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FEU INSPECTION REPORT

Disclaimer: Conclusions, recommendations and analysis are for Department consideration only and reflect observations as of the date of this Report.

Inspection Date: December 11, 2023

Report Date: September 11, 2024

Re: 1915 Billingsley Terrace, Bronx, NY 10453
a.k.a. 170-184 West Burnside Ave, Bronx, NY 10453

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Report Date: September 11, 2024

To: Borough Commissioner Rodney Gittens, R.A.
NYC Department of Buildings
1932 Arthur Avenue, 5th Fl
Bronx, NY 10457

Re: 1915 Billingsley Terrace, Bronx, NY 10453

Block#: 2879

Lot#: 184

BIN#: [2009112](#)

CB#: 205

Subject: 6-Story Partially Collapsed Building



Image # 1 – 1915 Billingsley Terrace, Bronx NY – Exposure 1/2 Corner (Google Maps Nov 2022)

1.0 Introduction:

As requested by DOB’s Emergency Response Team (ERT), Xhevdet Celo, P.E., Deputy Director of the Forensic Engineering Unit (FEU), and Anthony Kmiotek, P.E. of FEU, visited the site at 1915 Billingsley Terrace, Bronx on December 11, 2023, and performed a visual structural assessment of the premises following a partial building collapse that occurred on December 11, 2023 (the Incident).

2.0 Background:

The building at 1915 Billingsley Terrace has an alternate address of 170-184 West Burnside Avenue. The mixed-use building is a semi-detached, 6-story plus cellar, I-shaped structure with steel girders, wood floor joists, and solid masonry independent walls. It is approximately 100 feet wide by 105 feet deep on a same size through lot. Exposure 1 is along West Burnside Avenue, Exposure 2 along Phelan Place, Exposure 3 along Billingsley Terrace, and Exposure 4 has a one-story cellar-level extension with independent wall abutting the adjacent building at 190 West Burnside Avenue. Refer to Image #2 for a Site Plan.

The property is situated on sloped terrain such that the cellar level at Billingsley Terrace is below sidewalk level, however, the cellar level at West Burnside Avenue is at grade level. Commercial spaces are all located at the cellar level, with residential units occupying floors 1 through 6 above.

The cellar at the Exposure 1/2 corner has a commercial space operating as a deli. Adjacent to the deli, running from the 1/2 corner along Exposure 1 to the one-story cellar-level extension at Exposure 4 is an office space “J&G Multiservices,” a beauty salon, a nail salon and spa, a restaurant, and a tax preparation office at the one-story cellar extension. The remainder of the building was occupied multiple dwellings with 47 class “A” units as per HPD’s website.

Owner:

The building is owned by 1915 Realty LLC (a.k.a. DKCK) per BIS DOF information. David Kleiner identified himself as the Owner’s Representative.

Vacates:

A full vacate was placed on the property at 1915 Billingsley Terrace by ERT on 12/11/2023 based on complaint #2381786 related to the partial collapse.

History of Complaints and Violations:

Prior to FEU’s December 11, 2023 inspection there were 40 complaints on the property. See below a history of complaints on the building from 1994 through the date of the collapse:

Complaint Number	Date	Description
2013131	3/14/1994	The commercial store is being used as residential
2013318	4/12/1994	THE CANDY STORE IS BEING USED AS LIVING QUARTERS
2059566	5/13/2004	ELEVATOR IS CONSTANTLY OUT OF SERVICE
2068397	3/24/2005	BROKEN ELEVATOR 3 WEEKS

2068619	3/31/2005	1 INOPERATIVE ELEVATOR 6 FLOORS IN DWELLING. SINCE 2/1/05
2068677	4/2/2005	ELEVATOR INOPERATIVE, ONLY 1 IN BUILDING,6 STORY, .ELDERLY AND HANDICAP LIVING IN BUILDING
2075429	9/12/2005	CALLER STATES THAT ELEVATOR WITHIN THE BUILDING DOES NOT WORK ONLY ON THE 4TH FLOOR 1 ELEVATOR WITHIN THE BUILDING PLEASE INVESTIGATE
2135012	8/29/2009	CLR STS 1 ELEVATOR IN 6 STORY MULTIPLE DWELLING...DOORS GET STUCK...CAR DOES NOT GO TO ALL FLOORS...ELEVATOR DOES NOT RESPOND WHEN CALL BUTTON IS PUSHED ON A DIFFERENT FLOOR
2139819	12/30/2009	1 ILLEGAL APARTMENT IN BASEMENT. EGRESS SUBSTANDARD
2176821	8/28/2012	ELEVATOR IS NOT WORKING
2199214	6/10/2014	There is a possibility the wires are split which is causing her to get an extremely high bill. Con Ed advised her to get a contracted electrician to check the problem but she wants DOB to check.
2211589	5/16/2015	THERE IS A BUILDING THAT IS OVERCROWDED, IT HAS CRACKS IN THE EXTERIOR WALL
2211838	5/23/2015	NO CONSTRUCTION, BUT THE BUILDING IS HIGHLY UNSTABLE. YOU CAN HEAR IT CRACKING AND DETERIORATING FROM THE INSIDE.
2211837	5/23/2015	MULTIPLE APARTMENTS IN THIS BUILDING ARE OVERCROWDED AND YOU CAN HEAR THE BUILDING DETERIORATING.
2214363	7/21/2015	THERE IS OVER FIVE PEOPLE LIVING IN A ONE BEDROOM APARTMENT.
2242395	4/27/2017	class A apartment convert to SRO
2242564	5/1/2017	BEANSTALK PLAYGROUND IS CLOSED
2242813	5/4/2017	24 HOUR FOLLOW-UP COMPLIANCE INSPECTION FOR VACATE #X080/17
2243006	5/9/2017	ILLEGAL GAS STOVE IN CELLAR
2243404	5/17/2017	the only elevator in the building has been out of service since monday.
2251404	10/17/2017	customer lives on 6th floor and elevator hasn't been working for two weeks and she complained to landlord
2251405	10/17/2017	ELEVATOR IN THE BUILDING HAS NOT WORKED FOR OVER A WEEK. I HAVE BAD KNEES I NEED THE ELEVATOR. PLEASE INSPECT.
2271692	11/14/2018	Defective
2276786	2/28/2019	THE ELEVATOR IN MY BUILDING HAS BEEN OUT SINCE YESTERDAY .
2304687	8/7/2020	THERE IS A VERY STRONG BACON ODOR COMING FROM WITHIN THE STORE. THIS HAS BEEN AN ONGOING ISSUE. THE AIR VENTILATION SYSTEM AT THAT COMMERCIAL ESTABLISHMENT IS INSUFFICIENT. PLEASE INVESTIGATE AND FOLLOW UP. IT IS A TOXIC BACON ODOR AND IN THE SUMMER IT GETS WORSE.
2316837	5/2/2021	Scaffolding around the bldg since January 2020 and no work being done. It's unsafe and a hazard. Garbage everywhere, people drinking, smoking and partying under it constantly..
2320729	7/13/2021	72 HOUR NOTIFICATION JOB# X00529515-11
2323311	8/31/2021	TPP MONITORING JOB# X00529515-11

2325704	10/6/2021	THE ELEVATOR IS NOT WORKING FOR FIVE DAYS. THEY BUILDING HASSIX FLOORS. THERE ARE MANY PEOPLE WHO HAS DISABILITY AND NEEDS THEELEVATOR.
2328239	11/24/2021	Scaffolding around bldg is unsafe. People doing drugs,defecating under it, fighting, scaffolding has been up since 2019 andno work being done.
2371212	7/6/2023	72 HOUR COMPLIANCE INSPECTION
2375205	8/29/2023	There is exterior construction going on There is no worker safety they aren't wearing any harnesses or hard hats they most likely don't have any osha certifications. You can tell by the way they are working that they have no idea what's going on
2375206	8/29/2023	Exterior work being performed with no permits displayed.
2375207	8/29/2023	There is no permit for the scaffold and they are working onrope scaffolds with improper methods and it's an unsafe condition forall passerby and workers.
2376396	9/18/2023	72 HOUR COMPLIANCE INSPECTION
2376398	9/18/2023	72 HOUR COMPLIANCE INSPECTION
2376799	9/25/2023	LL 188/17 COMPLIANCE INITIAL INSP. - ACTIVE JOB APPL. #: X00866067-11
2376800	9/25/2023	LL 188/17 COMPLIANCE INITIAL INSP. - ACTIVE JOB APPL. #: X08008005-11
2377575	10/3/2023	SIDEWALK SHED MONITORING
2380242	11/14/2023	There is a pipe scaffold at 1915 Billingsley Terrace that has been in place of almost a decade. There is never any work or construction being done on that building, it has just been there indefinitely (except for one year that is was oddly removed then put back up). It needs to be removed, that scaffolding makes the sidewalk extremely dangerous. A lot of shady people congregate there at all hours of the day (24/7) and it sometimes gets violent. Someone was shot there just 2 months ago. It's already a very narrow sidewalk so when you want to get through it you have to walk through the groups of people, which often elicits commentary and aggression, and the sidewalk across the street is blocked off. I wish I could go around it but I literally have to go through that sidewalk to get to the bus stop at the corner. It is very dangerous and I feel like it is just a matter of time before I find myself assaulted when I walk through there. The scaffolding is 100% the problem (and solution). It allows for a comfortable and convenient place for people to hang out that is secluded. There is no reason for that scaffolding to be there, that building hasn't had an active construction in years. It needs to come down. Details: -The scaffolding is ground level -Run around almost the entire building -Pipes and wood blanks -No lights (adding lights would at least help) -Old residential building -Specifically the area of concern is the corner of Phelan Place and Billingsley Terrace

Prior to the Incident, there were 48 DOB violations on the property with 2 open. Both were related to the Façade safety program from 2020 and 2021. Relevant FISP DOB Violations include:

- V022120FISPHAZ88745 filed 02/21/2020.
- V032521FISPHAZ909309 filed 03/25/2021.

Prior to FEU's December 11, 2023 inspection, there were 25 ECB violations on the property with 5 open, including a violation for failure to submit an acceptable cycle 7 round report and a separate violation for failure to submit an acceptable cycle 8 round report critical examination documenting the condition of the exterior wall and appurtenances. Selected ECB violations include:

- 39052670R, Violation Date 12/11/2021, Hearing Status DEFAULT, Certification Status RESOLVED:
“CLASS 2 VIOLATION ISSUED,/ HOIST MOTOR BEARING WORN, REMEDY REPAIR,/ GAP IN CAR DOOR, REMEDY ADJUST,/ NO ACCESS IN MOTOR ROOM. REMEDY, PROVIDE KEYS ON LOCATION.”
- 38269195H, Violation Date 04/17/2019, Hearing Status IN VIOLATION, Certification Status RESOLVED:
“CEASE USE ... DOOR ZONE RESTRICTOR HAS BEEN ALTERED AND RENDERED INOPERATIVE. REPAIR.”
- 37011074R, Violation Date 05/18/2018, Hearing Status IN VIOLATION, Certification Status OPEN:
“FAILURE TO SUBMIT ACCEPTABLE 8TH ROUND REPORT OF CRITICAL EXAMINATION DOCUMENTING CONDITION OF EXTERIOR WALLS AND APPURTENANCES REQUIRED BY 28-302.4 FOR CONTROL #812259. REMEDY: SUBMIT REQUIRED TECHNICAL REPORT...”
- 35337297L, Violation Date 04/24/2018, Hearing Status IN VIOLATION, Certification Status RESOLVED:
“FAILURE TO COMPLY WITH THE COMM'S ORDER CONTAINED IN SUMM/VIO#35252856X ISSUED 05/02/17 AND FILE A COFC.WORK W/O PERMIT AT CELLAR LEVEL ERECTED FULL HEIGHT PARTITION TO CREATE AN SRO RUNNING BY ELECTRIC CABLE FO...”
- 35251000Y, Violation Date 05/09/2017, Hearing Status IN VIOLATION, Certification Status RESOLVED:
“FAILURE TO MAINTAIN BLDG IN CODE COMPLIANT MANNER. DURING MY INSPECTION AT THE ABOVE ADDRESS ON THE ABOVE DATE I OBSERVED IN THE CELLAR PROHIBITED GAS FITTINGS ON THE GAS PIPING. I OBSERVED A BUSHING WHICH IS...”
- 36019232N, Violation Date 05/19/2014, Hearing Status DEFAULT, Certification Status RESOLVED:
“FAILURE TO FILE AN ACCEPTABLE CYCLE 7 TECHNICAL REPORT IN COMPLIANCE WITH CODE PROVISIONS: PERIODIC INSPECTION OF EXTERIOR WALLS & APPURTENANCES AS REQUIRED BY ARTICLE 28-302 & THE DEPT OF BLDGS RULES & REGULAT...”
- 34418398Z, Violation Date 06/06/2007, Hearing Status IN VIOLATION, Certification Status RESOLVED:
“FAILURE TO MAINTAIN EXTERIOR BLDG. SOUTH ELEVATION SHOWS WOOD UNDER A/C UNITS; LOOSE WOOD SITTING OF FACADE SILL, METAL CANS UNDER A/C UNITS; BRICKS UNDER A/C UNITS; FLOWER POTS ON FIRE ESCAPE; POTS ON SILLS.”



FISP Filings:

The building at 1915 Billingsley Terrace, BX (a.k.a. 170-184 West Burnside Avenue) is subject to New York City’s Façade Inspection Safety Program (FISP) Administrative Code § 28-302 and Title 1 RCNY 103-04 (also referred to as RCNY or DOB Rule), which require that owners of buildings greater than six stories tall have their building’s exterior inspected every five years by a professional engineer or registered architect who is registered as a QEWI (Qualified Exterior Wall Inspector). Since 1915 Billingsley Terrace is six stories tall plus a cellar at grade level (7 levels total), the building is subject to FISP requirements.

FISP filings are divided into subcycles A, B, and C, which stagger the filing deadlines based on the last digit of the block numbers. With a final digit of 9, 1915 Billingsley Terrace falls into subcycle “A,” with a deadline of February 21, 2022, for cycle 9A (most recently passed) and February 21, 2027, for cycle 10A (upcoming). The building has been filing FISP reports since cycle 6 under Control Number 612259 in that cycle.

Based on the findings of the professional engineer or registered architect QEWI, the building is classified under one of three statuses in the FISP report:

- **SAFE** – A condition of a building wall, any appurtenances thereto or any part thereof not requiring repair or maintenance to sustain the structural integrity of the exterior of the building and that will not become unsafe during the next five years.
- **SWARMP** – Safe with a repair and maintenance program. A condition of a building wall, any appurtenances thereto or any part thereof that is safe at the time of inspection, but requires repairs or maintenance during the next five years, but not less than one year, in order to prevent its deterioration into an unsafe condition during that five-year period.
- **UNSAFE** – A condition of a building wall, any appurtenances thereto, or any part thereof that is hazardous to persons or property and requires repair within one (1) year of completion of critical examinations. In addition, any condition that was reported as SWARMP in a previous report and that is not corrected at the time of the current inspection must be reported as an unsafe condition. The QEWI is required to immediately notify the NYC DOB and install public protections as required upon discovering an UNSAFE façade condition.

An overview of FISP filings for 1915 Billingsley Terrace is as follows:

Cycle	Filing Date	Filing Deadline (sub cycle A)	QEWI	Current Status	Prior Status
10A	--	2/21/2027	--	--	UNSAFE
9A	3/25/2021	2/21/2022	Richard Koenigsberg	UNSAFE	UNSAFE
8A	2/21/2020	2/21/2017	Richard Koenigsberg	UNSAFE	SWARMP
7A	11/18/2014	2/21/2012	Richard Koenigsberg	SWARMP	SWARMP
6A	3/31/2009	2/21/2007	Philip Toscano	SWARMP	N/A

Summary of Cycle 6 report findings and recommendations:

Examination of prior repairs made for defects appear to be intact. No loose brick nor stone were discovered. A façade and parapet repair were performed in 2005 under application No. 200999312 which included rebuilding the street parapets along Billingsley Terrace and Phelan Place. Along West Burnside Ave, the walls were pointed. All 6th floor lintels were replaced. Minor brick repairs were performed at the rear parapets. Inspection of the building façade revealed no bulges or other serious defects in the exterior walls, and they are judged to be structurally sound.

Summary of Cycle 7 report findings and recommendations:

Bowed and rusted lintels at a number of locations. At a few locations, associated brick damage was also observed. All severely damaged lintels should be replaced. Damaged brick and vertical/step cracks at a few locations. All severely damaged brick should be replaced. Loosened and damaged mortar was observed. A slightly bowed section of parapet was observed at about 80% of the length of the North Elevation.

Repairs must be performed by 2/21/2017.

Summary of Cycle 8 report findings and recommendations:

While nothing on the building is imminently hazardous, the building is considered administratively “Unsafe” since the 7th Cycle conditions have not been corrected and since there is significant masonry damage throughout the facade. The following six (6) “Unsafe” conditions were identified: cracked brick, vertical cracks at sills and water tables, loose and damaged mortar, a slightly bowed section of parapet and cracks at the parapet interior. One new “SWARMP” Condition is that the parapets are less than 42” in height at some locations.

Summary of Cycle 9 report findings and recommendations:

The building is considered “Unsafe” since the 7th Cycle conditions have not been corrected and since there is significant masonry damage throughout the facade. The following seven (7) “Unsafe” conditions were identified: cracked brick; vertical cracks at sills and water tables; loose and damaged mortar; a slightly bowed section of parapet; cracks at the parapet interior; the parapets are less than 42” in height at some locations.

The QEWI did not identify the cellar level load-bearing brick masonry pier at Exposure 1 and 2, the location of the collapse, as needing repair in any FISP report.

Separate from the FISP requirements, repair drawings permitted under application X00877378-II, described in the following section, were revised to show work at the pier. Initially, repair elevations created in conjunction with the cycle 9 FISP filing did not identify the cellar level load-bearing masonry pier as needing repair. After this, during the filing for application X00877378-II, repair elevations indicate brick work to be performed at the pier.

Job Filings:

There are 9 jobs filed in BIS, mostly related to interior alterations, with one job in 2005 to repair 300 linear feet of parapet wall. This job is filed under Job No. 200999312 by applicant of record Martin

McNeill with a permit issued to Sukhwinder Kaur (GC# 009719) on 09/30/2005. This permit is expired as of 02/14/2006. No drawings are available in BIS for this job.

Prior to the collapse, there were 5 jobs filed in DOB NOW, 3 of which have active permits.

The first active job of relevance filed in DOB NOW is application number X00326437-I1, which is a professionally certified sidewalk shed installation job filed by Brian T. O'Connor on 03/03/2020, approved on 03/05/2020. The permit, first issued to Lakhvinder Kaur GC# 619669 on 10/05/2020, is still active, and the sidewalk shed was in place at the site following the UNSAFE designation (based on the summary provided by engineer Richard Koenigsberg in his cycle 8A FISP report filing) report and was left in place up until the day of the collapse.

The second active job of relevance filed in DOB NOW is application number X00877378-I1, which is a professionally certified façade repair by applicant of record Richard Koenigsberg, filed on 05/18/2023, approved on 06/03/2023. The permit, first issued to Lakhvinder Kaur GC# 619669 on 06/13/2023, is still active, and work was ongoing at the site up to and including on the day of the collapse.

Façade repair drawings by applicant of record Richard Koenigsberg call for brick repointing, brick replacement, and lintel replacement at various areas throughout the façade, including brick replacement at the cellar level pier on the corner of W Burnside Ave and Phelan Place, Exposure 1 and 2, the location of the collapse.

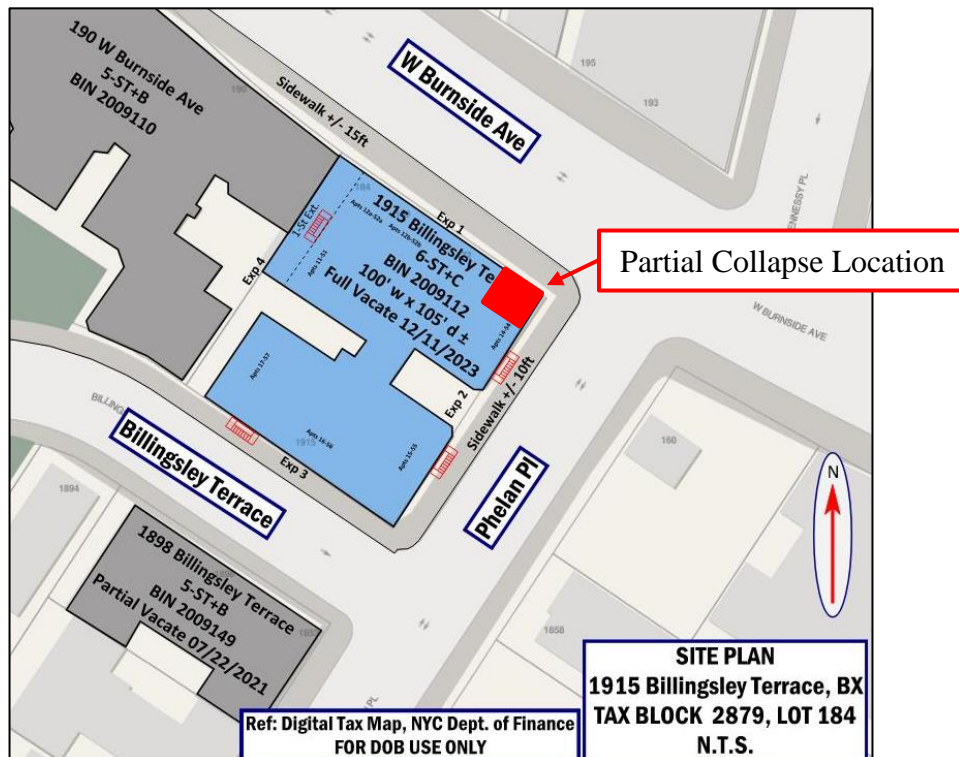


Image #2 – 1915 Billingsley Terrace, Bronx - Site Plan (NYC DOF Tax Map, FEU)

1915 Billingsley Terrace, Bronx

3.0 Existing Conditions at Time of Visit:

As requested by ERT, Xhevdet Celo, P.E., Deputy Director of FEU, and Anthony Kmiotek, P.E. of FEU, visited the site at 1915 Billingsley Terrace, Bronx on December 11, 2023, following a partial collapse at the building on the same day. DOB's Emergency Operation Center received a call regarding a partial collapse of the building at approximately 4:00 p.m. FEU arrived on site at approximately 5:00 p.m. The following was observed:

The Exposure 1/2 corner at the corner of West Burnside Avenue and Phelan Place, approximately 12 feet by 12 feet, was partially collapsed (Image #3, 4). Exposure 1 bearing wall and the adjacent Exposure 2 wall were partially collapsed from the cellar to the roof, leaving the building open and exposed (Image #4, 5). The Exposure 2 wall adjacent to the collapsed wall was unbraced, cracked, bulging, and at risk of further collapse (Image #4, 5).

The 1st floor through roof were partially collapsed, heavily sagging, unsupported at the collapsed Exposure 1 bearing wall, and at risk of further collapse (Image #5, 6).

Damage was localized to the northeast wing of the building. The southeast, southwest, and northwest wings were not affected by the collapse and were deemed to be stable overall.

4.0 Review of Proposed Work including Pre- and Post-Permit Requirements:

4.1 Original Structural Drawings

FEU reviewed the original building drawings, Job No. 2632, dated Nov. 10, 1926, prepared by Springsteen & Goldhammer, Registered Architects. Original building drawings were accessed through the Department of Buildings' Records Room. Access to building files at the Department of Buildings archives would have been available upon request to the registered design professional. The cellar level plan shows, at the corner of Phelan Place and West Burnside Ave. (Exposure 1 and 2 corner and collapse location), a B.B. Pier approximately 2'-8" in width and 2'-8" in depth. This pier supports two sets of lintels consisting of a primary I-shaped beam and a secondary C-shape beam, which support the exterior wall and the associated tributary floor areas at the corner of the building. Tributary floor area supported by this brick pier is approximately 13 feet (north-south) by 8 feet (east-west). Elevation drawings for Phelan Place and West Burnside Avenue show this brick pier supported by a 3'-8" wide by 3'-8" deep concrete pier with a 2'-8" thick 6' square footing. See Images #7 through #9 for excerpts from the original building drawings. This is consistent with historic images of the building and what we observed the day of the collapse and subsequent days during partial demolition of the corner to stabilize and remove the debris.

Based on the above, we conclude the corner pier is a load-bearing structural element supporting the weight of the exterior wall at the corner (approximately 21 linear feet), approximately 104 square feet of floor area for each floor (6 floors total), and approximately 104 square feet of roof area.

4.2 Proposed Façade Repair Drawings

FEU reviewed application number X00877378-II, filed by Richard Koenigsberg, with the owner’s business name listed as DKCK. The permit, first issued to Lakhvinder Kaur GC# 619669 on 06/13/2023, is still active.

Façade repair drawings by Richard Koenigsberg call for brick repointing, brick replacement, and lintel replacement at various areas throughout the façade. FEU focused review on the brick replacement indicated at the cellar level load-bearing masonry pier on the corner of W Burnside Ave and Phelan Place, Exposure 1 and 2 (the location of the collapse). On the Phelan Place elevation in the façade repair drawings (see Image #13), hatching is indicated on the cellar level load-bearing masonry pier which corresponds to “B-R Brick Replacement” on the legend. This legend refers us to detail 1/A-300 for a typical detail for brick replacement. Upon review of detail 1 on sheet A-300, the typical brick replacement detail shows a cavity wall system with one wythe of face brick anchored to a backup wall with stainless steel ties, leaving a gap between the two materials (See Image #14).

A cavity wall system is a type of exterior wall that has a hollow center (cavity) that is formed with an exterior facing or veneer brick, and an inner “backup” wall with a gap between the two. In a cavity wall system, the exterior wythe (layer) of masonry is not structural and is instead supported by the building structure. Relieving angles support the weight of masonry at regular intervals along the height of the building and transfer the weight to the building structure. Ties provide lateral support to the masonry veneer brick layer.

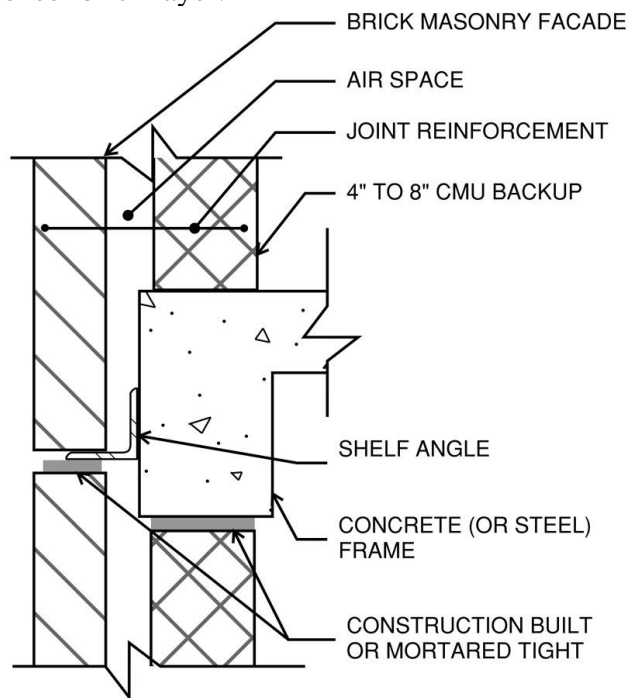


Figure #1 – Typical Cavity Wall System (*STRUCTURE Magazine*)

The exterior walls at 1915 Billingsley Terrace are not a cavity wall system; they are load-bearing solid masonry walls (and piers). Solid masonry walls do not have a cavity, and the individual

wythes (layers) of bricks are tied to one another with header courses, which are bricks turned inward such that they span two wythes. In such a system, each wythe of masonry works together with the other wythes to form a single composite wall system. Thus, removal of bricks in the exterior wythe of masonry has a direct impact on the strength of the building structure.

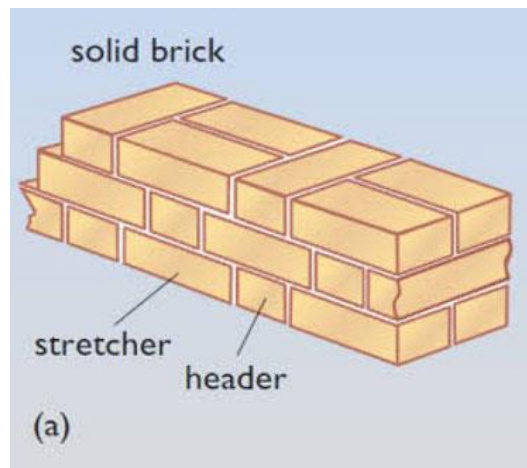


Figure #2 – Typical Solid Masonry Wall System (*Rem-Tie Ltd.*)

It is the registered design professional’s responsibility to instruct the contractor where shoring is required and when to put this shoring in. However, the façade repair drawings have no details or sections showing that any shoring or other means of temporarily transferring/relieving load from the cellar level load-bearing masonry pier is required prior to brick replacement at that location. There is a note on page A-100 within the general notes which indicates “The contractor shall be responsible for adequately bracing and protecting all work during construction against damage, breakage, collapse, distortion, and misalignment according to applicable code standards and good practice.” However, the drawings do not indicate where or when such bracing or protection is required.

4.3 New York City Building Code Requirements (Pre- and Post-Permit)

Pre-Permit Requirements:

Façade repair drawings filed by Richard Koenigsberg requested review under the 1968 NYC Building Code, which is permissible under § 28-101.4.3 of the NYC Administrative Code. See Image #44 for code excerpts. Per § 28-101.4.3, work on prior code buildings may be performed in accordance with the requirements and standards set forth in the 1968 Building Code, with several exceptions including but not limited to safety during construction operations (Chapter 33), administration and enforcement (Chapter 1), special inspections (Chapter 17), materials (Chapters 19 through 26), and structural (Chapter 16), which are subject to the provisions set forth in the current New York City Building Code.

Additionally, NYC Administrative Code § 28-104.7.1 states:

Construction documents shall be complete and of sufficient clarity to indicate the location and entire nature and extent of the work proposed, and shall show in detail that they conform to the provisions of this code and other applicable laws and rules; if there exist practical difficulties in the way of carrying out the strict letter of the code, laws, or rules, the applicant shall set forth the nature of such difficulties.

The design applicant did not sufficiently or correctly indicate the exact nature and extent of the work proposed at the cellar level load-bearing masonry pier. Repair drawings do not indicate that this pier is a critical structural member supporting a significant floor area from the 1st floor through the roof, nor do the drawings propose or indicate shoring or other means of performing the specified brick replacement work in a safe manner. If there were doubts as to the nature (construction type, whether load-bearing or not, etc.) of this pier, it was not addressed on the drawings, nor were any probes or investigations indicated as required.

Chapter 16 of the New York City Building Code (BC) contains provisions regarding structural design. BC §§ 1604.1 and 1604.2 state:

1604.1 General. *Building, structures, and parts thereof shall be designed and constructed in accordance with strength design, load and resistance factor design, allowable stress design, empirical design or conventional construction methods, as permitted by the applicable material chapters and referenced standards.*

1604.2 Strength. *Buildings and other structures, and parts thereof, shall be designed and constructed to support safely the factored loads in load combinations defined in this code without exceeding appropriate strength limit states for the materials of construction. Alternatively, buildings and other structures, and parts thereof, shall be designed and constructed to support safely the nominal loads in load combinations defined in this code without exceeding the appropriate specified allowable stresses for the materials of construction. Loads and forces for occupancies or uses not covered in this chapter shall be subject to the approval of the commissioner.*

Therefore, structural members must be designed to support the loads they are intended to support. The cellar level load-bearing masonry pier was modified in strength/capacity via brick removal on the day of the collapse, while still fully supporting its intended loads (dead load, occupancy load, etc.) without additional shoring or other load-relieving measures. Furthermore, BC § 1604.4 states:

1604.4 Analysis. *Load effects on structural members and their connections shall be determined by methods of structural analysis that take into account equilibrium, general stability, geometric compatibility and both short- and long-term material properties.*

(...)

Any system of method of construction to be used shall be based on a rational analysis in accordance with well-established principles of mechanics. Such analysis shall result in a system that provides a complete load path capable of transferring loads from their point of origin to the load-resisting elements.

The design applicant did not perform a sufficient structural analysis of the cellar level load-bearing masonry pier to determine whether this element would have been able to fully support its intended load during repair.

Post-Permit Requirements:

Chapter 17 of the New York City BC contains provisions regarding special inspections, including structural stability special inspections. BC §§ 1705.25 and 1705.25.1 state:

1705.25 Structural stability. *Special inspections for structural stability is an inspection of a structure to verify the ability of such structural system to remain in position, or revert to the original position or another stable equilibrium position acceptable by this code, without incurring damage to the structural system from the activity or load to which it had been subjected until the completion of construction. Such special inspection shall be required for construction work as specified in this section or elsewhere in this code. (...) The registered design professional responsible for plans for a new building, alteration, or other work requiring structural stability inspections shall identify those areas on the plans submitted to the department in accordance with Section 1704.1.1.1. The means and methods of implementing the structural stability measures shall be prepared by a registered design professional and filed with the department where required in this section and elsewhere in the code.*

(...)

1705.25.1 Alterations to existing structures. *Alterations to existing structures in which loads are transferred from one structural system of structural elements to another, such as installation of columns or girders, replacement of existing bearing walls, the creation of openings or slots in existing walls, girders or floors, alteration of arches, rigid frames, trusses in frame buildings, where the stability or integrity of a structural system is to be temporarily diminished, or where otherwise required by the commissioner, shall be subject to special inspections in accordance with Sections 1705.25.7 through 1705.25.10.*

Based on the above code sections, since the stability/integrity of the cellar level load-bearing masonry pier was to be temporarily diminished, the work was subject to special inspections for structural stability. Additionally, this should have been identified on the plans by the registered design professional, and the means and methods of implementing such structural stability measures should have been prepared by a registered design professional and filed with the department. Special inspections for structural stability were not identified in the DOB NOW filing.

Chapter 33 of the New York City Building Code contains provisions on safeguards during construction or demolition. BC § 3306.8 states:

***3306.8 Demolition sequence.** Any structural member that is being dismembered shall not support any load other than its own weight. No wall, chimney, or other structural part shall be left in such condition that it may collapse or be toppled by wind, vibration, or any other cause. The method of removal of any structural member shall not destabilize remaining members. All handling and movement of material or debris shall be controlled such that it will not develop unaccounted impact loads on the structure.*

Contrary to code provisions above, in addition to its own self-weight, the cellar level load-bearing masonry pier which was being dismembered was supporting load of the floors above. Additionally, it was left in such a state that it collapsed while carrying the entire service load. This further reinforces the need for installation of temporary shoring to provide an alternate load path during the repair of the cellar level load-bearing masonry pier.

4.4 Interviews and Video Evidence:

Deli Employee Interviews:

During an interview with employees of the exposure 1/2 corner commercial space (deli) performed by DOB and DOI, the employees explained that on the day of the collapse, work was being performed throughout the building, including work on the pier. The employees stated that they heard cracking at the location of the pier and asked occupants of the deli to evacuate shortly before the collapse occurred.

General Contractor Worker Interviews:

An interview with workers who were employed by Arsh Landmark General Construction Corp., the company performing masonry repairs at the building, was performed by DOB and DOI on the day of the collapse. Workers stated that no work was done on the cellar level on the day of the collapse, and that work would eventually be performed at that level on a later date.

Video Evidence:

However, DOB and DOI recovered security camera footage from the day of the collapse which show workers performing brick replacement at the exposure 1/2 corner cellar level load-bearing masonry pier. See Images #15 through #43 for screenshots of the video footage. The images show

bricks removed from the cellar level load-bearing masonry pier. There is no evidence of shoring installed at this location of the building.

Based upon the video footage, it appears the cellar level load-bearing masonry pier buckled as workers were performing repairs on the pier. After the pier buckled, the corner of the building was supported by the shear strength of the masonry spandrels between windows at the upper floors for approximately 3.5 minutes, until the spandrels gave way and the corner of the building collapsed.

During an interview with tenants of the exposure 1/2 corner commercial space (deli) performed by DOB and DOI, video footage was obtained from October 29, 2023, which shows severe cracking, spalling, and displacement of masonry at the cellar level load-bearing masonry pier at the exposure 1/2 corner (see Images #10-#12).

5.0 Analysis of Load-Bearing Masonry Pier:

The following section contains calculations of dead and live loads supported by the cellar level load-bearing masonry pier, and the corresponding safe load capacity of the pier. Calculations were performed using historical values and formulae which would have been used at the time of construction of the building at 1915 Billingsley Terrace.

21 linear feet of wall total is supported by the pier.

Wall is 1'-4" thick at the 1st floor with a 14' wall height.

Wall is 1'-0" thick at the 2nd through 6th floors with a 10' typical floor height.

Load Takedown for Dead plus Live load acting on Pier:

Weight of cellar floor wall (lintel to 1st floor):

$$DL = (1ft\ 4in\ thick) \times (21ft\ long) \times (4ft\ high) \times \left(120 \frac{lb}{cu.\ ft.}\ unit\ weight\right)$$

$$DL = 13,406\ lb$$

Weight of 1st through 6th floor wall:

$$DL = \left[(1ft\ 4in\ thick) \times (21ft\ long) \times (10ft\ high) \times (1\ floor) \times \left(120 \frac{lb}{cu.\ ft.}\ unit\ weight\right) \right]$$

$$+ \left[(1ft\ thick) \times (21ft\ long) \times (10ft\ high) \times (5\ floors) \right]$$

$$\times \left(120 \frac{lb}{cu.\ ft.}\ unit\ weight\right)$$

$$DL = 159,516\ lb$$

Weight of Steel Beams:

$$\omega = \frac{175 \text{ lb}}{\text{ft}} \text{ per plans}$$

$$DL = 175 \frac{\text{lb}}{\text{ft}} \times 21 \text{ ft} = 3,675 \text{ lb}$$

Weight of Pier:

$$DL = (6.11 \text{ sq. ft}) \times (10 \text{ ft high}) \times \left(120 \frac{\text{lb}}{\text{cu. ft.}} \text{ unit weight}\right) = 7,332 \text{ lb}$$

Weight of Parapet:

$$DL = (8 \text{ in thick}) \times (21 \text{ ft long}) \times (3 \text{ ft high}) \times \left(120 \frac{\text{lb}}{\text{cu. ft.}} \text{ unit weight}\right) = 5,040 \text{ lb}$$

Minus “weight” of windows:

$$DL = (1 \text{ ft thick}) \times (3 \text{ ft wide}) \times (5 \text{ ft high}) \times (6 \text{ windows}) \times \left(120 \frac{\text{lb}}{\text{cu. ft.}} \text{ unit weight}\right)$$

$$DL = (-)10,800 \text{ lb}$$

Total weight of wall system:

$$P_{DL1} = 13,406 \text{ lb} + 159,516 \text{ lb} + 3,675 \text{ lb} + 7,332 \text{ lb} + 5,040 \text{ lb} - 10,800 \text{ lb}$$

$$P_{DL1} = 178,169 \text{ lb}$$

Weight of floor system dead load:

Tributary Area: 104 sq. ft. per floor

Estimate typical floor dead load (psf):

• Wood 3x10 @ 12” o.c.	9psf
• Subfloor	3psf
• Wood flooring	4psf
• Partition equivalent load	6psf
• Plaster Ceiling	<u>+10psf</u>
• Total	32psf

Estimate 1st floor dead load (psf):

• 5” thick cinder concrete slab*	40psf
• Subfloor	3psf
• Wood flooring	4psf
• Partition equivalent load	6psf
• Plaster Ceiling	<u>+10psf</u>
• Total	63psf

*Assume 95 pcf cinder concrete

Estimate roof dead load (psf):

- Wood 3x10 @ 12" o.c. 9psf
- Roof deck 3psf
- Insulation 2psf
- Built-up roof 3psf
- Plaster ceiling +10psf
- Total 27psf

Total dead load of floor/roof systems:

$$P_{DL2} = \left[(104 \text{ sq. ft.}) \times (5 \text{ floors}) \times \left(32 \frac{\text{lb}}{\text{sq. ft.}} \right) \right] + \left[(104 \text{ sq. ft.}) \times (1 \text{ floor}) \times \left(63 \frac{\text{lb}}{\text{sq. ft.}} \right) \right] \\ + \left[(104 \text{ sq. ft.}) \times (1 \text{ roof}) \times \left(27 \frac{\text{lb}}{\text{sq. ft.}} \right) \right] \\ P_{DL2} = 26,000 \text{ lb}$$

Total live load of floor/roof systems:

Residences 40psf
Roof 30psf Reference *Kidder Parker Architects' and Builders' Handbook* (18th ed.)

$$P_{LL} = \left[(104 \text{ sq. ft.}) \times (6 \text{ floors}) \times \left(40 \frac{\text{lb}}{\text{sq. ft.}} \right) \right] + \left[(104 \text{ sq. ft.}) \times (1 \text{ roof}) \times \left(30 \frac{\text{lb}}{\text{sq. ft.}} \right) \right] \\ P_{LL} = 28,080 \text{ lb}$$

Total load on pier D + L:

$$P_{D+L} = 178,169 \text{ lb} + 26,000 \text{ lb} + 28,080 \text{ lb} \\ P_{D+L} = 232,249 \text{ lb}$$

Determine safe load on brick pier:

Hard-burned brick in Portland cement mortar per plans.

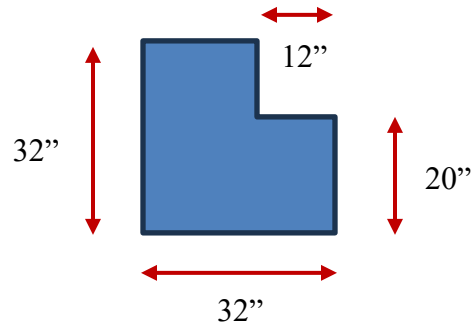
Allowable pressure on brick: 250 psi
Reference *Kidder Parker Architects' and Builders' Handbook* (18th ed.)

Aspect ratio of pier:

$$\frac{H}{D} = \frac{175" \text{ height}}{32" \text{ least dimension}} = 5.46 \\ \text{Reference } \textit{Kidder Parker Architects' and Builders' Handbook} \text{ (18}^{\text{th}} \text{ ed.)}$$

Since aspect ratio of pier is less than 6, full (unreduced) crushing strength of masonry may be used.

Find area of pier:



$$Area = (32 \text{ in.})^2 - (12 \text{ in.})^2 = 880 \text{ in}^2$$

Safe load on brick pier:

$$P_{ALLOW} = 250 \text{ psi} \times 880 \text{ in.}^2$$

$$P_{ALLOW} = 220,000 \text{ lb}$$

Reference *Kidder Parker Architects' and Builders' Handbook* (18th ed.)

$$P_{Allow} \approx P_{D+L}$$

$$220,000 \text{ lb} \approx 232,249 \text{ lb}$$

The design load and allowable load appear to be within rounding/approximation tolerances (approximately 5%). Therefore, the brick pier was designed to support the building weight and occupancy loads which were acting upon the pier prior to the start of repair work.

Based on field measurements obtained by FEU from rubble at the collapse site, each brick has a nominal size of approximately 8" long by 4" deep.

Therefore, each brick contributes approximately 32 sq. in. towards the cross-sectional area of the completed brickwork.

For each brick (in cross-section) removed from the cellar level load-bearing masonry pier, we would see a reduction in safe load of approximately 8,000 lb (32 sq. in x 250 psi = 8,000lb).

6.0 Conclusions:

Following an analysis of the history of the building, onsite observations by FEU, along with interviews, physical evidence, and digital evidence at 1915 Billingsley Terrace, the Department of Buildings offers the following conclusions:

1. The cellar level load-bearing masonry pier at the exposure 1/2 corner is a load-bearing structural member carrying weight from the 1st floor to the roof level.
2. Façade repair drawings by Richard Koenigsberg call for removal and replacement of brick at the pier. Furthermore, this pier is identified (incorrectly) as a cavity wall system in his drawing set. Repair drawings do not indicate that this pier is a critical structural member supporting a significant floor area from the 1st floor through the roof, nor do the drawings propose or indicate shoring or other means of performing the specified brick replacement work in a safe manner. If there were doubts as to the nature (construction type, whether load-bearing or not, etc.) of this pier, it was not addressed on the drawings, nor were any probes or investigations indicated as required.
3. Work was ongoing at the building up until the day of the collapse. Work included removal of masonry at the load-bearing masonry pier. No shoring or other means of temporarily supporting building gravity loads was in place during work on the masonry pier.
4. The New York City Building Code is clear regarding the need for proper support during removal of structural members.
5. The removal of masonry at the load-bearing masonry pier reduced the strength of the structural member such that it was inadequate to support the weight applied to the pier, became overstressed and buckled as a result, which contributed to the partial collapse of the exposure 1/2 corner exterior walls and floors at the 1st-6th floor and roof level.
6. Also, special inspections for structural stability were not identified or performed as required by code.



Image #3: Partial collapse at Exposure 1/2 Corner. (2023-12-11, FEU)



Image #4: Partial collapse at Exposure 1/2 Corner (2023-12-11, FEU)



Image #5: Partially collapsed floor at Exposure 1/2 Corner. (2023-12-11, FEU)



Image #6: Partial collapse at Exposure 1/2 Corner. Roof and 6th floors at risk of further collapse
(2023-12-11, FEU)

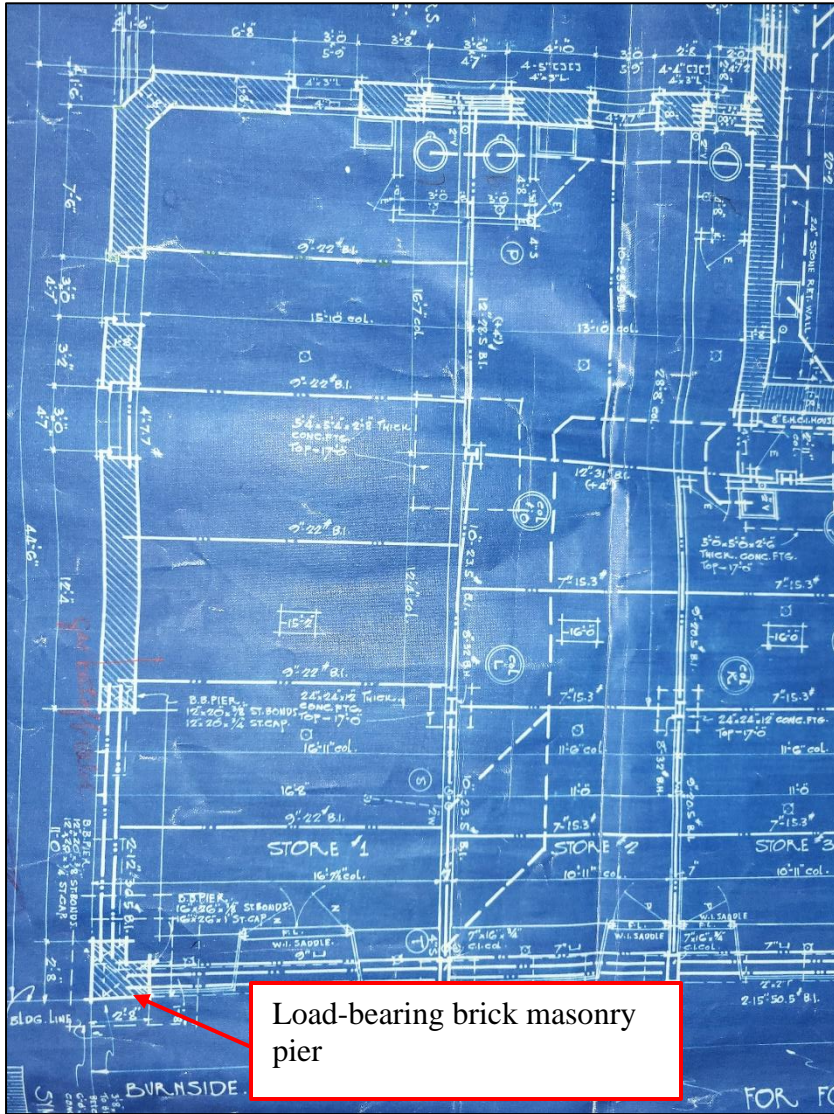


Image #7: Original cellar structural plans of 1915 Billingsley Terrace, BX (2023-12-14, FEU)

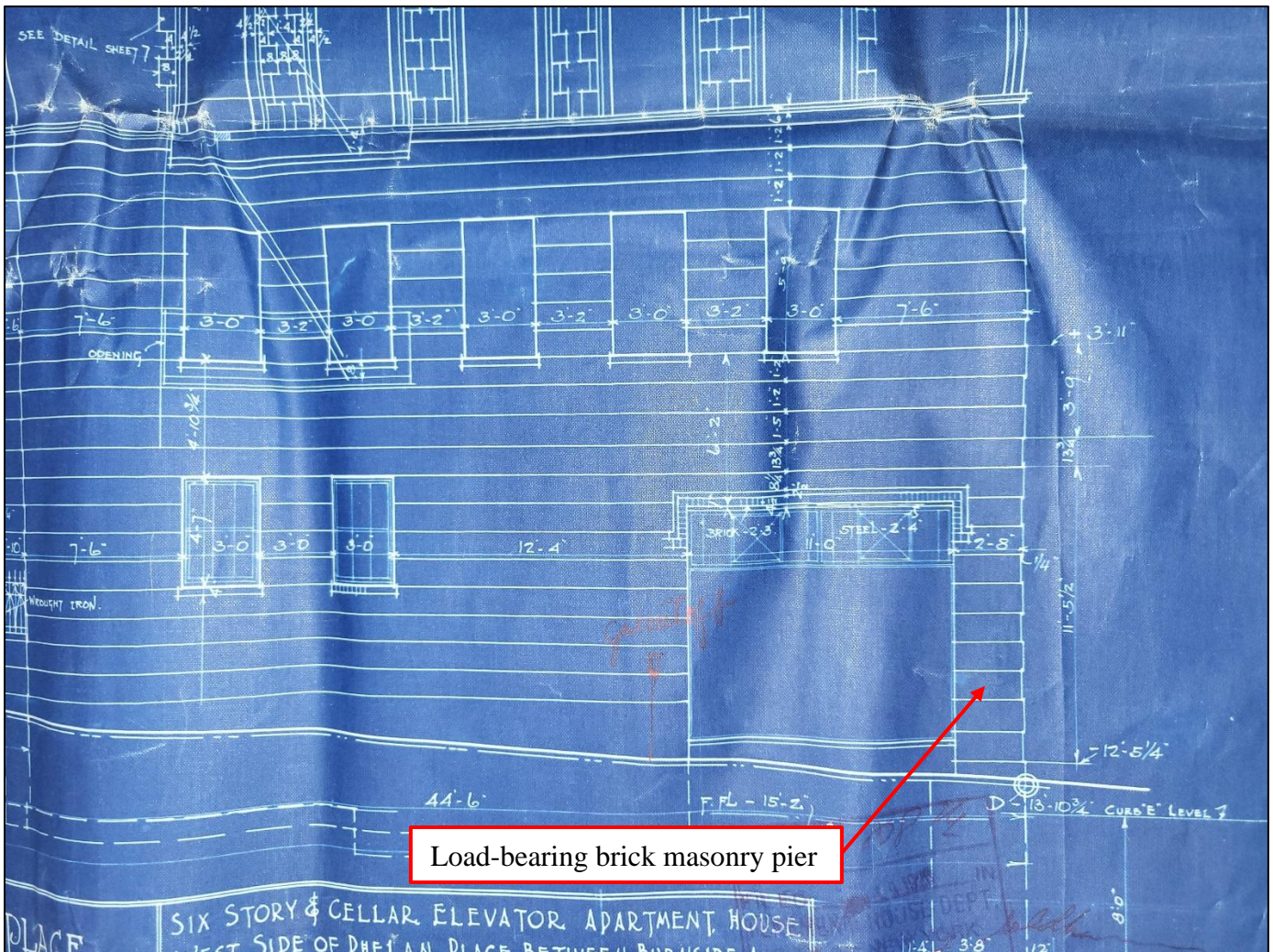


Image #9: Exposure 2 elevation of 1915 Billingsley Terrace, BX (2023-12-14, FEU)



Image #10: Prior to collapse, photos extracted from video taken on October 29, 2023 – Vertical crack from grade at the cellar level load-bearing masonry pier along Phelan Ave. (2023-10-29, Deli owner)



Image #11: Prior to collapse, photos extracted from video taken on October 29, 2023 – Bulging, displaced brick from the top of the cellar level load-bearing masonry pier along Phelan Ave. (2023-10-29, *Deli owner*)



Image #12: Prior to collapse, photos extracted from video taken on October 29, 2023 – Bricks removed from cellar level load-bearing masonry pier along Phelan Ave. (2023-10-29, Deli owner)

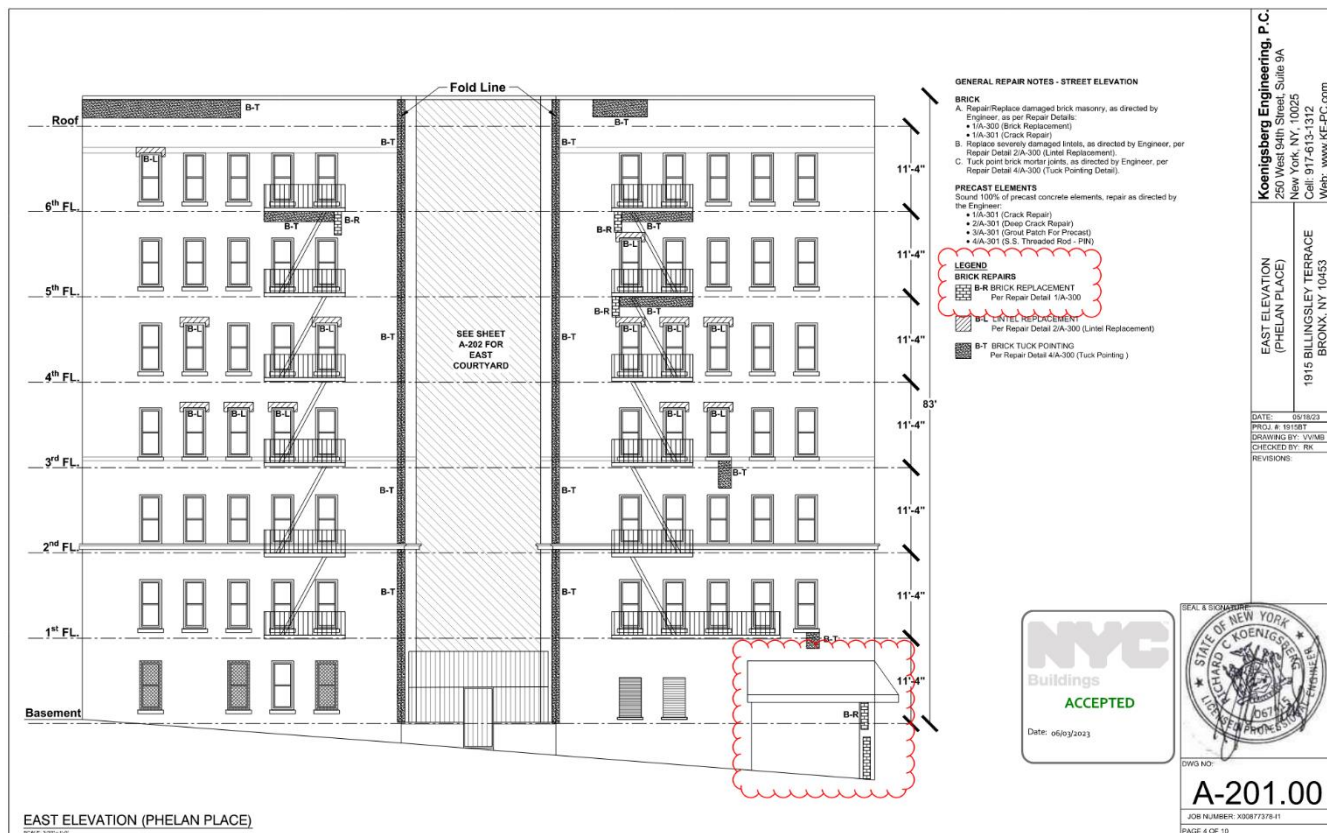
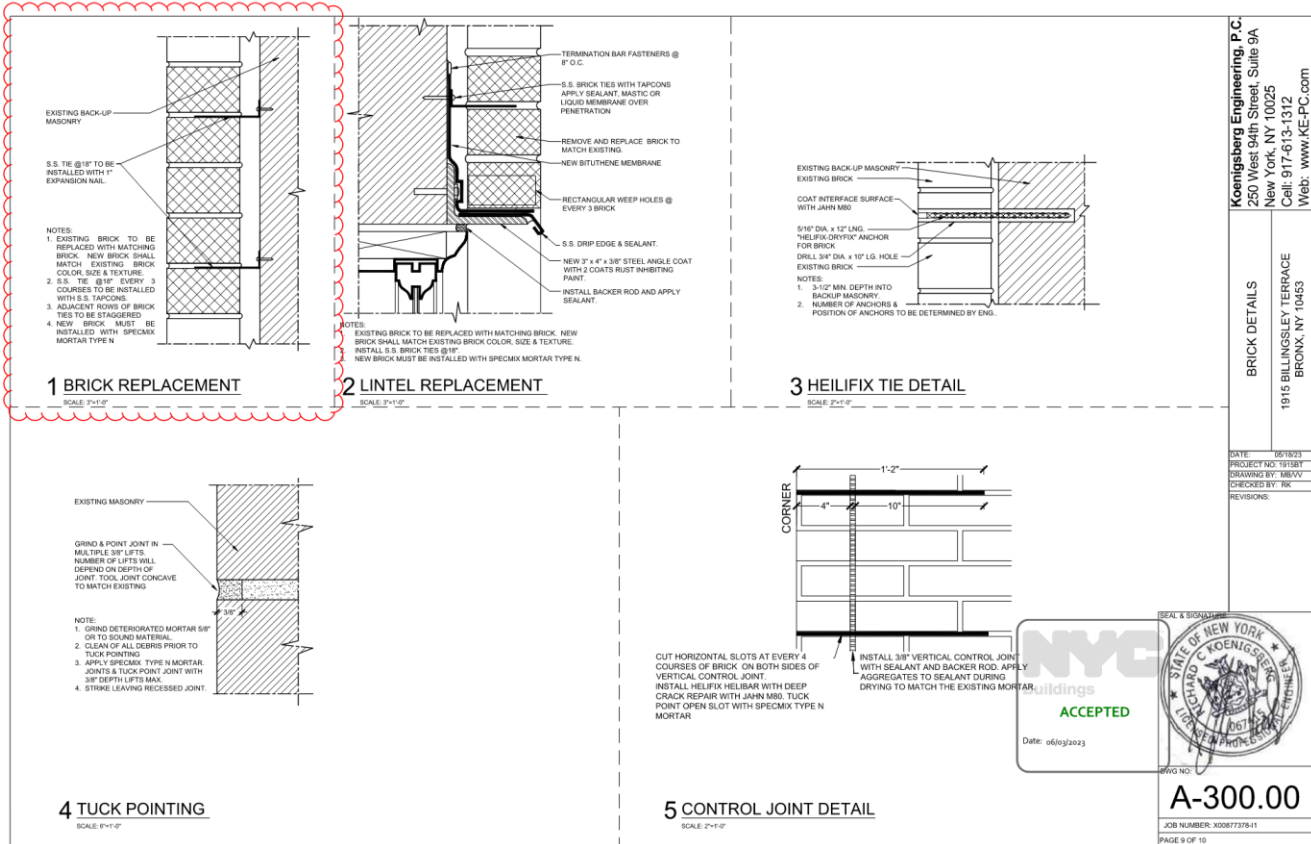


Image #13: Façade repair drawing elevation showing brick replacement at cellar level load-bearing masonry pier (clouded in red) (2023-12-12, DOB NOW filing)



Koenigsberg Engineering, P.C.
250 West 94th Street, Suite 9A
New York, NY 10025
Cell: 917-613-1312
Web: www.KE-PC.com

BRICK DETAILS
1915 BILLINGSLEY TERRACE
BRONX, NY 10463

DATE: 08/02/23
PROJECT NO: 1915B
DRAWING BY: MEVV
CHECKED BY: RW
REVISIONS:

NYC Buildings
ACCEPTED

Date: 06/02/2023

SEAL & SIGNATURE
STATE OF NEW YORK
RICHARD C KOENIGSBERG
100 NEW YORK
100 NEW YORK

DWG NO:
A-300.00

JOB NUMBER: X0087378-11
PAGE 9 OF 10

Image #14: Façade repair typical details (brick replacement clouded in red) (2023-12-12, DOB NOW filing)

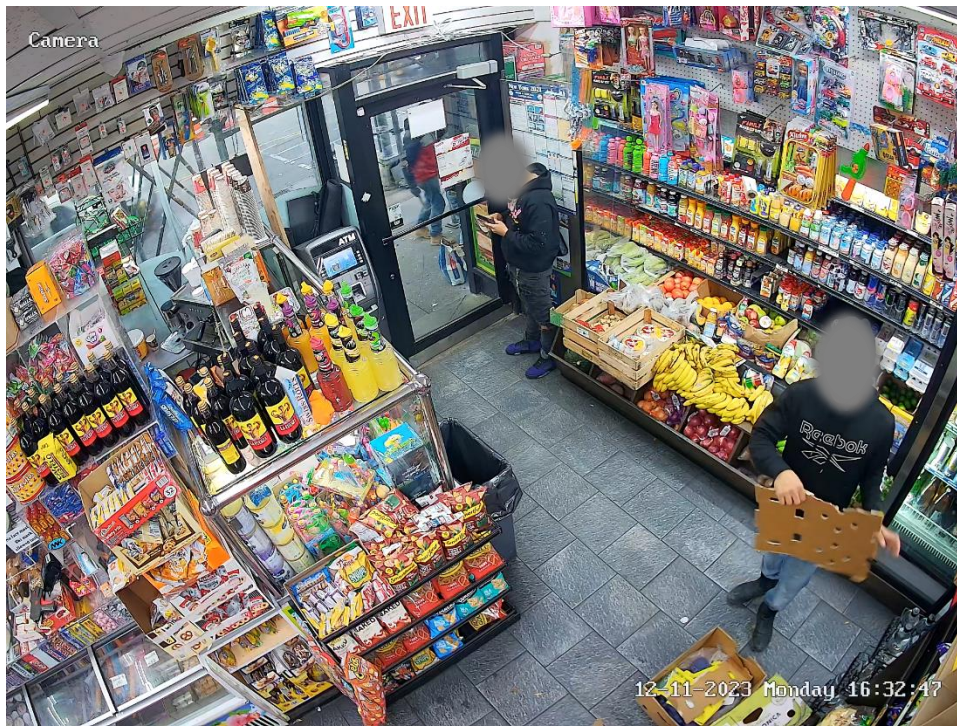


Image #15: D8 Camera Pre-Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

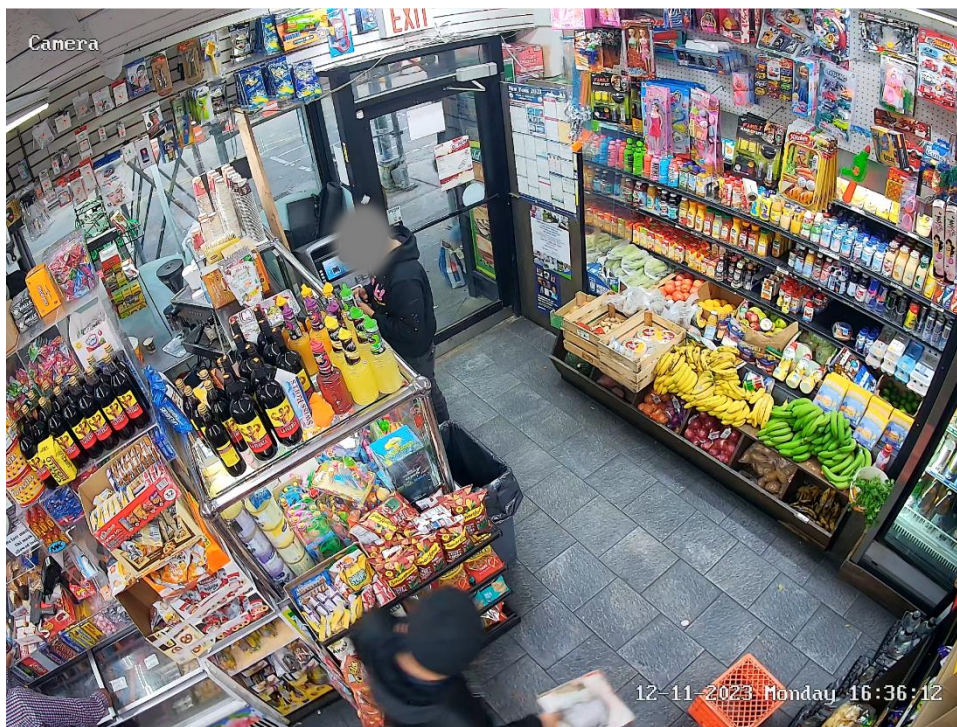


Image #16: D8 Camera Initial Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

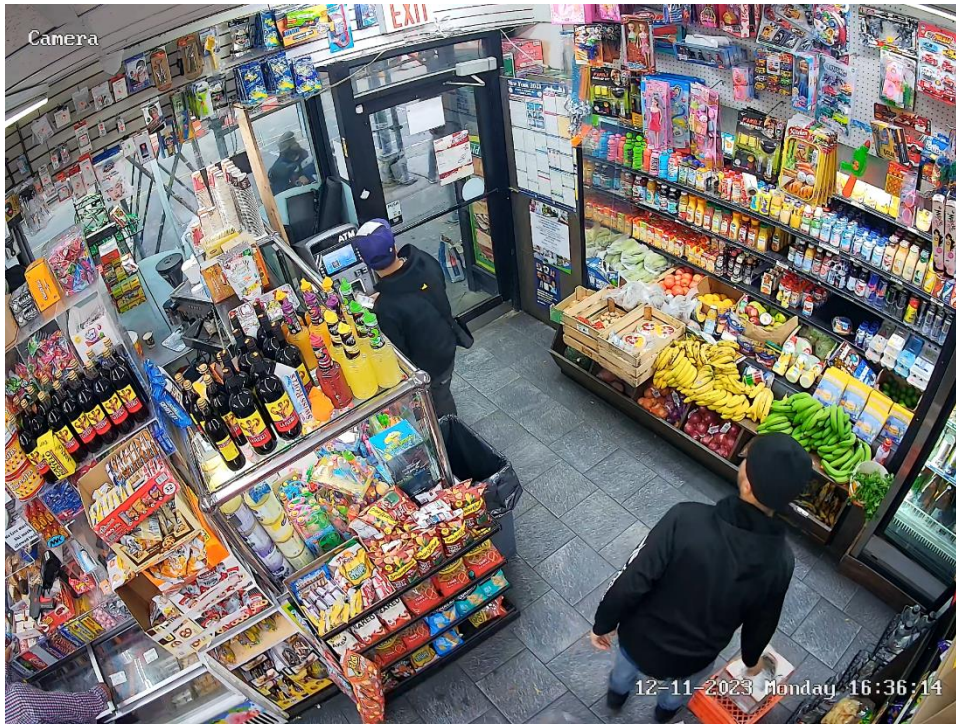


Image #17: D8 Camera Initial Movement with worker reactions (2023-12-11, 172 W. Burnside Ave. Security Camera)

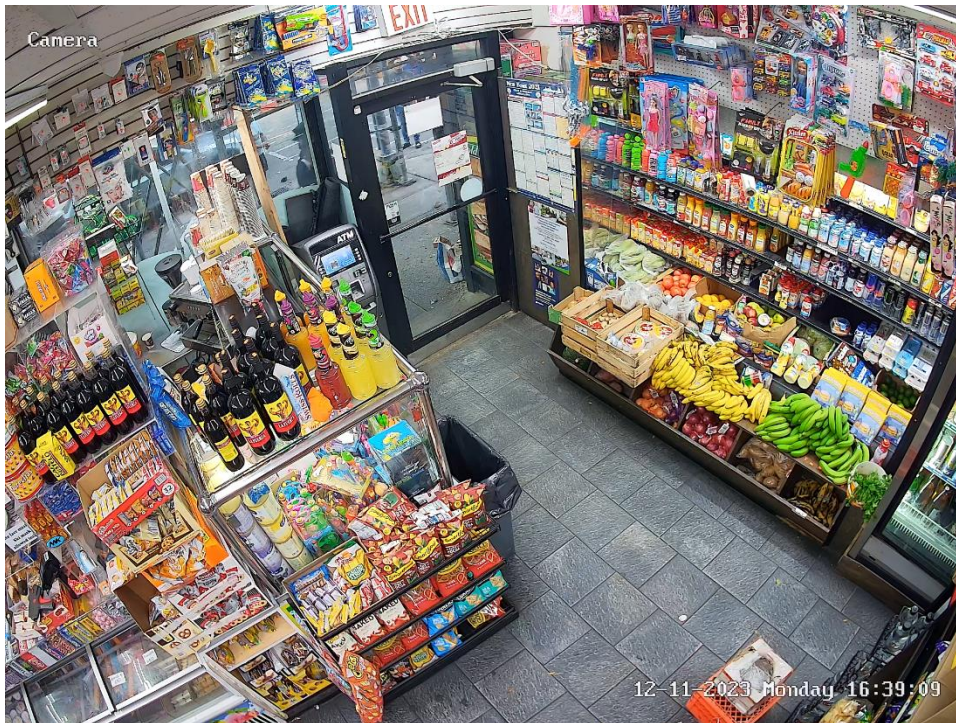


Image #18: D8 Camera Immediately Pre-Collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)

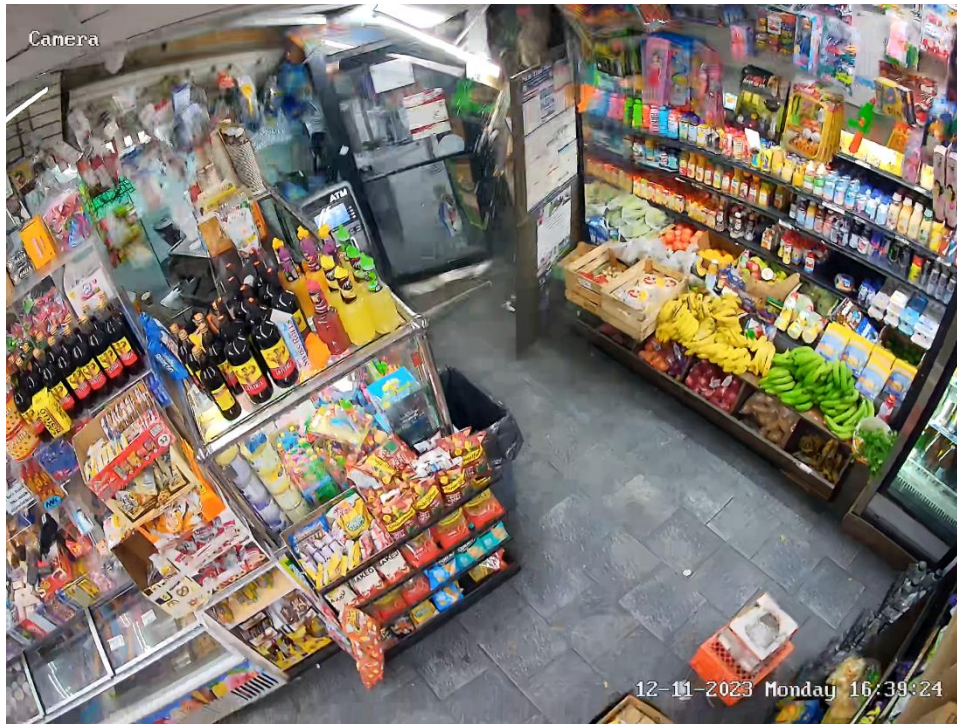


Image #19: D8 Camera Moment of Collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #20: D8 Camera Post-Collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #21: D8 Camera FDNY Contact (2023-12-11, 172 W. Burnside Ave. Security Camera)

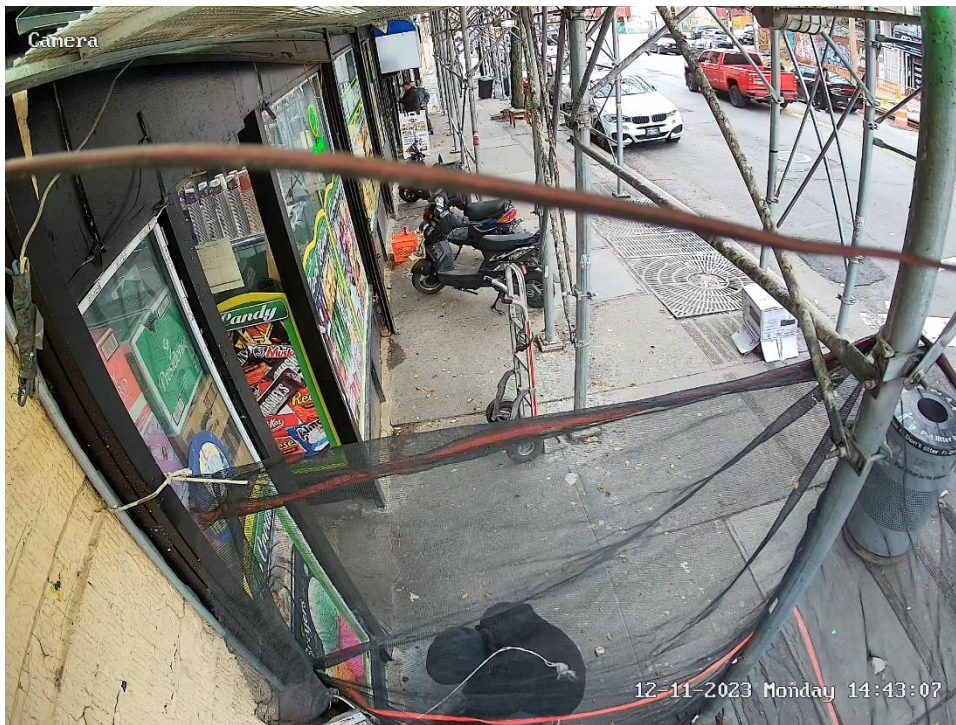


Image #22: D18 Camera worker using chipping gun at bottom of pier (2023-12-11, 172 W. Burnside Ave. Security Camera)

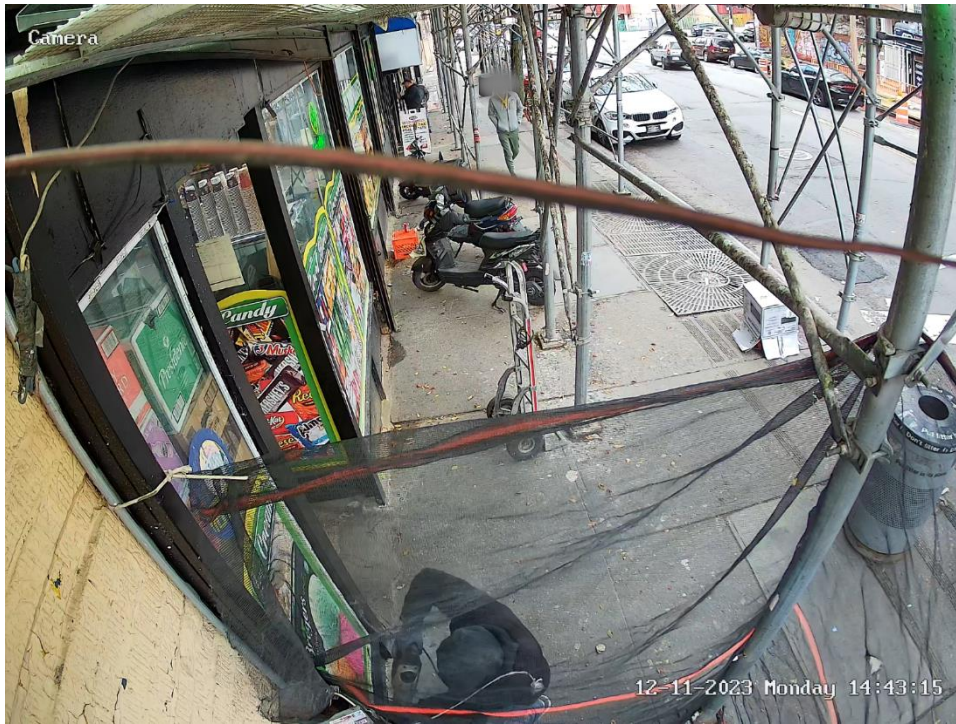


Image #23: D18 Camera worker using chipping gun at bottom of pier (2023-12-11, 172 W. Burnside Ave. Security Camera)

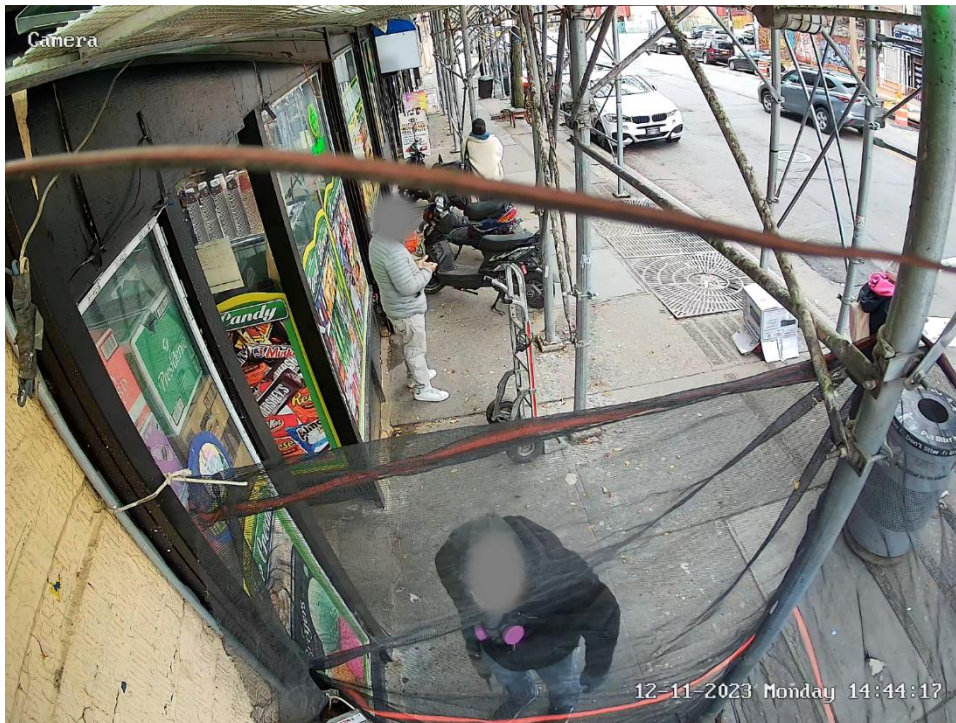


Image #24: D18 Camera worker standing with chipping gun (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #25: Camera D18 Arrival of Permit Holder (2023-12-11, 172 W. Burnside Ave. Security Camera)

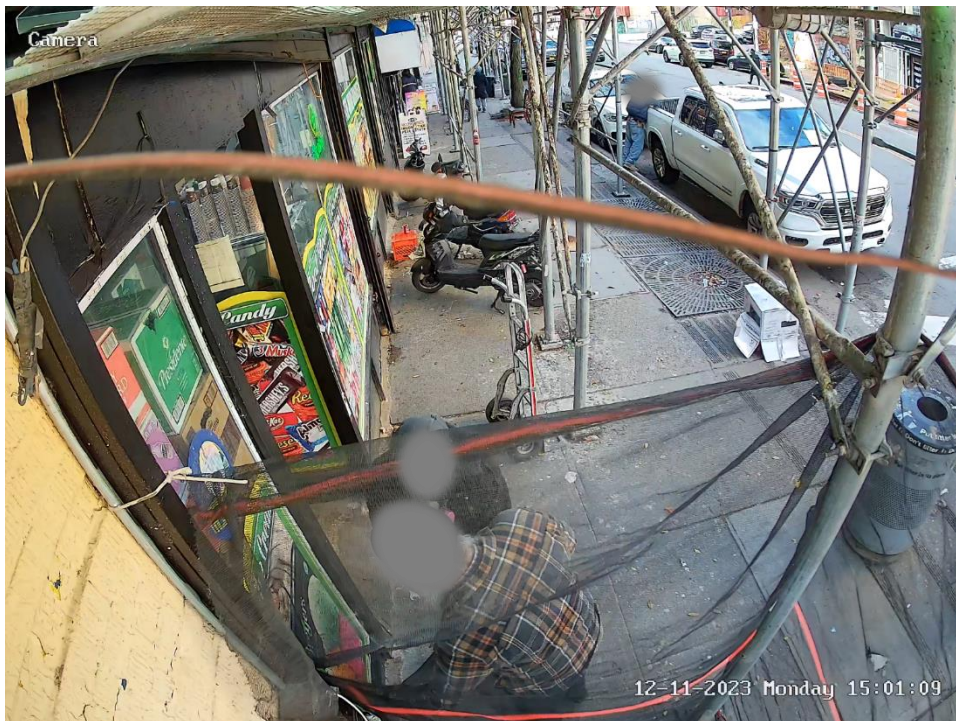


Image #26: D18 Camera Permit Holder giving instructions to worker (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #27: D18 Camera Permit Holder inspecting load-bearing masonry pier (2023-12-11, 172 W. Burnside Ave. Security Camera)

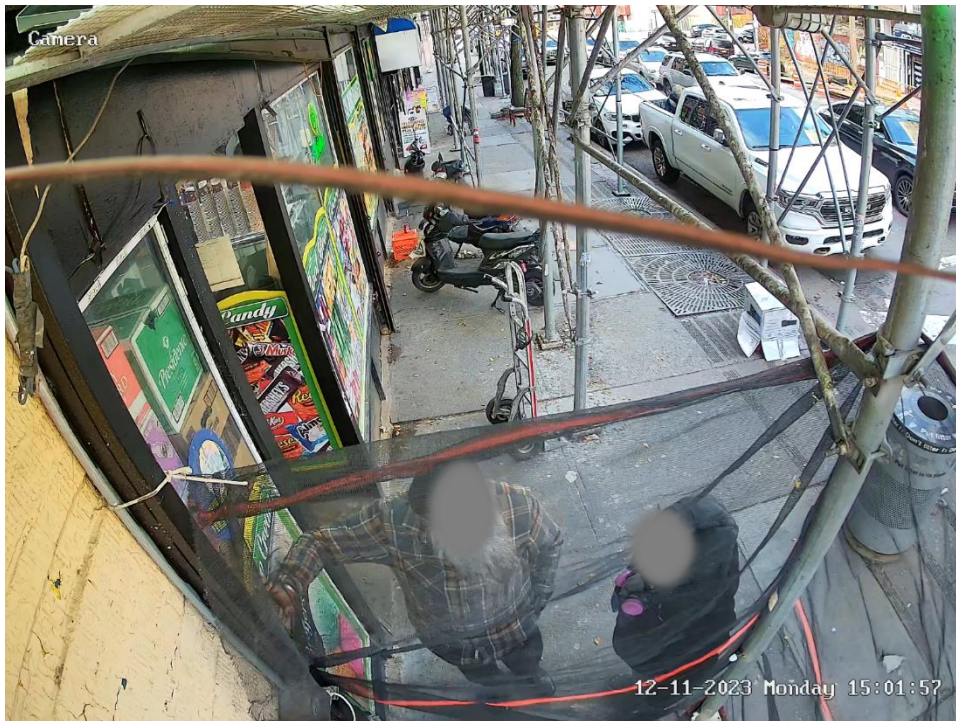


Image #28: D18 Camera Permit Holder giving instructions to worker (2023-12-11, 172 W. Burnside Ave. Security Camera)

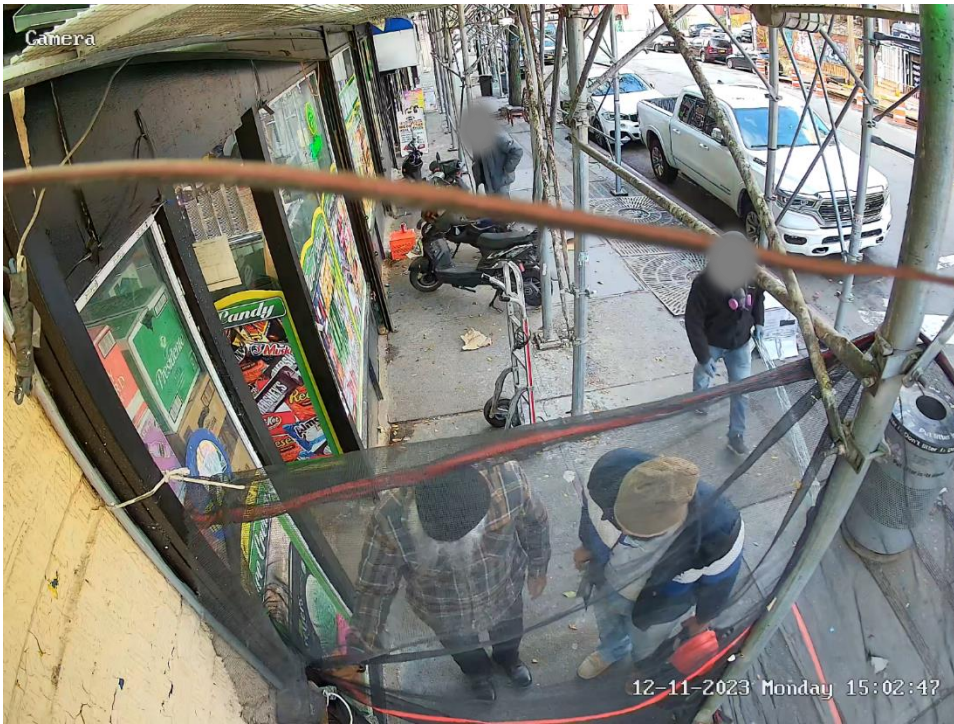


Image #29: D18 Camera Permit Holder giving instructions to other worker (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #30: D18 Camera Permit Holder leaves site (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #31: D18 Camera Worker with tools (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #32: D18 Camera Worker with tools (2023-12-11, 172 W. Burnside Ave. Security Camera)

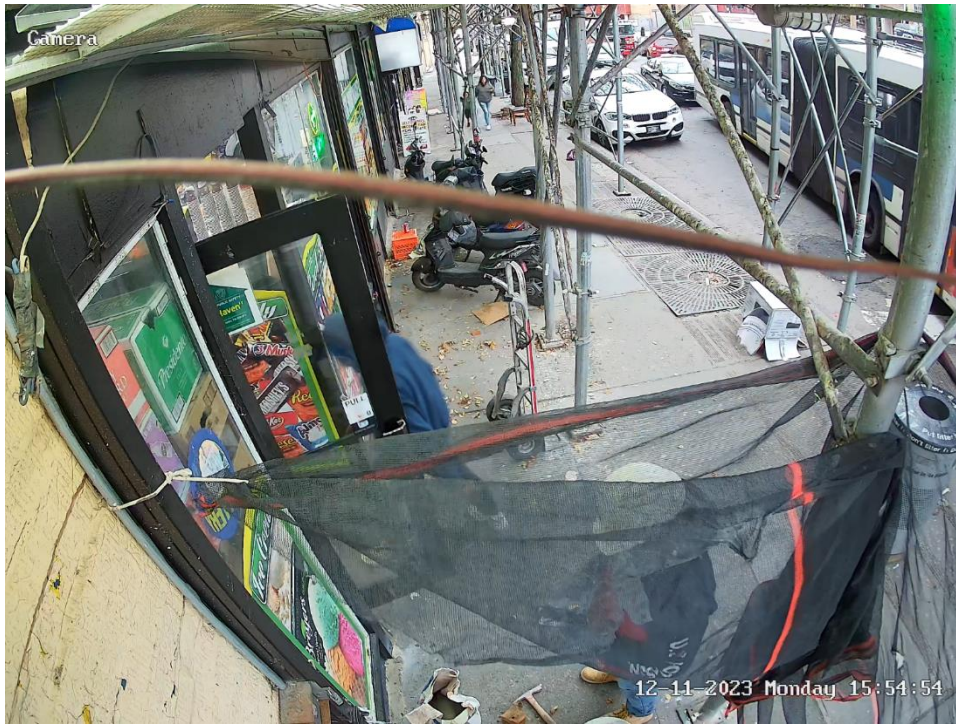


Image #33: D18 Camera Worker with tools and brick (2023-12-11, 172 W. Burnside Ave. Security Camera)

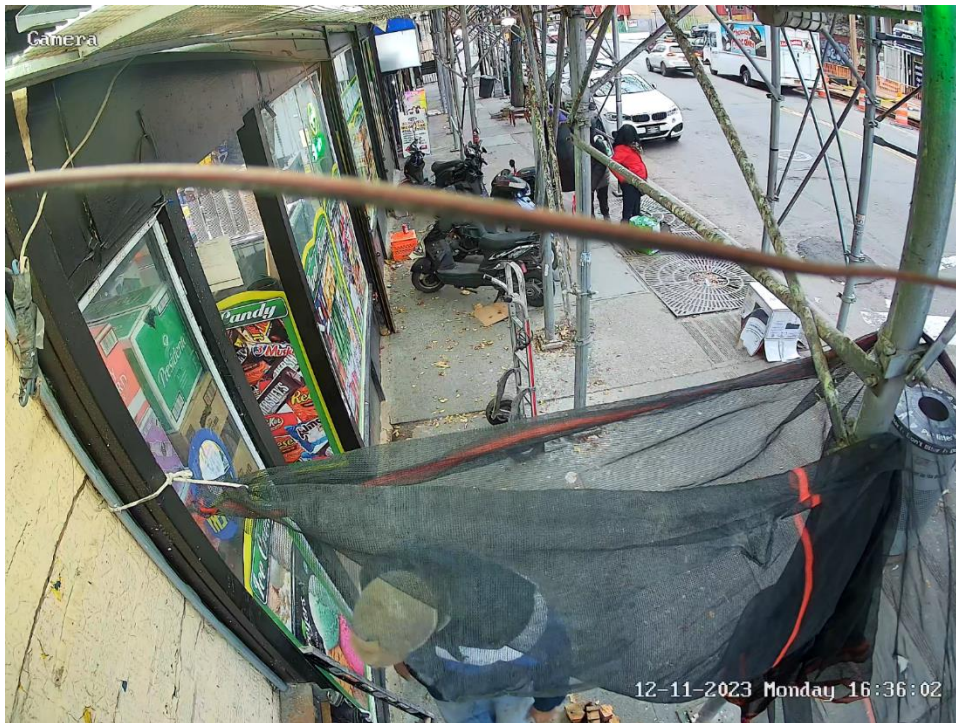


Image #34: D18 Camera Immediately Pre-Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

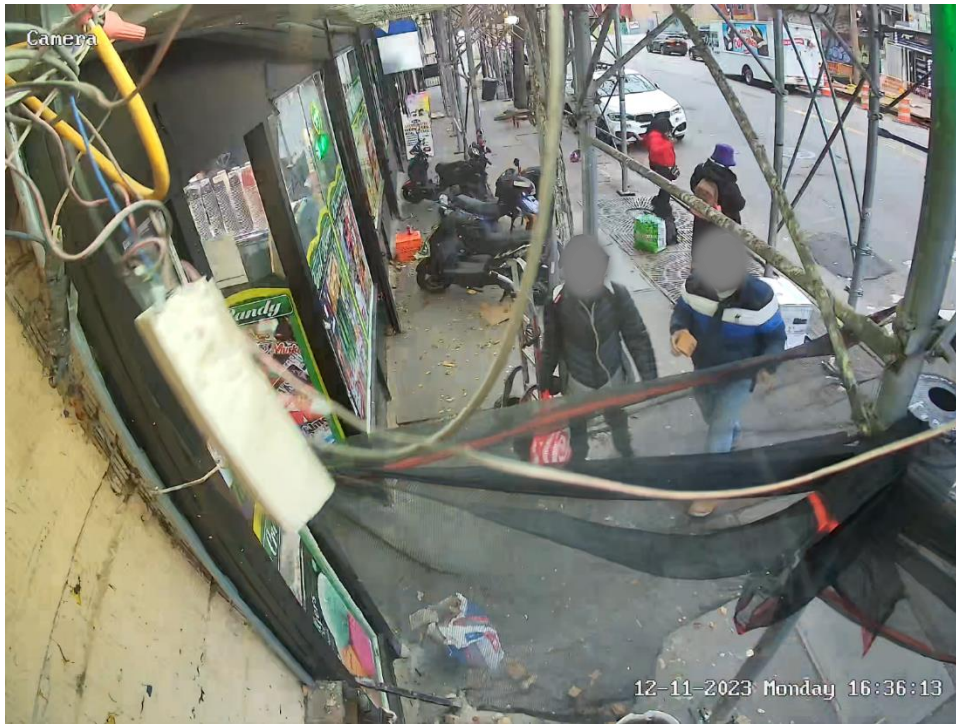


Image #35: D18 Camera Initial Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

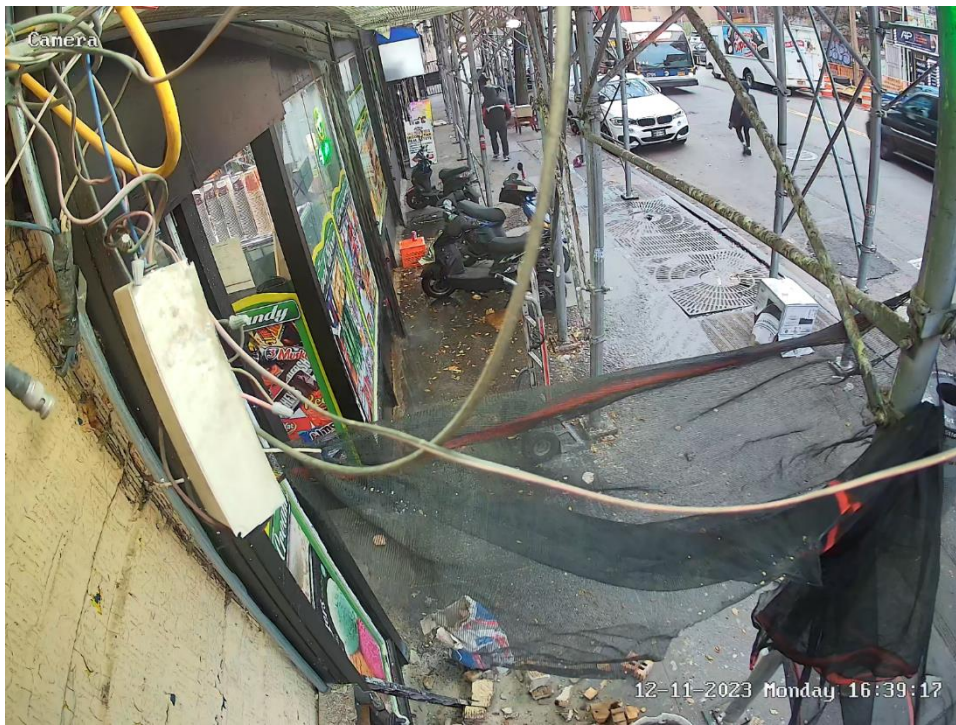


Image #36: D18 Camera Immediately before collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #37: D18 Camera Moment of Collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)

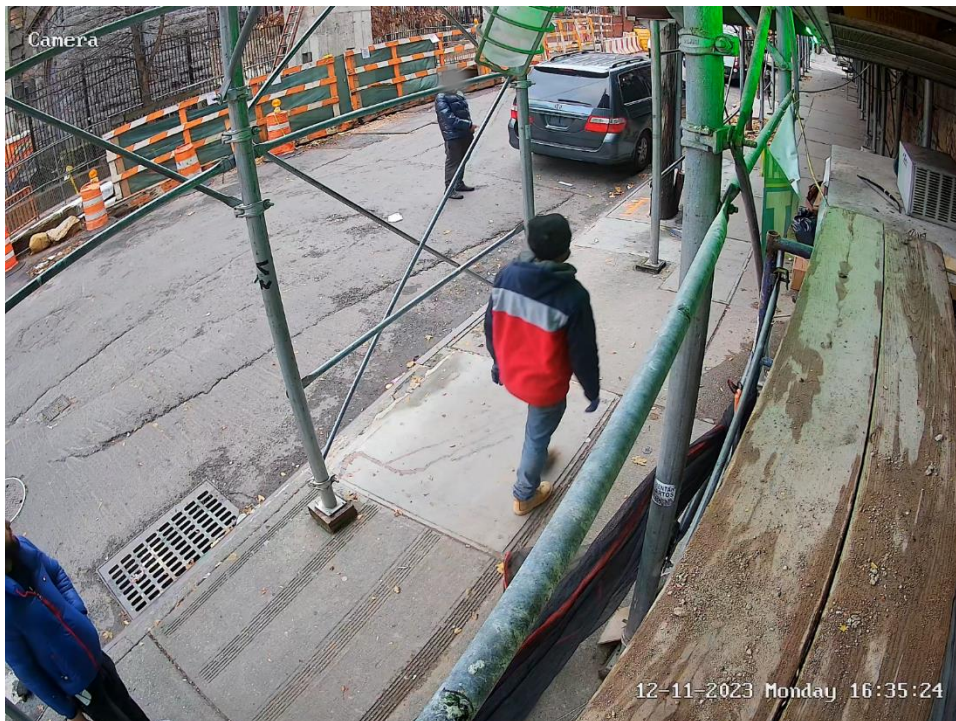


Image #38: D20 Camera Pre-Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

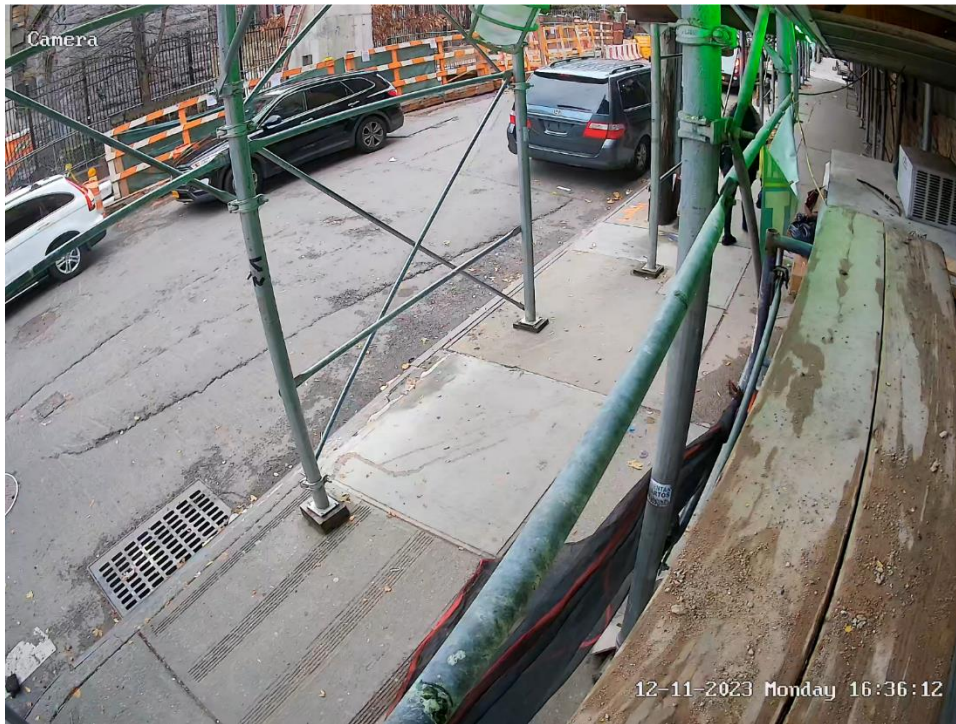


Image #39: D20 Camera Initial Movement (2023-12-11, 172 W. Burnside Ave. Security Camera)

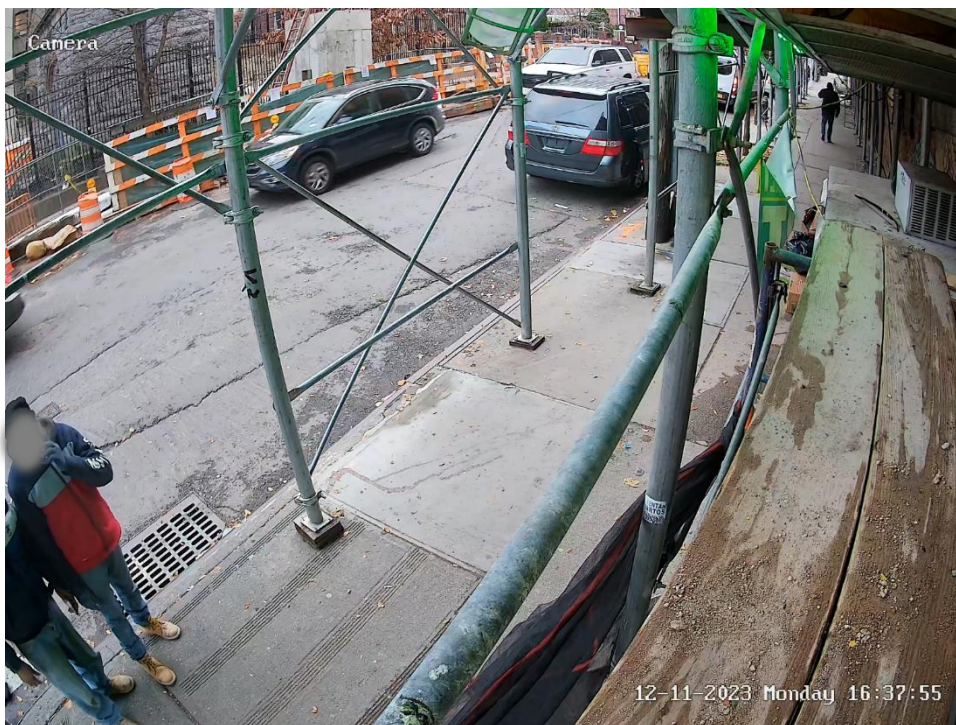


Image #40: D20 Camera Workers on Phone (2023-12-11, 172 W. Burnside Ave. Security Camera)

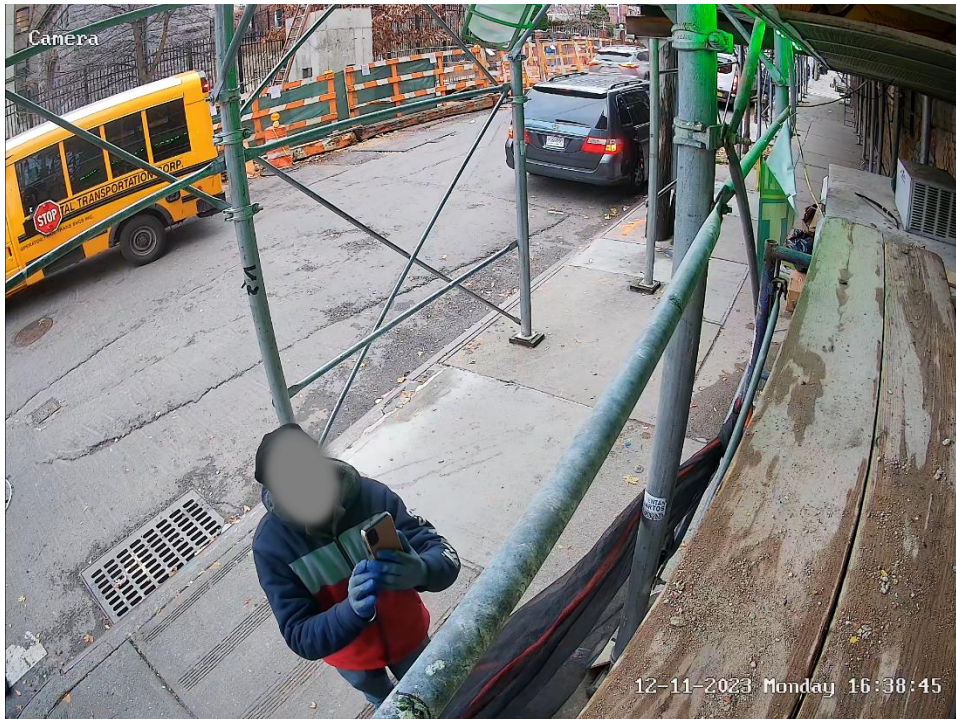


Image #41: D20 Camera Worker taking video of pier (2023-12-11, 172 W. Burnside Ave. Security Camera)



Image #42: D20 Camera Worker filming upper stories of building (2023-12-11, 172 W. Burnside Ave. Security Camera)

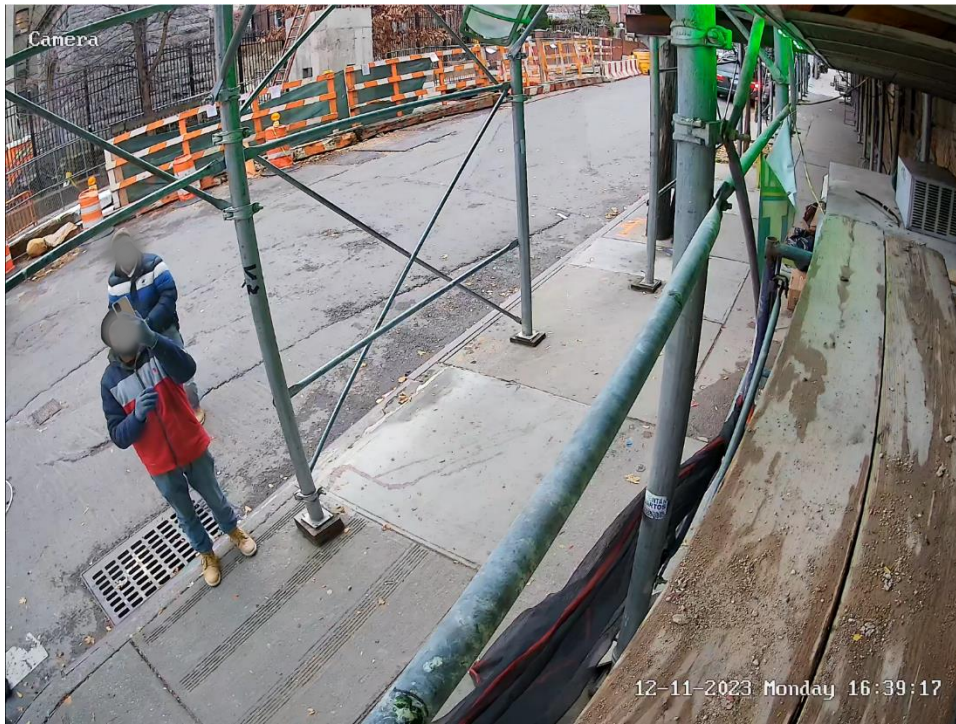


Image #43: D20 Camera Immediately Pre-Collapse (2023-12-11, 172 W. Burnside Ave. Security Camera)

§28-101.4.3 Optional use of the 1968 building code for work on prior code buildings. At the option of the owner, and subject to applicable provisions of this code, work on prior code buildings may be performed in accordance with the requirements and standards set forth in the 1968 building code, or where the 1968 code so authorizes, the code in effect prior to December 6, 1968.

Exceptions:

1. **Fuel gas, plumbing and mechanical work.** The installation of and work on all appliances, equipment and systems regulated by the New York city fuel gas code, the New York city plumbing code and the New York city mechanical code shall be governed by applicable provisions of those codes relating to new and existing installations.
2. **Fire protection systems.** Alterations of buildings and changes of use or occupancy shall be governed by chapter 9 of the New York city building code, subject to special provisions for prior code buildings as set forth therein.
3. **Elevators, conveyors and amusement rides.** The installation of and work on elevators, conveyors, and amusement rides shall be governed by chapter 30 and appendix K of the New York city building code and the rules of the department, subject to special provisions for prior code buildings as set forth therein.
4. **Safety during construction operations.** Safety of public and property during construction operations including demolition shall be governed by chapter 33 of the New York city building code.
5. **Accessibility.** Alterations, including minor alterations, of buildings and changes of use or occupancy, shall be governed by chapter 11 of the New York city building code, subject to special provisions for prior code buildings as set forth therein.
6. **Encroachments into the public right of way.** Encroachments onto the public right of way shall be governed by chapter 32 of the New York city building code.
7. **Administration and enforcement.** Except as otherwise limited by the commissioner, administration and enforcement of the 1968 building code shall be in accordance with this code, including but not limited to approval of construction documents, issuance of permits and certificates of occupancy, tests and inspections, penalties and enforcement.
8. **Special inspections.** Controlled inspections and semi-controlled inspections as referenced in the 1968 building code shall be deemed to be special inspections and shall be governed by the provisions of this code relating to special inspections.
9. **Materials.** Materials regulated in their use by the 1968 building code shall be subject to applicable provisions of this code.
10. **Security grilles.** The installation and replacement of security grilles shall comply with section 1010.1.4.4 of the New York city building code.
11. **Energy efficiency.** All work related to energy efficiency shall be regulated by the New York city energy conservation code.
12. **Roof recovering and replacements.**
 - 12.1. **Installation and materials.** Work involving the recovering or replacing of an existing roof covering shall be governed by sections 1511.1 through 1511.7 of the New York city building code;
 - 12.2. **Cool roofs.** Work involving the recovering or replacing of an existing roof covering shall comply with section 1504.9 of the New York city building code unless the area to be recovered or replaced is less than fifty percent of the roof area and less than 500 square feet (46 m²).
 - 12.3. **Green roofs.** Notwithstanding the applicant's election to use the 1968 building code or prior code, work involving green roof systems and container gardens shall be permitted to be performed pursuant to Chapter 15 of the New York city building code.
 - 12.4. **Sustainable roofs.** Work involving the replacing of an entire existing roof deck or roof assembly shall comply with section 1512.2 of the New York city building code.
13. **Handrails.** Where the alteration of a building includes the addition or replacement of an entire stair enclosure including the stairs, handrails shall comply with section 1011.11 and section 1014 of the New York city building

ADMINISTRATION

- code. Where the alteration of a building includes the addition or replacement of ramps, handrails shall comply with section 1012.8 and section 1014 of such code.
14. **Guards.** Where the alteration or repair of a building involves the addition or replacement of guards, such guards shall comply with sections 1015 and 1607.8 of the New York city building code.
 15. **Flood hazard areas.** Within flood hazard areas in accordance with section 28-104.9.4, all work for any activity regulated by Appendix Q of the New York city building code shall be governed by such appendix.
 16. **Structural.** The use of load resistance factor design (LRFD), calculation of live loads, and applicability of seismic and wind loads shall be governed by special provisions for prior code buildings as set forth in section 1601.2 of the New York city building code.
 17. **Emergency and standby power systems.** The installation of and work on emergency and standby power systems shall comply with section 2702.1 of the New York city building code.
 18. **Parking garages and open parking lots.** Where an alteration of a parking garage or an open parking lot includes an increase in the size of the electric service, such alteration shall include provisions for the installation of electric vehicle charging stations in accordance with section 406.4.10 or 406.9.8 of the New York city building code, as applicable.
 19. **Mold protection.** Alterations shall comply with sections 2506 and 2509 of the New York city building code relating to areas subject to moisture or water damage.
 20. **Exterior glazing.** Where the alteration of a building includes the replacement of all exterior glazing, such alteration shall comply with section 1403.8 of the New York city building code.

Image #44: (2023-01-19, Title 28 of NYC Administrative Code)