

SUMMARY REPORT
OF THE EXISTING
STRUCTURAL
CONDITION SURVEYS

Brooklyn, NY 11201

Prepared For:

Forest City Ratner Companies
One Metrotech Center North
11th Floor
Brooklyn, NY 11201

Prepared By:

LZA TECHNOLOGY
641 Avenue of the Americas
New York, NY 10011
917-661-7800

Project No. 25240.04

November 07, 2005

TABLE OF CONTENTS

	Page
I. Executive Evaluation Summary	1
II. Introduction	33
III. Description of the Buildings	34
IV. Field Observations	35

I. EXECUTIVE EVALUATION SUMMARY

608-620 Atlantic Avenue

LZA Technology recommends that the structures at 608-620 Atlantic Avenue be demolished because they pose an immediate threat to the preservation of life, health, and property based on the observations described below.

The majority of the distresses observed are the consequence of the buildings being open to the elements and continued water infiltration. A portion of the rear roof of one of the buildings has collapsed. On a subsequent site visit on November 01, 2005 we observed the following:

- The rear portion of the previously intact 2nd floor framing in 614 Atlantic Avenue had collapsed
- Continued foundation and girder settlement in 618 Atlantic Street (Refer to Photo No. 7)
- Continued 2nd floor framing damage in 616 Atlantic Avenue (Refer to Photo No. 11)
- Continued timber flooring and floor joist water and rot damage

The timber flooring in the buildings are all severely deteriorated and appear to be on the verge of collapse. These observations indicate that major structural deterioration is occurring and that the structures are unsafe.

The condition of the southern portion of the East masonry wall of 620 Atlantic Avenue poses a possibility of falling bricks. Since this is a masonry-bearing wall, these conditions if left unchecked will eventually bring about local failure of the masonry-bearing wall and its timber floor system. This is further evidence that a major structural support system of the building is substantially compromised and that the structures are unsafe.

The distresses observed throughout portions of these buildings are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The buildings being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the buildings have left the buildings permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to further local collapses of the timber floor and roof joist systems and the ultimate collapse of the entire building(s). Numerous timber girders supporting the various building's timber first floors are severely water damaged and

rotted. This is evidence that the major structural support system of the buildings are substantially compromised and that the structures are unsafe.

If there was ever a fire or emergency in any one of these structures it would be extremely dangerous for fire or emergency personnel to enter these structures. We have also been recently informed by the owner that the structures are also asbestos contaminated.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the buildings located at 608-620 Atlantic Avenue refer to Photos #01 through #12 below:



**Photo No. 01 – Concrete Vault Beam Damage Below Sidewalk
of 618 Atlantic Avenue**



Photo No. 02 – 1st Floor Timber Flooring Water Damage of 620 Atlantic Avenue



Photo No. 03 – Masonry East Bearing Wall Damage at 3rd & 4th Floors of 620 Atlantic Avenue



Photo No. 04 – Rear Roof Collapse of 618 Atlantic Avenue



Photo No. 05 – 1st Floor Framing Water Damage of 618 Atlantic Avenue



**Photo No. 06 – Timber Column and Girder Support Settlement of
618 Atlantic Avenue**



**Photo No. 07 – Further Timber Column and Girder Support Settlement of
618 Atlantic Avenue (Condition on November 01, 2005)**



Photo No. 08 – 1st Floor Framing Damage of 616 Atlantic Avenue



Photo No. 09 – Stair Stringer Support Damage of 616 Atlantic Avenue



Photo No. 10 – 2nd Floor Framing Damage of 616 Atlantic Avenue



**Photo No. 11 – Further 2nd Floor Framing Damage of 616 Atlantic Avenue
(Condition on November 01, 2005)**



Photo No. 12 – 2nd Floor Framing Damage of 614 Atlantic Avenue

461 Dean Street

LZA Technology recommends that the structure at 461 Dean Street be demolished because it poses an immediate threat to the preservation of life, health, and property based on the observations described below.

The majority of the distresses observed are the consequence of all the floors sagging severely towards the center most point of the building, the building being open to the elements, and water infiltration. The timber flooring in the building is severely deteriorated and appears to be on the verge of collapse. To prevent further deflection of the floor framing, an additional timber girder with timber shoring was added in the basement under the midspan of the framing. On a subsequent site visit on November 01, 2005 we observed the following:

- In one location the timber shoring added in basement to prevent further floor deflections and to stabilize the structure continues to fail (Refer to Photo No. 13)
- Continued sagging of the timber flooring on all floors
- Continued timber flooring and floor joist water and rot damage on all floors

These observations indicate that major structural deterioration is occurring and that the structure is unsafe.

The distresses observed in the northern most portion of the building are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The building being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the building, along with the numerous cracked and broken glass window panes, have left the building permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to local collapses of the timber floor and roof joist systems and the ultimate collapse of the entire building. The end of a few timber girders supporting the first floor's timber floor framing are water damaged and rotted. The window and door frames are all severely racked. These are evidence that the major structural support system of the building is substantially compromised and that the structure is unsafe.

If there was ever a fire or emergency in this structure it would be extremely dangerous for fire or emergency personnel to enter this structure. We have been recently informed by the owner that the structures are also asbestos contaminated. The structure is also located adjacent to a fully operational gas station.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the building located at 461 Dean Street refer to Photos #13 through #20 below:



**Photo No. 13 – Timber Post Failure At
Basement of 461 Dean Street**



**Photo No. 14 – Further Timber Post Failure At Basement
of 461 Dean Street (Condition on November 01, 2005)**



Photo No. 15 – Additional Timber Girder & Timber Shoring At Basement of 461 Dean Street



Photo No. 16 – Timber Girder and Floor Joist Water Damage At Basement of 461 Dean Street



**Photo No. 17 – Timber Floor Joist Water Damage At
Basement of 461 Dean Street**



**Photo No. 18 – Sagging Floor and Racked Door & Window
Frames At 3rd Floor of 461 Dean Street**



Photo No. 19 – 2nd Floor Framing Water Damage at 1st Floor Ceiling of 461 Dean Street



Photo No. 20 – Roof Framing Water Damage At 4th Floor of 461 Dean Street

463 Dean Street – Four Story Building

LZA Technology recommends that the four-story structure at 461 Dean Street be demolished because it poses an immediate threat to the preservation of life, health, and property based on the observations described below.

The majority of the building's distresses observed are the consequence of the building being open to the elements and water infiltration. The timber flooring is sagging severely towards the center of the building and the window and door frames are all severely racked. To prevent further deflection of the floor framing, an additional timber girder with timber shoring was added in the basement under the midspan of the framing. The timber flooring and roof joists have also deteriorated and appear to be on the verge of collapse. On a subsequent site visit on November 01, 2005 we observed the following:

- Continued sagging of the timber flooring on all floors
- Continued timber flooring and floor joist water and rot damage on all floors (Refer to Photo No. 25)

These observations indicate that major structural deterioration is occurring and that the structure is unsafe.

The distresses observed in the northern most portion of the building are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The buildings being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the building, along with the numerous cracked and broken glass window panes, have left the building permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to local collapses of the timber floor and roof joist systems. The end of a few timber girders supporting the first floor's timber floor framing are water damaged and rotted. This is evidence that the major structural support system of the building is substantially compromised and that the structure is unsafe.

If there was ever a fire or emergency in this structure it would be extremely dangerous for fire or emergency personnel to enter this structure. We have been recently informed by the owner that the structure is also asbestos contaminated. The structure is also located adjacent to an inhabited building.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the four-story building located at 463 Dean Street refer to Photos #21 through #26 below:



Photo No. 21 – Racked Window Frame At 3rd Floor of 463 Dean Street



**Photo No. 22 – Timber Girder and Floor Joist Water Damage
At Basement of 463 Dean Street**



**Photo No. 23 – 2nd Floor Framing Water Damage At
1st Floor of 463 Dean Street**



Photo No. 24 – Roof Framing Water Damage At 4th Floor of 463 Dean Street



Photo No. 25 – Further Roof Framing Water Damage At 4th Floor of 463 Dean Street (Condition on November 01, 2005)



Photo No. 26 – Roof Membrane Deterioration At Roof of 463 Dean Street

463 Dean Street – Three Story Building

LZA Technology recommends that the three-story structure at 461 Dean Street be demolished because it poses an immediate threat to the preservation of life, health, and property based on the observations described below. The building's structure is extremely dangerous and could collapse at any time.

The majority of the building's distresses observed are the consequence of the building being open to the elements and water infiltration. The timber flooring and southern brick masonry wall are severely deteriorated and appear to be on the verge of collapse. In fact, a portion of the three-story building's south masonry wall has collapsed. On a subsequent site visit on November 01, 2005 we observed the following:

- Further collapse of a major portion of the southern brick masonry wall has occurred (Refer to Photo No. 28)
- Further collapse of a major portion of the timber flooring on the 1st, 2nd, and 3rd floors has occurred (Refer to Photo No. 28)
- Continued timber flooring and floor joist water and rot damage on all floors

These observations indicate that major structural deterioration continues to occur and that the structure could collapse at any time.

The distresses observed in this building are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The buildings being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the building, along with the numerous cracked and broken glass window panes, have left the building permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to collapse of the entire building. This is evidence that the major structural support system of the building is compromised and that the structure could collapse at any time.

If there was ever a fire or emergency in this structure it would be extremely dangerous for fire or emergency personnel to enter the structure. There is no access to this building from the four-story building on the front portion of the lot because the access hallway and rear door are blocked with piles of debris. We have been recently informed by the owner that the structure is also asbestos contaminated. The structure is also located adjacent to an inhabited building.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the three-story building located at 463 Dean Street refer to Photos #27 and #28 below:

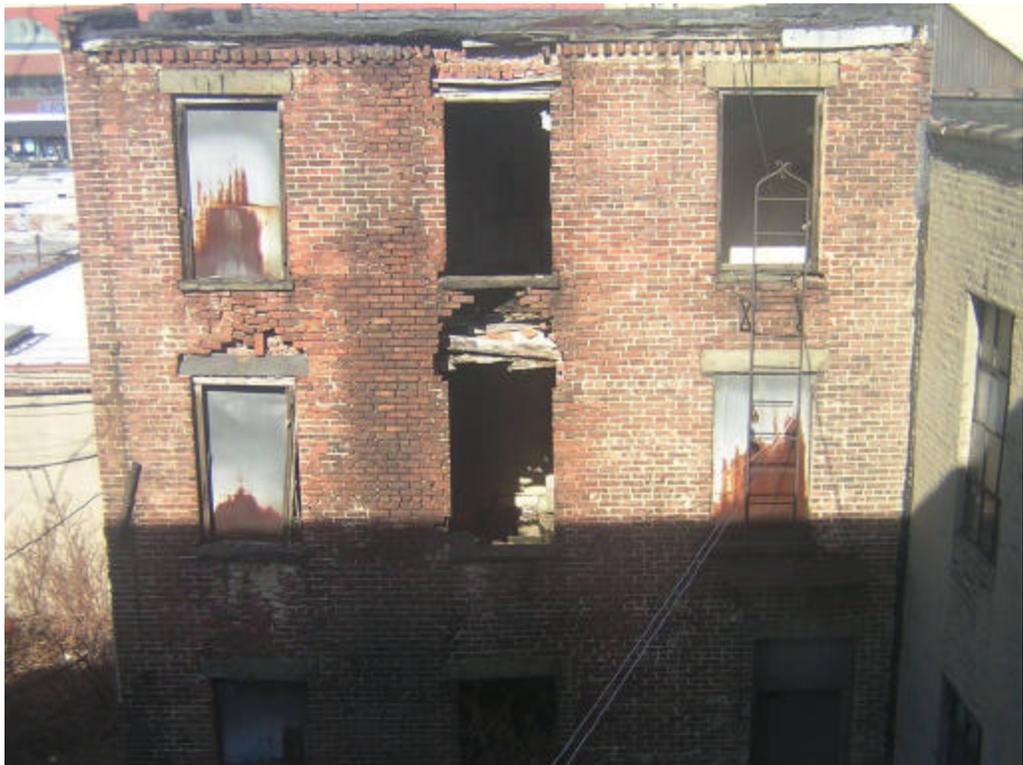


Photo No. 27 – Collapsed & Damaged Portions of the Southern Non-Bearing Masonry Wall of 463 Dean Street



Photo No. 28 – Further Collapsed Portions of the Southern Non-Bearing Masonry Wall and Floor Framing of 463 Dean Street (Condition on November 01, 2005)

585-601 Dean Street

LZA Technology recommends that the structure at 585-601 Dean Street be demolished because it poses an immediate threat to the preservation of life, health, and property based on the observations described below.

The majority of the building's distresses observed are the consequence of the building being open to the elements and water infiltration. The timber framing at several locations is severely deteriorated and has partially collapsed and is only being held up by temporary shoring. For example, the end of a timber girder supporting the roof framing above the 2nd floor is water damaged, rotted, and has partially collapsed (Refer to Photo No. 32).

On a subsequent site visit on November 01, 2005 we observed the following:

- Continued timber flooring and floor joist water and rot damage on all floors
- Continued timber roofing and roof joist water and rot damage at numerous locations

These indicate that major structural deterioration is occurring and that the structure is unsafe.

The distresses observed throughout portions of building are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The building being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the building, along with the numerous cracked and broken glass window panes, have left the building permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to further local collapses of the timber floor and roof joist systems and the ultimate collapse of the entire building. Numerous timber girders supporting timber framing are water damaged, rotted, and at a few locations partially collapsed. This is evidence that the major structural support system of the building is substantially compromised and that the structure is unsafe.

If there was ever a fire or emergency in this structure it would be extremely dangerous for fire or emergency personnel to enter the structure. We have been recently informed by the owner that the structure is also asbestos contaminated. The structure is also located adjacent to an inhabited homeless shelter that includes children.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the building located at 585-601 Dean Street refer to Photos #29 through #41 below:



**Photo No. 29 – 3rd Floor Water Damaged Roof Framing
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 30 – 3rd Floor Timber Roof Girder Water Damage
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 31 – 2nd Floor Water Damaged Roof Framing
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 32 – Failed 2nd Floor Roof Girder w/ Temporary Shoring
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 33 – Water Damaged & Corroded 1st Floor Roof Framing
(Western Portion of Building) of 585-601 Dean Street**



**Photo No. 34 – Water Damaged Flooring at 3rd Floor
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 35 – Water Damaged & Corroded 2nd Floor Framing
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 36 – Failed 2nd Floor Girders & Beams w/ Temporary Shoring
(Western Portion of Building) of 585-601 Dean Street**



**Photo No. 37 – Water Damaged 2nd Floor Framing
(Western Portion of Building) of 585-601 Dean Street**



**Photo No. 38 – Vertical Crack Through 1st Floor Timber Column
(Western Portion of Building) of 585-601 Dean Street**



**Photo No. 39 – Cracked Masonry Wall and Loose Bricks
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 40 – Roof Membrane Deterioration at 2nd Floor Roof
(Eastern Portion of Building) of 585-601 Dean Street**



**Photo No. 41 – Water Infiltration onto 2nd Floor Slab
(Eastern Portion of Building) of 585-601 Dean Street**

620 Pacific Street

LZA Technology recommends that the structure at 620 Pacific Street be demolished because it poses an immediate threat to the preservation of life, health, and property based on the observations described below. The building's structure is extremely dangerous and could collapse at any time.

The majority of the building's distresses observed are the consequence of the building being open to the elements and water infiltration. Significant portions of the roof and the first floor framing have collapsed. The rest of timber flooring in the building is severely deteriorated and appears to be on the verge of collapse. On a subsequent site visit on November 01, 2005 we observed the following:

- Further water & rot damage and collapse of the 1st floor framing and slab has occurred (Refer to Photo No. 46)
- Additional holes and local collapse of the roof framing has occurred (Refer to Photo No. 48)

These indicate that major structural deterioration is occurring and that the structure could collapse at any time.

The distresses observed throughout the building are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof system to deteriorate
- b. The building being constructed in the early 1900's
- c. The nature of the construction

The numerous active leaks throughout the building, along with the numerous cracked and broken glass window panes, have left the building permanently exposed to the elements. Continued deterioration will eventually lead to additional local collapses of the timber floor and roof joist systems and the ultimate collapse of the entire building. This is evidence that the major structural support system of the building is compromised and that the structure could collapse at any time.

If there was ever a fire or emergency in this structure it would be extremely dangerous for fire or emergency personnel to enter the structure. We have been recently informed by the owner that the structure is also asbestos contaminated. The structure is also located adjacent to an inhabited building.

For a more detailed description of the observed distresses see Section IV titled Field Observations in this report. For typical observed distress in the building located at 620 Pacific Street refer to Photos #42 through #48 below:



Photo No. 42 – Collapsed Slab At 1st Floor of 620 Pacific Street



Photo No. 43 – Collapsed Slab At 1st Floor of 620 Pacific Street



Photo No. 44 – Collapsed Slab At 1st Floor of 620 Pacific Street



Photo No. 45 – Damaged Timber 1st Floor Framing of 620 Pacific Street



Photo No. 46 – Further Damaged Timber 1st Floor Framing of 620 Pacific Street (Condition on November 01, 2005)



Photo No. 47 – Holes Through Existing Roof of 620 Pacific Street



No. 48 – Additional Holes Through Existing Roof of 620 Pacific Street (Condition on November 01, 2005)

II. INTRODUCTION

Forest City Ratner Companies (FCRC) had previously requested that LZA Technology (LZA) visit the site to perform existing structural condition surveys of the following structures:

- (1) 608-620 Atlantic Avenue - the seven buildings are situated on the south side of Atlantic Avenue west of 5th Avenue.
- (2) 461 Dean Street - the building is situated on the north side of Dean Street east of Flatbush Avenue. The New York City Department of Buildings indicates the premise is located on Block 1127 and Lot 56.
- (3) 463 Dean Street - the buildings are situated on the north side of Dean Street east of Flatbush Avenue. The New York City Department of Buildings indicates the premise is located on Block 1127 and Lot 55.
- (4) 585-601 Dean Street - the building is situated on the north side of Dean Street east of Carlton Avenue. The New York City Department of Buildings indicates the premise, the parking lot and building, are located on Block 1127 and on Lots 1, 3, and 81
- (5) 620 Pacific Street - the building is situated on the south side of Pacific Street, east of Flatbush Avenue. The New York City Department of Buildings indicates the premise is located on Block 1127 and Lot 19.

These field investigations were a response to an earlier request made by FCRC for existing structural condition surveys of these buildings. LZA previously made visual observations from the building's exterior and interior from the roof of the buildings, from the streets/sidewalks at grade around the buildings, and from the inside of the buildings. Binoculars were also used to supplement the observations. LZA also made field observations of the brick masonry exterior bearing and non-bearing walls, brick masonry parapets, roofs, skylights, sidewalks, structural timber floor & roof framing, cinder concrete slabs, concrete encased structural steel girder and beam floor and roof framing, structural steel girder & joist roof framing, foundation walls and masonry openings in the exterior walls.

Since the evaluation was visual in nature, neither probes nor laboratory testing were performed. There were no structural or architectural drawings available at the time of our site visits for our review. Therefore, the investigations were performed without the aid of design information such as dimensions, member sizes, and/or framing. Photographs were taken to document and record the general condition of the buildings as well as the distressed areas.

III. DESCRIPTION OF THE BUILDINGS

Each of the buildings, except those buildings located at 465 and 585-601 Dean Street, have a brick masonry bearing wall structure supporting timber floor joists that span between 20'-0" and 30'-0". The East, West, and interior walls of 585-601 Dean Street are a brick masonry bearing wall structure supporting a variety of floor systems, from timber columns supporting timber girders and beams to concrete encased steel columns supporting concrete encased steel girders and beams. Exterior brick masonry walls exist on both the North and South sides of all the buildings. The depth of each of the buildings varies between 40'-0" and 100'-0", with some of the buildings having an attached rear extension.

A few of the buildings have a basement along with concrete vaults extending under the sidewalk. The foundation walls in those buildings that have basements were constructed of stone rubble. The basement floors in the buildings either are a concrete slab on grade construction or were earth floors. Where columns in the basement were present, offering intermediate support of the first floor framing, various means of support were encountered such as steel lolly columns, timber columns and screw jack posts.

IV. FIELD OBSERVATIONS

Our field observations were confined to the areas as viewed from the accessible spaces within the buildings, from the roofs, and from the street levels around the buildings. Photographs were used to document the various conditions observed (see Section I title Executive Evaluation Summary).

Our observations for each of the buildings are outlined as follows:

1. 608-620 ATLANTIC AVENUE

Some vertical cracks in the joints of the North CMU wall were observed along Atlantic Avenue. The other three facades (East, West, and South) of the complex were constructed using common red brick masonry. Some cracking and loose bricks were observed on the exterior masonry walls.

In the basement, the undersides of the concrete sidewalk vaults along Atlantic Avenue are visible. There is evidence of significant distress at the ends of the cast-in-place concrete beams supporting the concrete vault slab. The typical evidence of distress observed is cracking at the exterior support point and diagonally cracking and spalling along the span of the concrete beam (Refer to Photo No. 01).

Building 620

The timber floor covering observed near the vicinity of the roof collapse in Building 618 appears to be significantly damaged (Refer to Photo No. 02). The first floor timber joists in this area are also damaged from the constant exposure to the elements. The remaining first and second floor timber joists observed appeared to be in poor condition with sporadic signs of water and/or moisture damage. The third and fourth floor timber floor joists bear directly on the southern portion of the East masonry bearing wall that has numerous loose masonry units. This is evidence that a major structural support system of the building is substantially compromised. The current poor and unsafe condition of the East bearing wall of Building 620 is the reason the owner has erected the sidewalk bridge along 5th Avenue (Refer to Photo No. 03).

Building 618

The roof of the rear one-story portion of this building has collapsed into the first floor space (Refer to Photo No. 04). The failure appeared to have occurred because the roof leaked water into its own supporting timber joists. This led to rotting of the timber joists and thus it collapsed under its own self-weight. The floor framing in the vicinity around this roof collapse has significant water damage due to constant exposure to the elements (Refer to Photo No. 05). This is evidence that a major structural support system of the building is substantially compromised. Water damaged and rotted stair stringers led to a lack of any stair stringer support (Refer to Photo No. 09). This extremely unsafe condition of the first floor stairway prevented the upper floors in this building from being observed.

At the northern end of the basement, an approximate ½” to 1” gap locally was observed between the timber column and girder supporting the first floor’s timber floor framing (Refer to Photo No. 06). This foundation settlement is further evidence that the major structural support system of the building is substantially compromised.

Building 616

The timber flooring observed from the basement and the first floor is in extremely poor condition. The first and second floor timber joists are water logged and rotted (Refer to Photos No. 08 through 10). Buckets are scattered throughout the first floor to catch the continuously dripping water from above. The existing first and second floor plaster ceilings and wooden lath supports have rotted and fallen off in numerous locations. This is evidence that the major structural support system of the building is substantially compromised.

Building 614

The first floor timber flooring observed is in extremely poor condition. The timber floor system deflected noticeably when walked upon and we felt that the floor system was extremely unstable. The first and second floor timber joists appeared to be water logged and rotted (Refer to Photo No. 12). Buckets are scattered throughout the first floor to catch the continuously dripping water from above. The existing first and second floor plaster ceilings and wooden lath supports have rotted and fallen off in numerous locations. This is evidence that the major structural support system of the building is substantially compromised.

During our subsequent site visits in November 2004 & 2005 we observed that the rear portion of the second floor framing had now collapsed. This area, during our initial inspection in May 2004, was still intact and had not collapsed. This is further evidence that the major structural support system of the building is substantially compromised.

Buildings 612, 610, and 608

The extremely unstable and unsafe nature of the first floor timber floor system in Building 614 prevented access into Buildings 612, 610, and 608 to make observations of these structures.

2. 461 Dean Street

The timber columns and posts supporting the first floor timber girders appeared to be in poor condition with signs of water damage and rot. At one location the timber post has failed under its compression loading (Refer to Photo No. 13). An additional timber girder with timber shoring was noticed to be added in the basement under the midspan of the west side framing to prevent the framing in that area from deflecting any further (as evidence from the failed timber post above) or collapsing (Refer to Photo No. 15). At one location the end of the timber girder supporting the first floor's timber floor framing appeared to be water damaged and rotted (Refer to Photo No. 16). At another location the end of the timber joist supporting the first floor's timber flooring appeared to be rotted and no longer bearing on the foundation wall (Refer to Photo No. 17). This is evidence that the major structural support system of the building is substantially compromised.

All the floors in the building are severely sagging to the center most point of the building. All the door and window frames are severely out of plumb and sloped in the direction of the sagged floors (Refer to Photo No. 18). The window and door frames are all typically racked.

The first floor timber joists observed in the northern half of the building appeared to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photos No. 16 & 17). The second through fourth floor timber joists observed in the northern most portion of the building (mainly in the kitchen and bathroom areas) appeared rotted in numerous locations due to the water leaking in from the roof and down through the numerous pipe penetrations (heating and bathroom & kitchen fixtures) in the floor (Refer to Photo No. 19). The timber floor joists observed on the first through fourth floors in the southern half of the building appeared to be in fair condition.

The roof's timber joists and floor boards are water logged and plastic sheets and buckets are scattered throughout the kitchen to catch the continuously dripping water from above. The existing fourth floor plaster and gypsum board ceilings and wooden lath supports have rotted and fallen off in numerous locations (Refer to Photo No. 20).

3. 463 Dean Street

Of great concern was the condition of the three-story building located on the northern portion of the lot. This three-story structure is extremely dangerous and could collapse at any time. A portion of the south masonry wall has collapsed, and other portions appear (at the window soffits and sills) to be on the verge of collapse (Refer to Photo No. 27). The interior of the structure as observed is in a serious state of disrepair from water damage and exposure to the elements (Refer to Photo No. 27). The timber floor framing is severely deteriorated and appears to be on the verge of collapse due to the water damaged floor structure. The roof framing is sagging and is also on the verge of collapse due to the water damaged roof structure. The black asphalt type mastic roofing membrane appears to be in extremely poor condition with numerous signs of deterioration present. This damage indicates that major structural deterioration is occurring and that the structure is unsafe.

All the floors in the four-story building are severely sagging to the center most point of the building. All the door and window frames are severely out of plumb and sloped in the direction of the sagged floors. Window and door frames are all typically racked (Refer to Photo No. 21).

The first floor timber joists observed in the northern half of the four-story building appeared to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 22). The second through fourth floor timber joists observed in the northern most portion of the four-story building (mainly in the kitchen and bathroom areas) appeared rotted in numerous locations due to the water leaking in from the roof and down through the numerous pipe penetrations (heating and bathroom & kitchen fixtures) in the floor (Refer to Photo No. 23).

The four-story roof's timber joists and floor boards are water logged with water continuously dripping down onto the kitchen floor and down through the numerous pipe penetrations (heating and bathroom & kitchen fixtures) in the floor. The existing fourth floor plaster and gypsum board ceilings and wooden lath supports have rotted and fallen off in numerous locations (Refer to Photo No. 24).

There is an exterior protruding masonry chimney above the roof on the East side of the four-story building. The condition of the masonry chimney is in poor condition with loose bricks and severe cracking evident. The black asphalt type mastic roofing membrane appears to be in poor condition with signs of deterioration present (Refer to Photo No. 26).

4. 465 Dean Street

The undersides of a few of the 1st floor steel floor beams appeared to be in good condition. The existing plaster ceilings throughout basement, 1st floor, and 2nd floor of the building appeared to have no indications of cracking, water damage, etc. The existing plaster ceilings throughout appeared to be in good condition.

The cinder concrete floor was visible from a few locations throughout the first and second floor areas and appeared to be in good condition. However, cinder concrete is a weak material, with about 20% of the strength of modern-day concrete, and this type of floor system is obsolete. The wood flooring overlay was visible throughout the first and second floor areas and appeared to be in good condition.

The foundation walls were constructed of stone rubble, and were observed to be in good condition. At a few locations the foundation wall has signs of efflorescence.

Some cracks in the joints of the brick masonry walls were observed along the rear and East side of the building and along Dean Street. This cracking does not appear to indicate signs of major structural deterioration. At two interior locations on the south brick masonry wall, above the steel window lintels, there were signs of water infiltration and deterioration. The entire roof membrane appears to have been recently replaced and this seems to have solved the water infiltration problem.

The condition of both the masonry parapet and capping appears to be in good condition and the black asphalt type mastic roofing membrane appears to be in good condition with no visible signs of deterioration present.

5. 585-601 Dean Street

In general the 3rd floor's timber roof girders, beams, and roof decking as observed on the eastern portion of the building appear to be in very poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 29). At several locations the end of the timber girder supporting the roof's framing appeared to be water damaged and rotted (Refer to Photo No. 30). This is evidence that a major structural support system of the building is substantially compromised. Also there were a number of timber girders and beams where horizontal cracks were present.

In general the 2nd floor's timber roof girders, beams, and decking as observed on the eastern portion of the building appear to be in poor condition with signs of water and/or moisture damage (Refer to Photo No. 31). Towards the center was a timber roof girder and decking that had failed and was previously shored using timber bracing and a post (Refer to Photo No. 32). This is evidence that a major structural support system of the building is substantially compromised. Also in this area were numerous signs of water and/or moisture damage to these timber roof girders, beams and roof decking. There were a number of timber girders and beams where horizontal cracks were present.

In general the 1st floor's concrete encased steel roof girders and beams as observed on the western rear portion of the building appeared to be in poor condition with numerous locations of water infiltration (Refer to Photo No. 33). There were a number of concrete encased steel roof girders and beams where the concrete encasement is damaged and/or missing (Refer to Photo No. 33). The actual steel girders and beams are corroded these locations of damaged and/or missing concrete encasement (Refer to Photo No. 33).

The 3rd floor's timber floor joists and decking as observed on the eastern portion of the building appear to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 34).

The 2nd floor concrete encased steel girders and beams observed on the eastern portion of the building indicate locations of water infiltration (Refer to Photo No. 35). There were a number of concrete encased steel roof girders and beams where the concrete encasement is damaged and/or missing. The actual steel girders and beams are corroded at these locations of damaged and/or missing concrete encasement.

The 2nd floor concrete cinder slabs observed on the eastern portion of the building appear to indicate locations of water infiltration (Refer to Photo No. 35). There were also a number of locations where the concrete cinder slabs were damaged with cracked and spalled concrete. However, cinder concrete is a weak material, with about 20% of the strength of modern-day concrete, and this type of floor system is obsolete. Otherwise, in general the 2nd floor concrete cinder slabs and concrete encased steel girders and beams as observed on the eastern portion of the building appeared to be in fair condition.

In general the timber girders and beams as observed on the western portion of the building appeared to be in poor condition. Towards the southwest corner, on the western portion of the building, were timber girders and beams that had failed and were previously shored using a steel post and beam (Refer to Photo No. 36). These are a major structural support system of the building. There were numerous signs of water and/or moisture damage to these timber girders, beams and decking in this area (Refer to Photo No. 37).

At the first floor, on the western portion of the building, there were a significant number timber columns where vertical cracks were present that went through the entire cross-section of the column (Refer to Photo No. 38). Also at the first floor, on the eastern portion of the building, there were a few concrete encased steel columns where the concrete encasement was damaged and/or missing.

In general the concrete slab-on-grade as observed appeared to be in fair condition. The 1st floor is a concrete slab-on-grade has numerous signs of cracking and delamination throughout both the eastern and western portions of the building.

On the eastern portion of the building at a rear entrance into one of the rooms is a condition where the masonry infill between two structural steel angle lintels is loose and indications that some of the bricks have fallen out.

The 3rd floor roof masonry parapet and capping on the eastern portion of the building appears to be in poor condition. There are two missing terra cotta arched shaped camel-back copings and some loose brick at the top on the West side.

There is a large exterior protruding masonry structure, approximately 10'-0" by 10'-0", at the most northeastern portion of the building. The masonry structure is in poor condition with loose bricks and severe cracking evident (Refer to Photo No. 39). This is evidence that the major structural support system of the building is substantially compromised.

The black asphalt type mastic roofing membrane appears to be in poor condition with numerous signs of deterioration present (Refer to Photo No. 40). The flashing at the chimneys, vents, pipes, roof access hatches, etc. appears to be damaged at a numerous locations and therefore is not sealing the roofing membrane properly against the vertical surfaces. This damaged flashing is allowing water intrusion into and throughout the structure. For example, this water intrusion is evident on eastern portion of the 2nd floor (Refer to Photo No. 41) and in the rear of the western portion of the 1st floor of the building (Refer to Photo No. 33).

6. 620 Pacific Street

The overall condition of the building is that it is structurally unsafe. This structure is extremely dangerous and could collapse at any time. Significant portions of the 1st floor slab have collapsed, and the remaining portion of the slab is severely cracked and may be on the verge of collapse (Refer to Photos No. 42 - 44). These collapsed and damaged portions of the floor indicate that major structural deterioration of the building has occurred and that the structure is unsafe.

The interior of the structure as observed is in a serious state of disrepair from water damage and exposure to the elements (Refer to Photo No. 45). The timber floor framing is deteriorated and may collapse due to the water damaged floor structure.

The roof membrane is deteriorated and in many locations no longer exists. There are numerous holes through the roof that are open to the elements (Refer to Photo No. 47). The framing shows signs of deterioration and may collapse. Also, many of the windows are open and/or broken thus open to the elements.

STRUCTURAL DUE DILIGENCE SURVEY

818 Pacific Street
Brooklyn, NY 11201



Prepared For:

Forest City Ratner Companies
One Metrotech Center North
11th Floor
Brooklyn, NY 11201

Prepared By:

THORNTON TOMASETTI
51 Madison Avenue
New York, NY 10010-1603
917-661-7800



Project No. 25240.06

May 08, 2006

TABLE OF CONTENTS

	Page
I. Introduction	1
II. Description Of Building	2
III. Field Observations	4
IV. Evaluation	8
Appendix A: Photographs	9

I. INTRODUCTION

Forest City Ratner Companies (FCRC) requested that The Thornton Tomasetti Group, Inc. (TTG) visit the site of the buildings located at 818 Pacific Street in Brooklyn. The buildings are situated on the corner of Pacific Street and Vanderbilt Avenue. The field investigation was a response to a request made by FCRC for a structural due diligence survey of these buildings.

On Tuesday 25 April 2006, TTG made visual observations from the building's exterior and interior from the low roof of the building, from the roof of the neighboring building, from the streets/sidewalks at grade around the building, and from the inside of the building. TTG made field observations of the brick masonry exterior bearing and non-bearing walls, brick masonry parapets, roofs, sidewalk, structural timber floor framing, structural timber wall framing, foundation walls and masonry openings in the exterior walls.

Since the evaluation was visual in nature, neither probes nor laboratory testing were performed. There were no structural or architectural drawings available at the time of the site visit for our review. Therefore, the investigation was performed without the aid of design information such as dimensions, member sizes, and/or framing. Photographs were taken to document and record the general condition of the buildings as well as the distressed areas.

II. DESCRIPTION OF BUILDING

The property in question contains three buildings on the lot. On the southern portion of the lot is an existing vacant three-story residential/commercial building (Refer to Photo No. 1), on the southeastern portion of the lot is a vacant one-story former Auto Repair Shop (Refer to Photo No. 2), on the northwestern portion of the lot is a vacant one-story former diner (Refer to Photo No. 3). The property is located in Brooklyn situated on a rectangular parcel of land bounded by Pacific Street on the North, Dean Street on the South, Vanderbilt Avenue on the East, and Carlton Avenue on the West. The buildings are located in the north-eastern section of the parcel of land with the East side of the three-story building situated along Vanderbilt Avenue and with a neighboring building attached on the South (Refer to Photo No. 1). The former Auto Repair Shop is located with the East side of the building directly adjacent the three-story building and with a neighboring building attached on the West (Refer to Photo No. 2). The former diner is located with the North side of the building situated along Pacific Street and with a neighboring building on the West (Refer to Photo No. 3). The New York City Department of Buildings indicates the premise is located on Block 1129 and Lot 46 and that the three-story building and the one-story Auto Repair Shop were built in the early 1900's. Adjacent properties include inhabited residential and commercial buildings.

The North and South walls of the three-story building are a brick masonry bearing wall structure supporting timber floor joists that span approximately 32'-0". The exterior walls on the East and West sides of the building are also brick masonry. The depth of the three-story building is approximately 24'-0". The three-story building is situated on the southernmost portion of the lot.

The East and West walls of the former one-story Auto Repair Shop are a brick & CMU combination masonry bearing wall structure supporting timber floor joists that span approximately 24'-0". The exterior walls on the North and South sides of the building are also brick & CMU masonry. The depth of the former Auto Repair Shop is approximately 32'-0". Situated on the roof of the Auto Repair Shop is an approximately 10'-0" by 10'-0" wood framed structure attached to the west wall of the three-story building (Refer to Photo No. 4). The former Auto Repair Shop is situated on the southeastern most portion of the lot.

The walls of the former one-story diner are a timber wall structure supporting timber roof joists that span approximately 18'-0". The length of the former diner is approximately 60'-0". The former diner is situated on the northwestern most portion of the lot. The land between the two buildings was used as a parking lot (Refer to Photos No. 2 & 3).

The three-story building has a basement that is accessible from both its first floor internal stairway and a set of sidewalk steel bulkhead doors. The foundation walls in the basement were constructed of stone rubble and the basement floor is concrete slab on grade. Timber columns and posts support the first floor timber girders.

The former one-story Auto Repair Shop has large below grade pit that was used for repairing the underside of vehicles and is accessible from only a metal rung latter. The foundation walls in the pit were constructed of concrete and the pit floor is concrete slab on grade. The pit was flooded and could not be observed.

The former one-story diner has a small partial basement, approximately 18'-0" by 18'-0", which is accessible only from an internal stairway located on the southernmost end of the building. The foundation walls in the basement were constructed of concrete and the basement floor is concrete slab on grade. The partial basement was flooded and could not be observed.

All the floors and rooms of the three-story building were accessible for observations, except the high roof. There was no access to the high roof from either the interior of the structure or from the neighboring buildings. The rear of the three-story building was observed from former Auto Repair Shop's roof. The floor of the former diner was accessible for observations. The roof of the former diner was observed from the roof of the former Auto Repair Shop and the roof of the neighboring building located at 814 Pacific Street.

III. FIELD OBSERVATIONS

TTG's field observations were performed on Tuesday 25 April 2006. Our field observations were confined to the areas as viewed from the accessible spaces within the buildings, from the roof, from the terrace, from the roof of a neighboring building, and from the street level and sidewalks around the buildings. Photographs were used to document the various conditions observed (see Appendix A).

Our fieldwork focused on the following areas:

1. The former one-story diner on the northwestern portion of the lot.
2. The former one-story Auto Repair Shop on the southwestern portion of the lot directly adjacent the three-story building.
3. The exposed masonry pilasters and timber posts as seen from the basement of the three-story building.
4. The exposed timber floor and roof joists as seen from various floor locations of the three-story building.
5. The exposed stone rubble foundation walls and concrete slab-on-grade as seen from the basement of the three-story building.
6. The exposed brick masonry walls from both the interior and exterior of the three-story building.
7. The rooftop brick masonry parapet of the three-story building.
8. The roofing membrane of the former one-story Auto Repair Shop.

Our observations are outlined as follows:

1. Former Diner On Northwestern Portion of Lot

Of concern was the condition of the former diner located on the northwestern portion of the lot. The interior of the former diner as observed is in a state of disrepair from water damage and exposure to the elements (Refer to Photo No. 5). The timber floor framing also appears to be deteriorated. The ceiling in the former diner has partially collapsed, and other portions appear to be on the verge of collapse (Refer to Photo No. 6). These collapsed and damaged portions of the ceiling and flooring indicate that major structural deterioration of the structure is occurring and that the structure is unsafe.

The timber wall structure was not exposed for our observations, but a few of the windows were broken and are exposing the interior to the elements. The partial basement was flooded and therefore could not be accessed.

2. Former Auto Repair Shop On Southwestern Portion of Lot

The timber roof joists observed in the building appeared to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 7). Significant water and/or moisture damage is apparent especially at the northwestern portion of the roof and at the skylight framing (Refer to Photos No. 7 & 8 respectively). These damaged portions of the roof indicate that major structural deterioration of the roof is occurring.

The northern brick masonry wall appeared to be in poor condition with signs of cracking and bulging masonry. This cracking and bulging masonry is a sign of structural deterioration (Refer to Photos No. 9 & 10).

The typical roof parapet is built of brick masonry and topped with a precast concrete coping. The parapet is about one foot high and is along the entire North, South and West sides of the building. There is a partial roof parapet along the East side of building. The condition of the masonry parapet and precast concrete coping are generally in fair condition. Some of the masonry and precast concrete coping along the North and East sides of the building appeared to be loose.

Situated on the eastern portion of the roof is an approximately 10'-0" by 10'-0" wood framed structure that is attached to the west wall of the three-story building. Due to the deflections of the Auto Repair Shop's roof this structure is pulling away from the west wall of the three-story building (Refer to Photo No. 11). The timber roof joists observed in this rooftop structure appeared to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 12). The Auto Repair Shop's roof joists in the location of this rooftop structure do not appear to be reinforced for the added loads that this rooftop structure is imposing on the joists. Also, the rooftop structure is directly neighboring the roof skylight whose framing has numerous signs of water and/or moisture damage. These conditions indicate that major structural deterioration of the roof is occurring and that the structure is unsafe.

The pit area was flooded and therefore could not be observed.

3. Pilasters and Posts (Three-Story Building)

A combination of masonry pilasters and timber posts were observed supporting the first floor timber girders in the building. In general these masonry pilasters appeared to be in good condition.

Additional timber posts appeared to have been added in the basement at various points under the timber girders to prevent the floor framing in that area from deflecting any further (Refer to Photo No. 13). At one location the timber girder supporting the first floor's timber floor framing appeared to have signs of water and/or moisture damage (Refer to Photo No. 14). These indicate that the major structural support system of the building is substantially compromised.

4. Timber Floor and Roof Joists (Three-Story Building)

The undersides of the timber floor joists were visible from numerous locations, where accessible, throughout building. All the floors in the building are severely sagging to the center most point of the building (Refer to Photo No. 15). A few of the door frames and especially the interior stairs are severely out of plumb and sloped in the direction of the sagged floors (Refer to Photos No. 16 & 17).

The first floor timber joists observed in the southern half of the building appeared to be in poor condition with numerous signs of water and/or moisture damage (Refer to Photo No. 18). At one location in the southern half of the building one of the floor joists shown to have inadequate bearing was rigged with timber pieces to provide additional support (Refer to Photo No. 19). At one location in the northern half of the building the floor joists have rotated on their masonry supports (Refer to Photo No. 20).

The second floor timber joists observed in the western most portion of the building (mainly in the kitchen area) appeared rotted in numerous locations due to the water leaking in from the roof down to the second floor (Refer to Photos No. 21 & 22).

The roof's timber joists and floor boards in some locations appeared to be in poor condition with signs of water and/or moisture damage. The existing third floors plaster and pressboard ceilings show signs of water and/or moisture damage (Refer to Photo No. 23).

5. Stone Rubble Foundations Walls and Concrete Slab-On-Grade (Three-Story Building)

The foundation walls are exposed and only visible in the basement. The foundation walls were constructed of stone rubble, and were observed to be in fair condition. At a number of locations the foundation wall has small cracks and signs of efflorescence. The basement floor is concrete slab on grade and was observed to be in fair condition.

6. Brick Masonry Exterior Walls (Three-Story Building)

The exterior stucco finish on the northern face of the building is severely cracked. There are cracks in the mortar joints and bricks of the masonry bearing wall observed at the 2nd Floor terrace on the north face of the building (Refer to Photo No. 24). The masonry and mortar around these crack locations was very loose and in fact the masonry and mortar can be removed without much effort. This cracking and loose masonry are signs that major structural deterioration is occurring.

There is an exterior protruding masonry chimney above the roof on the northwest side of the building (Refer to Photo No. 4). The masonry chimney on the western face of the building is separating from the rest of the West masonry wall (Refer to Photo No. 25). This gap between the chimney and masonry wall is a sign of structural deterioration.

All the existing windows were accessible for observations and appeared to be in fair condition.

7. Rooftop Brick Masonry Parapet (Three-Story Building)

The roof parapet wall at the 2nd Floor terrace of the building is built of brick masonry and topped with a precast concrete coping. The waist high parapet is stepped, is intermittent with metal fencing and masonry pilasters, and is along a portion of the East side terrace and along the entire North terrace of the building. The condition of the masonry parapet and precast concrete coping are generally in fair condition. Some of the masonry and precast concrete coping along the 2nd Floor terrace appeared to be loose.

We were not able to observe the parapets at the high roof as access was not available.

8. Roofing Membrane (Former Auto Repair Shop & Three-Story Building)

The black asphalt type mastic roofing membrane at the Auto Repair Shop appears to be in poor condition with numerous signs of deterioration present. The flashing along the North parapet of the building appears to be damaged and in some locations one can see directly into the building below (Refer to Photos No. 26 & 27). Water intrusion into the structure is evident at numerous locations.

We were not able to observe the roofing membrane at the three-story building as access was not available. However, the water intrusion into the structure from the roof is evident at numerous locations throughout the structure. This water intrusion is evident on each of the three floors, especially from the ceiling of the third floor (Refer to Photo No. 28).

IV. EVALUATION

A majority of former one-story diner's distress observed is the consequence of water infiltration into the building causing the roof joists to partially collapse and causing widespread water and/or moisture damage. This indicates that major structural deterioration is occurring and that the structure is unsafe.

A majority of former one-story Auto Repair Shop's distress observed is the consequence of water infiltration into the building causing the roof joists to experience significant water and/or moisture damage. This indicates that structural deterioration is occurring and that the structure is unsafe.

A majority of the three-story building's distress observed is the consequence of all the floors sagging severely towards the center most point of the building. To prevent further deflection of the floor framing, additional timber posts were added in the basement under the main girders. This indicates that major structural deterioration is occurring and that the structure is unsafe.

The distresses observed in these buildings are a consequence of a number of circumstances:

- a. Water infiltration causing the timber floors and roof systems in each of the building's to deteriorate
- b. The three-story building and Auto Repair Shop being constructed in the early 1900's
- c. The nature of the each of the building's construction

The numerous active leaks throughout the three buildings, have left the each of the buildings permanently exposed to the elements. These active water leaks if left unchecked, will eventually lead to local collapses of the timber floor and roof joist systems as already seen in the former one-story diner. This is evidence that the major structural support system of the building is substantially compromised and that the structure is unsafe.

The damage to the three buildings described above can be addressed in one of two ways – repaired to a safe condition or demolished and then replaced in kind. The cost to repair such extensive damage as described above would exceed the cost to demolish the three structures and replace them with new construction (assuming the three buildings were replaced in kind). Since the rehabilitation would be quite costly, it could possibly trigger a mandatory upgrade to current code requirements such as sprinklers, egress, ADA requirements, etc. Therefore we recommend that the three buildings located at 818 Pacific Street be demolished.

Appendix A



Photo No. 1 – Three Story Building at 818 Pacific Street



Photo No. 2 – One Story Former Auto Repair Shop at 818 Pacific Street



Photo No. 3 – One Story Former Diner at 818 Pacific Street



Photo No. 4 – Wood Framed Structure Located On Former Auto Repair Shop Roof



Photo No. 5 – Water Damage & Disrepair at Former Diner



Photo No. 6 – Roof Framing Water Damage & Partial Collapse at Former Diner



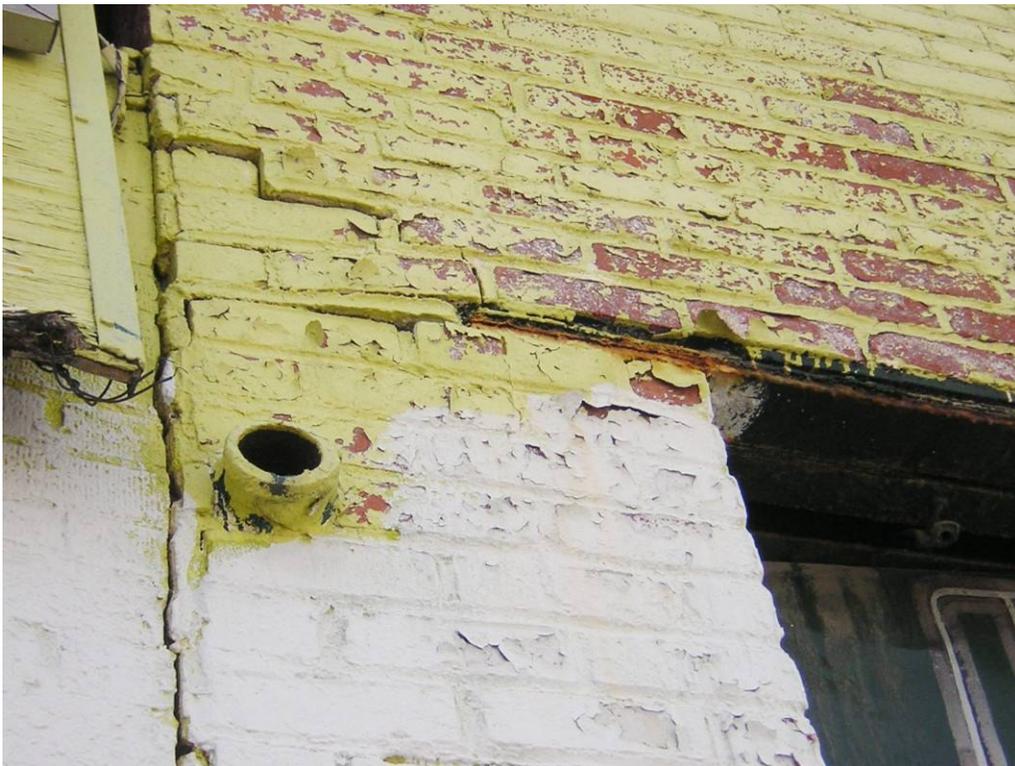
Photo No. 7 – Roof Framing Water Damage At Former Auto Repair Shop



Photo No. 8 – Skylight Framing Water Damage At Former Auto Repair Shop



**Photo No. 9 – North Non-Bearing Masonry Wall Bulging
At Former Auto Repair Shop**



**Photo No. 10 – North Non-Bearing Masonry Wall Damage
At Former Auto Repair Shop**



Photo No. 11 – Gap Between Wood Framed Structure On Auto Repair Shop Roof and Three-Story Building

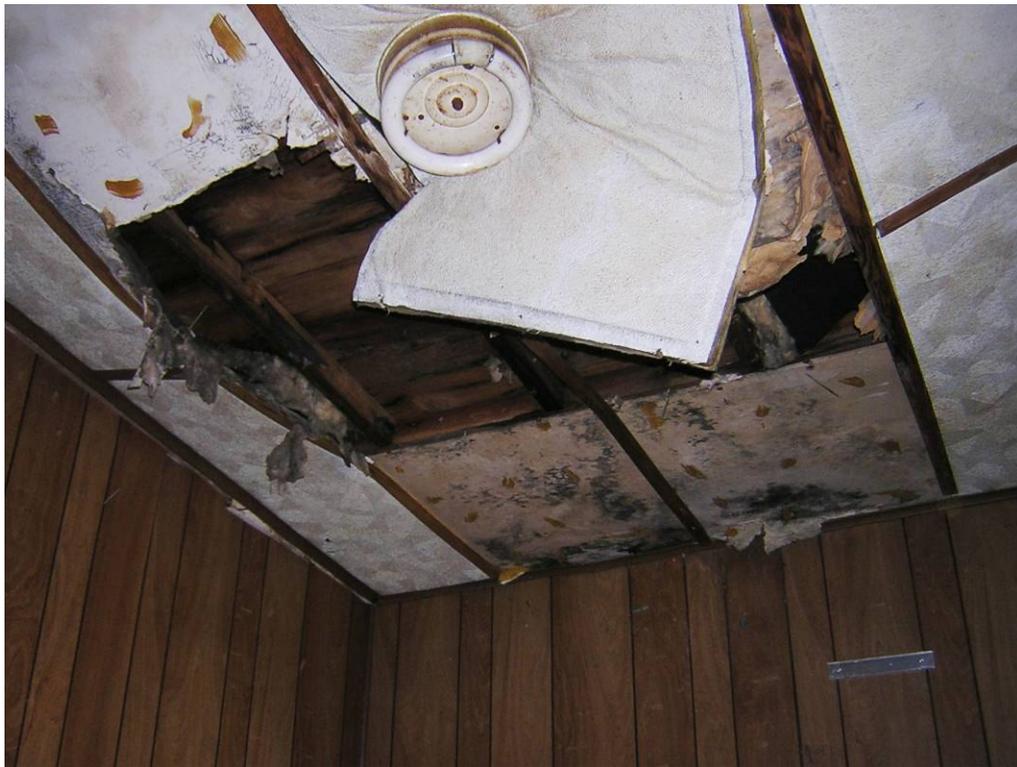


Photo No. 12 – Roof Framing Water Damage at Wood Framed Structure



Photo No. 13 – Additional Timber Posts At Basement of Three-Story Building



Photo No. 14 – Timber Girder Water Damage At Basement of Three-Story Building



Photo No. 15 – Sloped Floor At 2nd Floor of Three-Story Building



Photo No. 16 – Sloped & Damaged Stairs At 1st Floor of Three-Story Building



Photo No. 17 – Sloped Stairs At 2nd Floor of Three-Story Building



Photo No. 18 – Floor Joist Water Damage At Basement of Three-Story Building



Photo No. 19 – Inadequate Floor Joist Support At Basement of Three-Story Building



Photo No. 20 – Rotated Floor Joists At Basement of Three-Story Building



Photo No. 21 – Floor Joist Water Damage At 2nd Floor of Three-Story Building



Photo No. 22 – Floor Joist Water Damage At 2nd Floor of Three-Story Building



Photo No. 23 – Water Damage At 3rd Floor of Three-Story Building

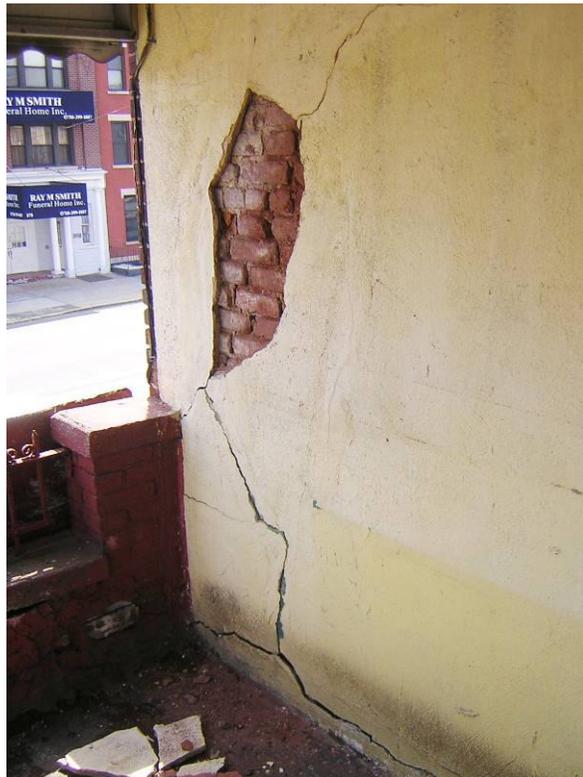


Photo No. 24 – Damaged Masonry Wall At 2nd Floor Terrace of Three-Story Building



**Photo No. 25 – Gap Between Chimney and Masonry Wall
at Three-Story Building**



Photo No. 26 – Damaged Roofing Membrane At Auto Repair Shop



Photo No. 27 – Damaged Roofing Membrane At Auto Repair Shop



Photo No. 28 – Water Damage At 3rd Floor of Three-Story Building

STRUCTURAL DUE DILIGENCE SURVEY

622 Pacific Street
Brooklyn, NY 11201



Prepared For:

Forest City Ratner Companies
One Metrotech Center North
11th Floor
Brooklyn, NY 11201

Prepared By:

LZA TECHNOLOGY
641 Avenue of the Americas
New York, NY 10011
917-661-7800

Project No. 25240.03

October 24, 2005

TABLE OF CONTENTS

	Page
I. Introduction	1
II. Description Of Building	2
III. Field Observations	3
IV. Evaluation	4
Appendix A: Photographs	5

I. INTRODUCTION

Forest City Ratner Companies (FCRC) requested that LZA Technology (LZA) perform a structural due diligence inspection and evaluation of the building located at 622 Pacific Street in Brooklyn. The building is situated on the south side of Pacific Street, east of Flatbush Avenue.

On Thursday, 20 October 2005, LZA made visual observations of the building's exterior and interior from the roof of the adjacent building, from the streets/sidewalks at grade around the building, and from the inside of the building. LZA made field observations of the brick masonry exterior bearing and non-bearing walls, brick masonry parapets, roofs, sidewalks, structural timber floor framing, foundation walls and masonry openings in the exterior walls.

Since the evaluation was visual in nature, neither probes nor laboratory testing were performed. There were no structural or architectural drawings available at the time of the site visit for our review. Therefore, the investigation was performed without the aid of design information such as dimensions, member sizes, and/or framing. Photographs were taken to document and record the general condition of the building as well as the distressed areas.

II. DESCRIPTION OF BUILDING

The property in question contains an existing vacant one-story commercial building (Refer to Photo No. 1). The property is located in Brooklyn situated on a trapezoidal parcel of land bounded by Pacific Street on the North, Dean Street on the South, 6th Avenue on the East, and Flatbush Avenue running diagonally from the Southeast to Northwest. The building is located in the North-Western section of the parcel of land with the North side of the building situated along Pacific Street with neighboring buildings, 620 Pacific Street attached on the West and 624 Pacific Street attached on the East. The New York City Department of Buildings indicates the premise is located on Block 1127 and Lot 20 and was built circa 1930. Adjacent properties include non-inhabited residential buildings.

The East and West walls of the building are a brick masonry bearing wall structure supporting timber floor joists that span approximately 25'-0". The exterior walls on the North and South sides of both buildings are also brick masonry. The depth of the one-story building is approximately 73'-9".

The building has a basement that is accessible from the first floor through the use of a ladder. The foundation walls in the basement were constructed of CMU block and the basement floor is concrete slab on grade.

The ground floor and basement of the one-story building was partially accessible for observations. Portions of the roof and 1st floor slab have collapsed restricting access.

III. FIELD OBSERVATIONS

LZA's field observations were performed on Thursday 20 October 2005. Our field observations were confined to the areas as viewed from the accessible spaces within the building, from the street level around the building and from the roof of the adjacent building at 620 Pacific Street. Photographs were used to document the various conditions observed (see Appendix A).

Our fieldwork focused on the following areas:

1. The exposed timber floor and roof joists as seen from various floor locations of the building.
2. The exposed CMU foundation walls and concrete slab-on-grade.
3. The exposed brick masonry walls from both the interior and exterior of the building.
4. The rooftop brick masonry parapet of the building.
5. The roofing membrane of the building.

Our observations are outlined as follows:

1. Building Condition:

The overall condition of the building is that it is structurally unsafe. Portions of the roof and 1st floor have collapsed (Refer to Photos No. 2 & 3). These collapsed and damaged portions of the roof and floor indicate that major structural deterioration of the building has occurred and that the structure is unsafe.

The interior of the structure as observed is in a serious state of disrepair from water damage and exposure to the elements (Refer to Photos No. 4 & 5). The timber floor framing is deteriorated and portions of it may continue to collapse due to the water damaged floor structure (Refer to Photo 6).

The roof membrane is deteriorated and in many locations no longer exists. There is a partial collapse at the southern end of the roof. There are numerous holes through the roof that are open to the elements (Refer to Photo 7). The framing shows signs of deterioration and portions of it may continue to collapse (Refer to Photo No. 8). Also, the windows are open and/or broken thus open to the elements.

IV. EVALUATION

A majority of the building's distress observed is the consequence of the building being open to the elements and water infiltration. A portion of the building's roof and first floor framing has collapsed. The timber roof and floor framing are severely deteriorated and appear to be on the verge of further collapse. This indicates that major structural deterioration has occurred and that the structure is unsafe.

The distress observed in the building is a consequence of a number of circumstances:

- a. Water infiltration causing the timber floor and roof system to deteriorate
- b. The building being constructed in 1930
- c. The nature of the construction

The numerous active leaks throughout the building have exposed the building's structure to the elements. These active water leaks if left unchecked, will eventually lead to additional local collapses of the timber floor and roof joist systems and the ultimate collapse of the entire building. Numerous timber girders supporting timber framing are water damaged, rotted, and at a few locations partially collapsed. This is evidence that the major structural support system of the building is substantially compromised and that the structure is unsafe.

The damage to the building described above can be addressed in one of two ways – repaired to a safe condition or demolished and then replaced in kind. The cost to repair such extensive damage as described above would exceed the cost to demolish the structure and replace it with new construction (assuming the building was replaced in kind). Since the rehabilitation would be quite costly, it could possibly trigger a mandatory upgrade to current code requirements such as sprinklers, egress, ADA requirements, etc. Therefore we recommend that the building at 622 Pacific Street be demolished.

Appendix A



Photo No. 1 – Existing Vacant One-Story Building At 622 Pacific St.

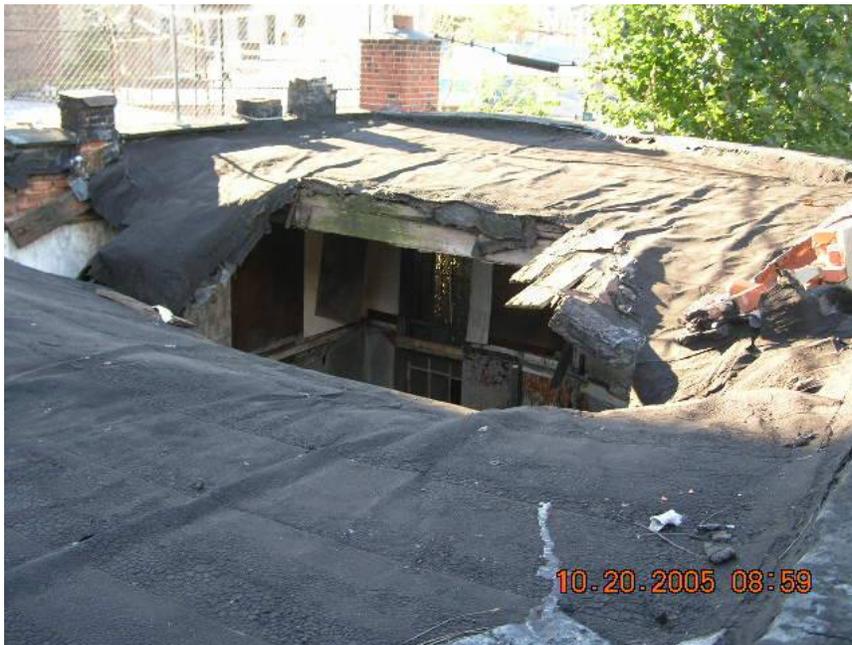


Photo No. 2 – Collapsed Roof At Southern End of Building



Photo No. 3 – Collapsed Portion of 1st Floor



Photo No. 4 – General Condition of Building



Photo No. 5 – General Condition of Building



Photo No. 6 – Damaged Timber Floor Framing



Photo No. 7 – Deteriorated Roof Membrane



Photo No. 8 – Deterioration of Timber Roof Framing