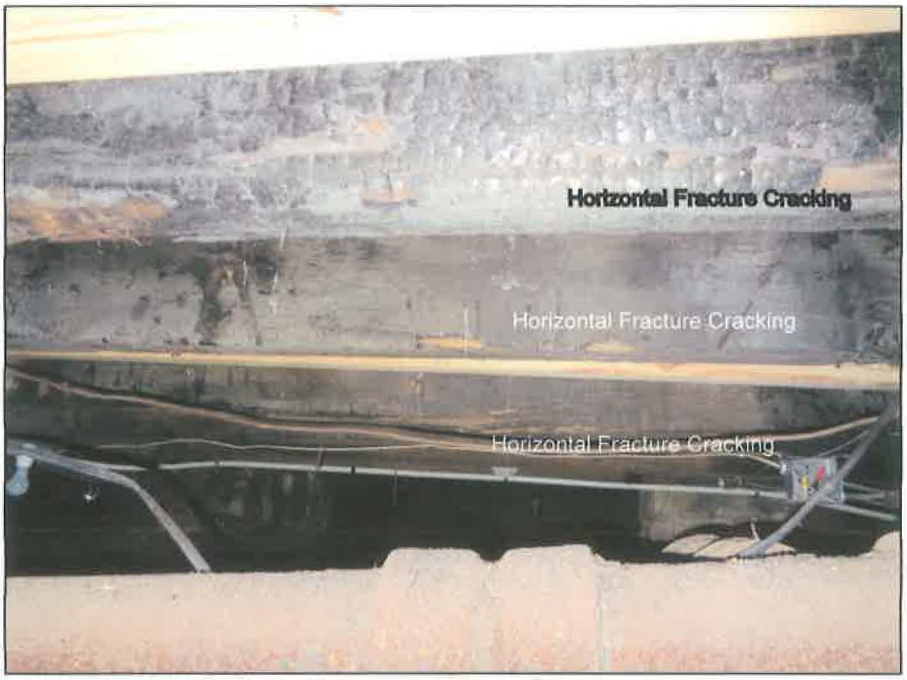
Photographs 15 and 16 show a typical view of the ground floor level office space of 20 Main Street which is on the Westerly side of the building and the basement area directly below this space respectively.

Photograph 17

Photograph 18

There is a single access point to the basement area under 20-Main Street. This is located in an opening in the first level floor joist framing on the interior Northwesterly rear portion of the building. It is unknown if there is a basement area under 22 Main Street or a projection of a basement area of 22 Main Street below the front sidewalk which may be a possibility. This can be readily determined at a later date by saw

cutting a sidewalk panel. This will be important to determine at both the Southeasterly and Southwesterly sides of this building. The foundation of the existing basement area at 20 Main Street consists of a combination of laid-up field stone and brick masonry in varying states of deterioration. We found extensive fire damage in rear portions of the basement. Photographs 17 and 18 show deteriorated fieldstone pilasters with supplemental brick masonry repairs having been made at some point. There is a partial collapse zone in the Northwest quadrant of the rear basement area.



Photograph 19

The existing floor framing in this basement area spans in an East / West direction and is supported by a main timber bearing beam with timber column supports. There is a substantial fire load of garbage and debris found in the basement. Access into the basement area is extremely hazardous. There is a longitudinal fracture crack through the stringers of the basement access stairs and horizontal fracture cracking through the majority of fire damaged floor joists as depicted in Photograph 19. The first level floor framing is fractured and is highly unstable. No personnel shall be permitted to access the basement area. We encountered numerous open electrical junction boxes and deficient electrical fixtures which represent a potential fire hazard. The electrical

service and gas service to the building shall be terminated as soon as practicable to avoid a fire hazard.

Photograph 20

Photograph 21

In general terms, we find that portions of this structure are in a gradual mode of dynamic failure and could result in a sudden rupture of various structural systems. These include the roof framing, the large clear span timber trusses, the third, second and first floor level framing systems. A

failure of any one of these structural systems will result in a partial and localized collapse of portions of the front and rear masonry bearing walls into the City Right-of-Way. This represents a substantial hazard to public safety. During the course of our evaluation, we observed numerous fracture cracks through the front and rear laid-up brick masonry bearing walls. This condition was due to the deflection and movement in the large truss sections which are structurally deficient and are now in a dynamic state due to inadequate support and failure in the third level floor framing and deficiencies in lower framing systems. Load paths at each floor level have been disrupted.

Photograph 20 shows the front elevation view of the building where we numbered the masonry stone lintels over each window opening where fracture cracking has occurred. Photographs 21 and 22 show an enlarged view of some of these areas.

Photograph 22

In order to understand the extent of the fracture cracking, we provide a subsequent photograph (at the back of this report) graphically depicting fractures throughout the masonry wall assembly which represent discontinuities in the front masonry bearing wall. This is producing a condition of instability in the wall and hence a hazard to public safety.

Conclusion:

Only authorized personnel should be permitted to enter the Southerly front portion of the building at the first and second floor levels only and on a strictly limited basis. No access should be permitted to the basement and third floor level.

It shall be noted that a localized collapse to half of the Northerly third floor level and second floor level system into the first floor is considered imminent at this time (a progressive collapse mechanism). This will induce a collapse of a portion of the large truss sections and roof framing. A progressive collapse of this nature will induce a localized and partial collapse of the front and rear exterior bearing walls into the City Right-of-Way.

The present condition of the building is considered a high hazard to public safety and shall be removed as soon as practicable under the City of Amsterdam's Emergency Condemnation Procedures. Any heavy wet snow loads will advance this condition.

Prior to any demolition, it will be important to perform and overall structural condition assessment of the adjacent buildings which are occupied in order to minimize or alleviate any potential damage to adjacent structures as a result of this emergency demolition. The contractor shall saw cut both the Easterly and Westerly masonry joints at the front and rear portions of the building. Some supplemental 2" x 6" framing will be required in both the interior sides of the building (20-22-"Main Street) in order to insure that a sudden rupture of the structure does not take place and that the demolition is achieved in a controlled, safe methodical manner.

Only a qualified, fully insured contractor shall be selected for this purpose. The contractor is wholly responsible for workers' safety, DOL and OSHA compliance. Access of personnel is prohibited due to the hazard classification. All utilities with confirmation shall be terminated at the curb line (water/ sewer), at the power pole (electrical service) and in the street (gas)

If you have any questions please do not hesitate to call.

Very truly yours,

Russ Reeves P.E.

R. Russell Reeves, CEng., P.E.

cc: Barb Tozzi, Engineering Technician
btozzi3@gmail.com
Reeves Engineering


20-22 Main Street
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RUSS REEVES, CEng., P.E.
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