WATTS ARCHITECTURE & ENGINEERING
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January 6, 2014

Mr. Michael Steffan
Ecology and Environment Engineering, P.C.
368 Pleasant View Drive
Lancaster, NY 14086

RE: Al Tech Specialty Steel Site
Lucas Avenue East Plant, City of Dunkirk, NY
EEEPC Reference No. 002700.DC06
NYSDEC Site #907022
Structural Assessment Report
Watts Project 13183

Dear Mr. Steffan:

Watts Architecture & Engineering (Watts) visited the Al Tech Steel site on December 16, 2013 and performed a structural assessment in the presence of Greg Jones, Jeff Kohler and Ben Cole of Ecology and Environment Engineering, PC's (EEEPC) office. The purpose of the assessment was to determine whether the building is safe for hazardous material abatement or not. In our opinion, the building is not safe for the conduct of additional hazardous material sampling or abatement activities. The following is a report which provides additional detail and justification for our opinion.

Introduction:

The Lucas Avenue Plant (LAP) is located on the southerly side of Lucas Avenue in the City of Dunkirk, New York. The approximate 178,000 square foot building is on a parcel approximately 2025 feet by 200 feet. The industrial use of the site began in 1907 where Atlas Crucible Steel Company manufactured iron and steel. The LAP building was constructed in 1909 with additions constructed in 1920, 1936, 1940, and 1968. The site is a NYS Superfund Class "2" Inactive Hazardous Waste Site which represents a significant threat to public health or the environment.

This structural assessment was performed to (1) determine if the building is safe for hazardous/toxic material removal and (2) if the building should be condemned. The scope of Watts's services was to conduct a structural assessment as defined by "ASCE -11-99 Guideline for Structural Condition Assessment of Existing Buildings" using visual observations, photographs, and sketches to communicate our findings.

Description of Structure:

The building was constructed with several types of architecture and roof framing configurations.

A. East Warehouse:

Beginning at the southeasterly corner, the building is a high bay gabled metal roof with an "M" shaped monitor and skylights. The steel columns support riveted steel roof trusses and a southerly face of brick masonry supports large windows whereas the northerly wall is corrugated metal. Upper walls and roof decks are corrugated metal and there is a large hole in the clerestory where the roof has failed. A three ton bridge crane rests on steel crane girders that are supported by steel columns. There is extensive rust on steel framing and the failing rusted roof deck poses a hazard to room occupants.

Photo 1: Easterly warehouse elevation with monitor

Photo 2: E. end roof trusses & bridge crane

Photo 3: E. warehouse windows & brick masonry walls

Photo 4: E. warehouse failed monitor deck & snow drift

B. East Pickling Area:

The easterly pickling building has brick masonry walls with pilasters supporting steel roof trusses and metal deck. There is a bridge crane that travels on steel girders fastened to brick pilasters and steel columns. There is extensive rust on steel framing and the potential for the rusted roof deck to fail poses a hazard to room occupants.

Photo 5: East Pickling area brick masonry and steel roof trusses

C. East Production Area:

The easterly production area is comprised of a high bay steel framed structure with monitor in the southerly portion and low bay steel framed sawtooth roof on the northerly portion. The high bay monitor steel deck is failing with rust through holes and is a risk for failure from high snow drift loads. The low roof sawtooth construction is collapsing due to rusted through metal deck roof panels under stress from high snow drift loads. Southerly brick masonry walls are bowed, structurally cracked, and nearing collapse.

Photo 6: Southerly high bay deck with rust through holes

Photo 7: Northerly part with collapsed metal roof deck

Photo 8: Southerly brick wall bowed & cracked

Photo 9: Failed sawtooth metal roof deck multiple bays

Photo 10: Failed sawtooth metal roof deck near east office

D. West Production Area:

The westerly production area is mostly comprised of a low bay sawtooth configuration wood framed roof structure. The wood framed trusses supporting wood deck have collapsed in many places. Some remedial strengthening work was performed on the wood trusses by adding plywood to the webs. There is a minor area at the easterly end that is framed with steel trusses and metal deck that has failed from high snow drift loads and rust through holes in the metal deck. Steel columns throughout support the metal and wood roof trusses.

Photo 11: Collapsed transition from metal wood framing

Photo 12: Failed metal roof deck due to snow load

Photo 13: Failed flat roof area at metal to wood transition

Photo 14: Collapsed wood framed sawtooth roof

Photo 15: Failed wood deck from rot

Photo 16: Bowed and collapsed plywood faced trusses

E. West Pickling Room:
The west pickling room is comprised of steel roof trusses with metal deck supported by steel columns with brick masonry infill walls. The metal roof deck has rust through holes and the steel framing is rust covered. A section of roof has collapsed at the westerly end of the building. The brick masonry wall between the pickling room and the production area has large structural cracks and is failing. The built up riveted steel columns supporting the roof have rust through holes in the webs and the curvature from plumb indicates they may be reaching their buckling load.


Photo 17: Steel trusses and metal deck form high roof

Photo 18: Collapsed roof at west end of building

Photo 19: Failing brick masonry wall with large structural cracks

Photo 20: Curved column & rust through holes in web

Photo 21: Westerly elevation of pickling and production areas

Discussion of Site Visit:

At the conclusion of the site walk through, we discussed our observations with EEEPC staff that was on site and expressed our concerns for the safety of personnel working in the structure. Since the structure is already snow drift loaded to a large degree, and that wind or other induced vibrations might cause further instability, we felt the risk was too great to allow staff access to perform investigative work. Potential wind loads also present another danger that can quickly contribute to progressive collapse in the presence of the heavy snow loads observed.

Conclusions and Recommendations:

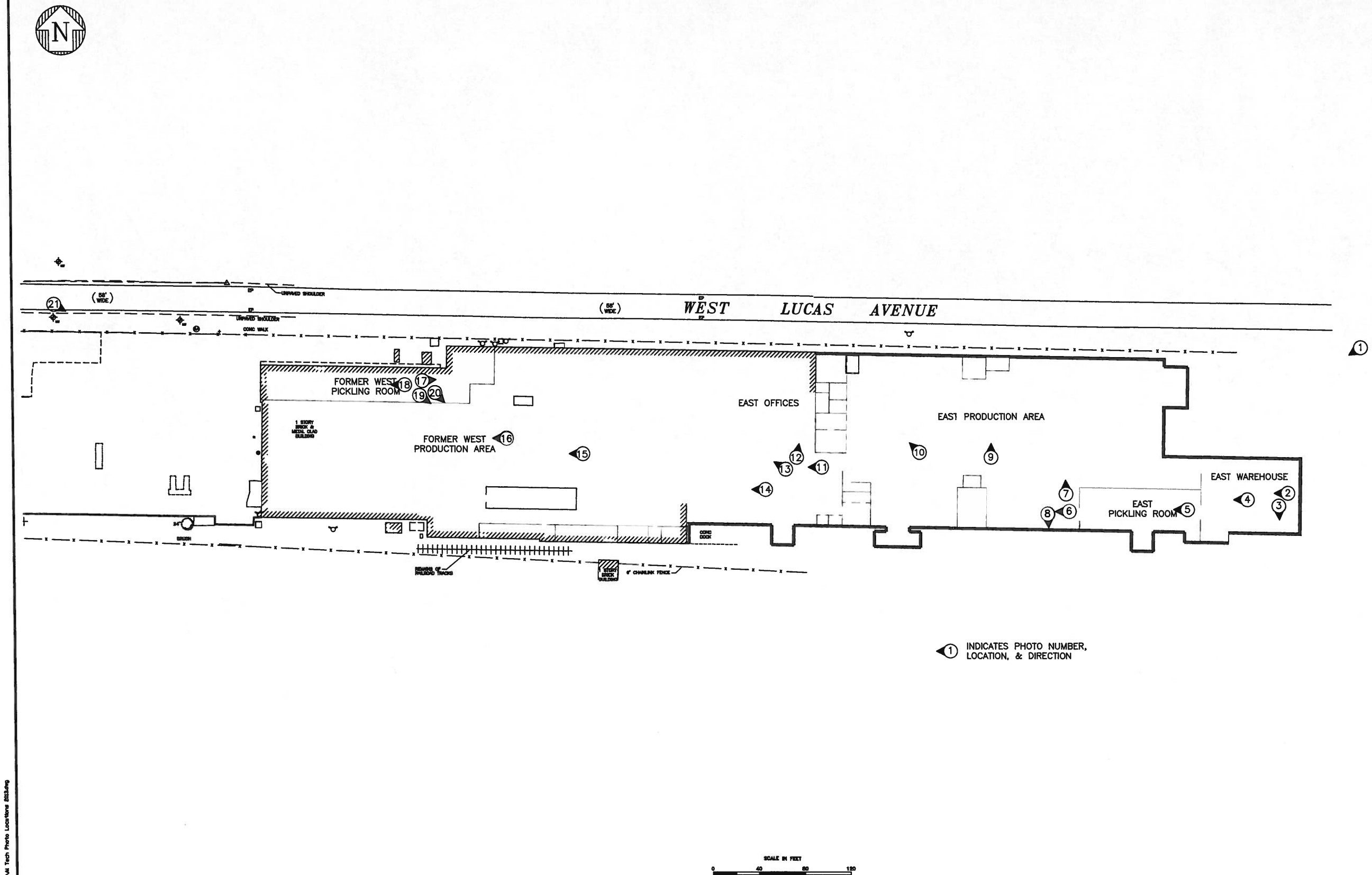
The structural assessment performed on the Al Tech Specialty Steel Lucas Avenue Plant (LAP) leads Watts to conclude that the building is not safe for further investigative activities within. We recommend condemnation of the building by the Authority Having Jurisdiction (City of Dunkirk). Although we are not familiar with all of the other environmental facets of the project, we recommend remediation take place during the demolition of the structure, and after the structure has been demolished, to limit the exposure of workers to structural collapse hazards.

Please refer to the attached schematic drawing of the site for approximate locations of photographs integrated into this report. We appreciate the opportunity to be of service to you on this project and if there are any questions, please call at your earliest opportunity.

Sincerely,

WATTS ARCHITECTURE & ENGINEERING

Michael B. Pratt PE – Principal



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Jan 02, 2014, Dalton

project:

AL TECH SPECIALTY STEEL LUCAS AVE. PLANT
LUCAS AVENUE
DUNKIRK
NEW YORK

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PHOTO REFERENCE

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