



5 June 2020

Jesus Coombs, RA
Architect, Construction & Technical Services
NYC DCAS
One Centre Street
New York, NY 10464

Re: Investigation of Structural Fire Damage to Existing Structure, 70 Mulberry Street, NY, NY

Dear Mr. Coombs:

Per your request, LiRo Architects & Planners PC and LiRo Engineers, Inc. performed a visual assessment of the existing conditions of the above referenced building in order to assess the order of magnitude between required repairs and potential code-required upgrades vs full building replacement. We retained Simpson Gumpertz & Heger Associates, Inc. P.C. (SGH) for forensic evaluation of the building as well as code review to provide conclusions based field observations from a site survey conducted on 20 May 2020. Summarized findings are within this letter and expanded upon in the attached SGH report.

The building located at 70 Mulberry Street is comprised of five-stories with a full basement. Public records indicate the building, designed by architect CBJ Snyder, was constructed in 1893 and has a maximum of 13,350 sq ft per floor. Based on information obtained by NYC DCAS the building, which is a walk-up style with no elevator, had main tenants who consisted of the Chen Dance Studios, United East Athletic Association, Chinatown Manpower Association, the Department of Aging Senior Center and the Museum of Chinese Americans. The building in its current state does not comply with any accessibility requirements and lacks several current code mandates.

On 23 January 2020, a fire, which reportedly started on the fifth floor, broke out in the building and resulted in severe damage throughout.

On 20 May 2020, LiRo Architects & Planners and SGH visited the site to observe the damage to the building and found as a general overview damage and distress throughout the building.

The Architectural Extent of Damage and Existing Conditions was as follows:

- Roof:
 - Our team observed that the roof, which had reportedly collapsed during the fire, was missing.



- 5th Floor:

- Portions of walls and floors were missing due to collapse during the fire resulting demolition. Remaining flooring was severely charred and fire damaged.



- 4th Floor:

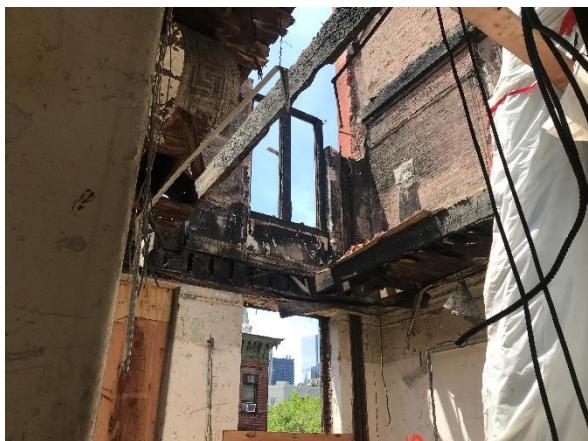
- Sections of ceilings and flooring throughout the building were either fire or water damaged or missing due to the collapse of the roof. Throughout the remaining portions of the floor ceilings, flooring and walls were missing and severe water damage was noticed at this level





- 3rd Floor:

- In many locations, portions of ceilings, flooring and walls were missing throughout this level. Our team observed severe water damage and some mold growth due to water damage on many surfaces.



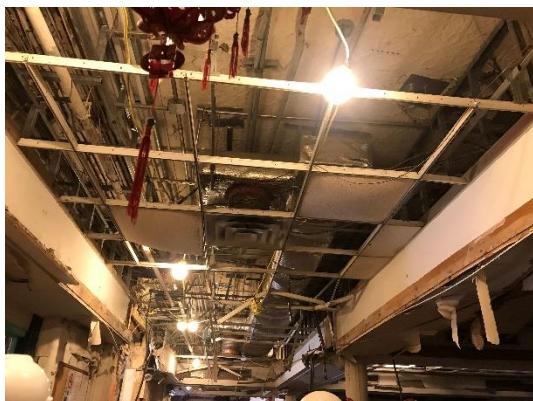
- 2nd Floor:

- In many locations, portions of ceilings, flooring and walls were missing throughout this level. Our team observed severe water damage and some mold growth due to water damage on many surfaces.





- 1st Floor:
 - In many locations, portions of ceilings, flooring and walls were missing throughout this level. Our team observed severe water damage and some mold growth due to water damage on many surfaces.



- Basement:
 - Our team observed mold growth due to water damage on most surfaces and temporary support measures in some areas.



The Mechanical, Electrical and Plumbing Extent of Damage and Existing Conditions was as follows:

- **MECHANICAL**

Existing Conditions

The heating system for the building consists of a single natural gas fired boiler located in the basement, with distribution piping running throughout the building. The boiler, burner, and gas train showed signs of water damage, with visible rust and corrosion. The heating distribution piping was damaged and cut in multiple areas throughout the basement, with



complete destruction on the upper floors damaged by fire. Mold was also present on piping insulation and flue insulation associated with the boiler. The basement also contained additional abandoned boilers which were decommissioned prior to the fire event.

The basement also contained the building ventilation exhaust system, with a central exhaust fan and ductwork distribution. The fan showed signs of water damage, physical damage and corrosion, and was not in operable condition. Ductwork associated with the fan system was also physically damaged, with sections missing in multiple areas within the basement to allow for structural supports, and assumed completed destruction on the upper floors damaged by fire.

The air conditioning systems for the building consist of both packaged rooftop units and DX split systems. Due to the total destruction of the upper floors and roof, any equipment on the roof has been destroyed. The first floor lower roof contained three split system condensing units and a packaged rooftop unit. The condensing units did not show any signs of damage due to the fire event. It is assumed that the indoor units associated with the split systems suffered damage. The packaged rooftop unit had physical damage caused by falling debris from the upper floors. The ductwork distribution on the first floor appeared to be overall intact, with minor physical damage, but contained water damage to the insulation.

Recommendations

The heating system for the building suffered significant damage due to the fire event. To bring the system back to operation, a new piping distribution system would need to be installed to run throughout the building, with new local heating equipment installed on all floors. It is believed that the boiler can be brought back to operating condition, however the burner would need to be further tested by a service technician to determine if there was any internal water damage to wiring and components. It is possible that a new burner would need to be installed to ensure proper operation of the boiler, along with new controls components. Given the age of the boiler (30 years), it would be recommended for a complete replacement of the boiler system.

The building ventilation exhaust system would require a full replacement, as the existing exhaust fan did not appear that it can be brought back to operation. New exhaust equipment and ductwork would need to be installed throughout the building.

The packaged rooftop unit is expected to be able to be brought back to pre-fire operation. Debris would need to be removed from the unit, and a final inspection from a service technician would be required to ensure there was no physical damage to any operational components of the unit. The outdoor condensing units are expected to be currently operational, however new indoor equipment would need to be installed and connected to these units. Given the age of the existing outdoor units, it is possible that they would require replacement to be compatible with any new indoor equipment that is installed.

Additionally for the building cooling systems, new equipment and distribution would need to be installed on the upper floors that were destroyed.



Damaged Ductwork and Piping



Damaged Ductwork



Damaged, Rusted & Corroded Ventilation Fan



Existing Boiler Water Damage & Corroded Pipe



Mold on Flue Insulation



Packaged Rooftop Unit – Debris Damage

- **Electrical**

Existing Conditions

The Building incoming service is routed underground from Bayard Street to the electrical room located in the basement on the south side of the building. There are multiple service meters which serve various floors of the building. The existing electrical service and distribution system for the building are in poor condition showing major deterioration and



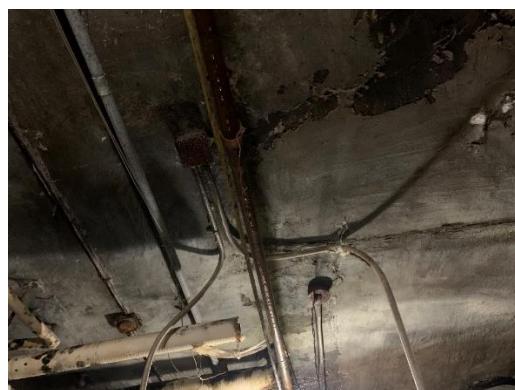
corrosion to the electrical equipment. The panelboard located on the first floor was found detached from the wall showing severe damage. The panelboards on floors 2 through 5 are no longer existing due to the damage caused by the fire. The fire also damaged a significant amount other electrical equipment, conduit and wiring throughout the building.

Recommendations

The existing electrical service and the power distribution throughout the building are damaged beyond repair and cannot be re-energized. Similarly, all conduit and wiring is assumed to have been exposed to fire and/or water and cannot be reused. It is recommended that a new Electric Service be installed and the entire Electrical Distribution System, including all equipment, feeder circuits, and branch circuits be removed and replaced as part of an overall building replacement.



Electrical Service severe deterioration and corrosion.



Electrical conduit major corrosion typical

- **PLUMBING SYSTEMS**

Existing Conditions

Natural Gas

The natural gas service enters the building from the east (Bayard Street) side with a gas meter in the basement adjacent to the service entry. Debris had not been cleared and the meter and piping was not accessible, but the service appeared to be 3", low pressure, as pressure reducing valves were not apparent.



Existing Gas Service – Debris Damage



A second set of smaller meters were located in the basement approximately 60 feet southwest of the main and may have been sub-meters. This could not be confirmed.

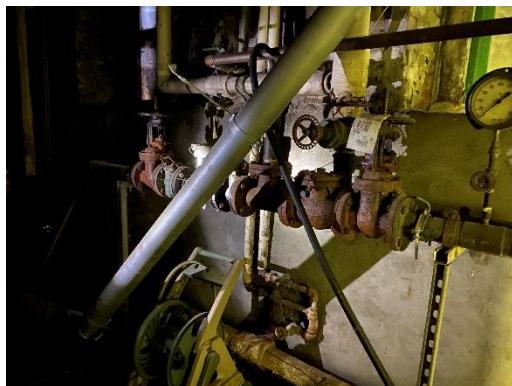
The gas service is expected to remain serviceable, given the fact that it is buried, however the meter(s) and gas distribution piping were damaged by debris from the fire event and would require repair and replacement.

Domestic Water Piping

There are two (2) water services entering the building at the basement level on the Bayard Street (South) side of the building. A 3" water service is located approximately midway along the wall and a 2" service enters the building further west. The 2" service includes a backflow prevention device.

The water services are expected to be functional, however, the valves and fittings must be checked as heat from the fire or water could damage the valves and appurtenances rendering these unusable. The water distribution piping throughout the building appears to be damaged beyond repair.

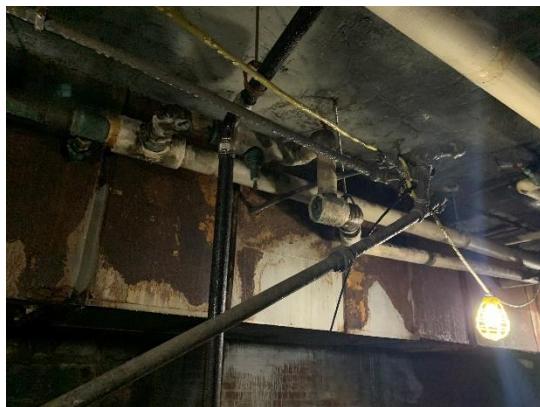
The domestic hot water heaters located in the basement showed visible signs of water and physical damage and cannot be repaired.



Existing Water Service – Rust and Corrosion



Damaged Piping



Damaged Piping



Sanitary Waste and Vent

There is a combined sanitary/storm piping system located in the basement approximately 18" above grade and drops below the floor in the south west corner (Mulberry side) of the building.

The sewer lines follow the south and west basement walls where sanitary and storm stacks terminate in the horizontal, no-hub cast iron lines. The horizontal lines are run from approximately 24" above the cellar grade and slope towards the house trap that is partially buried.

The sanitary waste and vent lines in the basement appear to be serviceable. But must be tested to assure there are no leaks or blockages.

There are bathrooms located along the west wall of the building. The bathrooms and associated sanitary, waste, vent and water lines have been damaged beyond reasonable repairs. As noted previously, the sanitary stacks run vertically into the basement.

Fire Sprinkler Systems

There were reportedly fire sprinklers installed in the bathrooms on each floor but these areas were not readily accessible due to the debris. A search of New York City Department of Buildings records reveals the fact that there were limited sprinkler heads that served the bathrooms that were taken from the domestic water service.

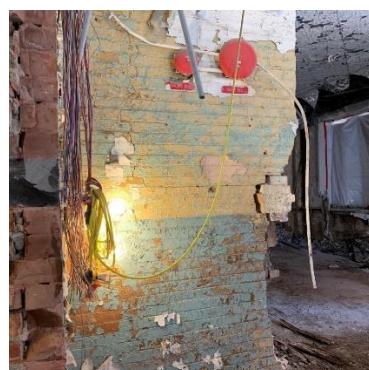
Recommendations

Based upon the observations made during the field visit, it is apparent that, with few exceptions, the plumbing piping systems that served the building sanitary waste and vent, storm lines, domestic hot and cold water and natural gas, are severely damaged and cannot be repaired to the point where they are fully functional without replacements of the systems. The existing building services are expected to be utilized after being further tested, however new piping distribution and equipment would be needed throughout the building.

- **Fire Alarm**

Existing Conditions

The existing Fire Alarm System located on the first floor no longer exists (See photo# 04). The associated fire alarm devices that are remaining in the building have been damaged due to the fire.



Building Fire Command Station missing



Recommendations

It is recommend that a new Fire Alarm System be installed with the renovation of the building.

Conclusions

This report identifies accessible and observable areas. The LiRo team cannot be responsible for concealed defects. This report is not a guarantee or warranty of the premises or of their fitness for use, alterations, remodeling, etc. The premises condition noted on the date of the inspection and that condition may change subsequent to the inspection.

The attached report prepared by Simpson, Gumpertz & Heger (SGH) provides additional information and a detailed breakdown of the structural findings, code analysis and comparative analysis between repair and replacement.

Please feel free to contact our office if you have any questions.

Sincerely yours,

Joseph P. Grant, AIA, NCARB
Sr. Vice President/ Principal Architect

CC: J. Wagner_NYC DCAS
N. Smith _ SGH
C. Yam
Project File