

REPORT



STRUCTURAL SURVEY OF THE BUILDING AT 1101 BROADWAY AVENUE MINNEAPOLIS, MINNESOTA

REPORTED TO

COMMUNITY PLANNING And
ECONOMIC DEVELOPMENT
Crown Roller Mill
105 5th Avenue South
Minneapolis, MN 55401

September 23, 2005

September 23, 2005

Mr. Steven Maki
Minneapolis Community Planning and Economic Development
105 5th Avenue South, Suite 600
Minneapolis, Minnesota 55401-2534



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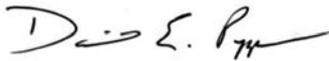
RE: Structural Survey of the Building at
1101 Broadway Avenue
Minneapolis, Minnesota
MCDA Contract No. C-21595, Release 01
BCG Project No. R111-05-1

Dear Mr. Maki:

We are sending six copies of our structural survey report to you. It has been a pleasure providing engineering services for you on this project. If you have any questions please contact Dan at (612) 789-6696, extension 17, or Keith at (612) 789-1776.

Sincerely,

Buildings Consulting Group, Inc.



Daniel E. Poppler, P.E.
Project Manager

This is to certify that this study report was prepared by me or under my direct supervision, and that I am a duly registered engineer under the laws of the state of Minnesota.



Keith A. Pashina

Date: September 23, 2005
Reg. No. 17134

Services performed by BCG for this project have been provided with that level of care and skill ordinarily exercised by members of the profession currently practicing in this area under similar budget and time constraints. This report only addresses the visible conditions, which were accessible for our observations. No physical testing or calculations have been performed to determine the adequacy of these building systems. No

Copies to: Erik Hansen - CPED

**STRUCTURAL SURVEY OF THE BUILDING AT
1101 BROADWAY AVENUE
Minneapolis, Minnesota
BCG Project No. R111-05-1
September 23, 2005**

TABLE OF CONTENTS

<u>Section</u>	<u>Description</u>	<u>Page Number</u>
1	Introduction	1
2	Project History	1
3	Structural Survey Results	2
4	Recommended Repairs and Budget	5

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Minneapolis, Minnesota
BCG Project No. R111-05-1
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1. INTRODUCTION

Buildings Consulting Group, Inc. (BCG) was retained by the Community Planning and Economic Development Agency of the City of Minneapolis to perform a structural survey of the building at 1101 West Broadway Avenue in Minneapolis, Minnesota. The purpose of the structural survey was to determine its present condition, and based on this review, provide recommendations and repair costs projections for needing repairs to the structural members and exterior building envelope.

Our condition study consisted of visual review of the structural components, including visual observations of the roofing, exterior walls, and interior structural members to document their current condition.

2. PROJECT HISTORY

The Minneapolis Community Planning and Economic Development group (CPED) presently owns the building located at 1101 Broadway Avenue in Minneapolis. The building is currently vacant and is proposed for renovation.

The building was constructed approximately 100 years ago. The original building was a two-story building with a full basement. The building has one addition, on the south side of the building, and is also two-story with a full (but separate) basement. The building has been vacant for about the past five years.

The building is a wood framed building with a brick and stone exterior facade. The basements are stone and concrete masonry walls, with concrete slabs on grade. The west side of the building abuts a single story retail building that does not extend back the entire length as the 1101 building.

The first floor was mostly former retail space and it appears the building was subdivided into about 5 retail storefronts at one time. The storefronts have been modified extensively over the years, and several interior walls have been moved and many storefront windows covered over.

The upper floor appears to have been used for professional offices, and is subdivided into several rooms.

The basement is divided into three different areas, each



East elevation of the 1101 Building



Photo courtesy of the Minnesota Historical Society

East side of the 1101 Building in 1934, showing the Jackie Ann Beauty Shop

separate from the other. Several modifications have been made to the basements, and two stairs remained in place, but were covered over at the first floor.

3. STRUCTURAL SURVEY RESULTS

Based on the structural survey that Buildings Consulting Group, Inc. has performed, the following summarizes the results of our review.

Item	Condition Noted
Structural Frame	<p>The interior structural floor framing consisted of nominal 2" x 12" joists spaced at 16" on center. The roof floor joists appeared to have double 2" x 12" joists spaced 16" on center. The first floor joists were supported by stone masonry bearing walls and foundation walls. The floor joists were in good condition with isolated locations of joist deterioration, particularly in the existing boiler room location.</p> <p>The interior framing consisted of 6" diameter steel tube columns. The existing beams were concealed within the partition walls and were not exposed.</p> <p>Generally, minor distress to the floor joists was noted and would require supplemental joists to be installed.</p>
Foundation Walls	<p>The foundation walls consisted of stone and concrete masonry wall construction. The basement was in a wet condition due to water entry through the foundation walls and had led to deterioration of the stone masonry mortar joints. The mortar joints were in poor condition in several locations, however, the stone masonry was in good condition considering the age of the structure.</p> <p>The water leakage distress would have to be halted to allow for a working basement space. A sandwich wall system could be installed to provide an interior wall with an interior wall waterproofing and drainage system. The alternative exterior wall waterproofing did not appear to be economically feasible due to the amount of sidewalk and street re-construction required to allow for access to the exterior of the foundation walls.</p>



Typical wood framing supporting the first floor, and end bearing on the stone masonry basement walls



Typical stone foundation wall



Second floor brick masonry on the east elevation

Item	Condition Noted
Brick Masonry	<p>The exterior walls are multi-wythe brick masonry. The masonry is laid in running bond, with narrow beaded joints. At windows, load-bearing segmental masonry arches support the second floor, and the first floor at the south and west sides. Below the parapets on the north and east sides, the brick were laid with alternating projecting brick, and corbeling. The walls have native stone capstones and decorative medallions on the front (north) elevation.</p> <p>The exterior walls are comprised mostly of brick masonry on all building walls. Generally, the masonry is in poor condition, with distress present that included:</p> <ul style="list-style-type: none"> • Deteriorated and open brick masonry joints. • Spalled or broken brick units. • Brick movement distress at north and east elevations. • Deteriorated steel lintels. • Spalled brick at the parapet wall. • Paint peeling distress on brick.
Brick Chimney	<p>The brick chimney is located near the middle of the building, and projects about 21' above the roof. The chimney shows extensive distress that includes:</p> <ul style="list-style-type: none"> • Brick masonry cracking in the top few feet. • Deteriorated mortar joints. • Isolated cracked brick units.
Windows and Doors	<p>The windows and doors, for the most part, are in poor condition. We noted:</p> <ul style="list-style-type: none"> • The exit doors on the east and west sides of the buildings are in poor condition. • Many of the lower floor window frames are wood and extensively decayed. • Many of the upper floor windows are missing, broken, or the wood frames are decayed. • The upper floor windows were mostly double hung wood frame windows and most windows appear to be inoperable.



Typical brick masonry on the front (north) elevation.



Deteriorated brick at the north wall parapet



Roof view showing chimney, skylights, and typical roof membrane condition

Item	Condition Noted
Roofs	<p>The roof system was in poor condition. We noted:</p> <ul style="list-style-type: none">• The roof membrane is a built-up roof in very poor condition. Numerous leaks have occurred, likely for several years, into the second floor below as evidence by peeling paint and deteriorated plaster ceilings.• The roof flashing extends up onto the brick masonry parapet walls. The backside of the parapet walls were mopped with asphalt and this coating is brittle and debonding from the brick.• There are four skylights on the roof, generally steel framed peaked roof structures with wire-reinforced glass. The skylights are likely original or several decades old.• The original roof system likely sloped from the front of the building to the rear and had an exterior gutter system at the rear of the building. An interior drain was installed when the south building additional was installed. One drain and one scupper were present at the east side of the building. An additional drain and scupper are likely required to provide additional drainage capabilities.



Typical skylight viewed from 2nd floor

RECOMMENDED REPAIRS AND BUDGET



North elevation

The 1101 Broadway Building has extensive areas of distress that will eventually require repair. To restore the building, we made the following assumptions:

- Repair or replace any deficient structural members.
- Restoring the exterior building envelope, assuming the historic appearance would be maintained.
- Restoring the basement spaces.
- Interior renovations, including non-load bearing walls, finishes, etc. would be done by others and not included in our cost projections.

Based on our structural survey, it is our opinion the 1101 Broadway Building can be renovated to a serviceable condition. Extensive repair will be necessary, and will include the following:



Brick masonry bulging at the 2nd floor line needs to be rebuilt



Typical brick masonry distress at roof parapet

1. Exterior brick and stone masonry repairs
 - A. Tuckpointing 100% of the exterior masonry walls.
 - B. Rebuilding bulging or shifted wall areas. These areas include:
 1. At the 1st floor cornice on the east elevation.
 2. Above the 2nd floor bay window on the north elevation.
 3. Rebuilding portions of the roof parapet, resetting cap stones, and providing new through-wall flashing.
 4. Replacing dislodged, cracked, spalled or broken brick units at isolated areas throughout the building.
 - C. We estimate about 11,000 brick will need to be reset or replaced. Some of the existing brick can likely be salvaged.
 - D. Replacing corroded lintels above 1st floor windows and providing new through-wall flashing.
 - E. Removing the existing paint from the brick and stone masonry and cleaning the masonry.
2. Repairing the brick chimney
 - A. Tuckpointing the exterior.
 - B. Replacing cracked or spalled brick.
3. Window and door replacement
 - A. We assumed all of the existing windows and doors will need replacement, with new insulated glass,



Existing skylights should be replaced



Decayed joist with sister repair joist adjacent to it

non-operable window units.

- B. Storefront windows and doors will need to be replaced due to their poor condition.
- C. Replacing the east entry doors and the access door on the south (alley) side of the building.
- D. We assumed former basement windows would be covered over with new brick masonry.

4. Roof repairs

- A. Removing the existing roof membrane and insulation.
- B. Replacing decayed roof boards as necessary.
- C. Providing new insulation and vapor retarder.
- D. Providing additional roof drains in the flatter-sloped addition towards the south.
- E. Providing a new built-up roof membrane.
- F. Replacing the existing skylights with new skylights.

5. Elevator Installation

- A. The existing building has stairways only, and therefore, we assumed a new elevator would be installed.
- B. The elevator required would likely be a hydraulic, three-stop elevator, serving all three floors.
- C. A new reinforced concrete masonry elevator shaft would be constructed within the building, supported on new spread footings.

6. Foundation Wall Repairs

- A. Spot-repairing existing rubble stone masonry walls.
- B. Providing a new basement wall waterproofing membrane on the interior side of all walls.
- C. Providing new interior drain tile and sump.

7. Wood floor joist and related repairs

- A. Replacing decayed, cracked, or broken wood floor joists and floor boards as necessary.

Table 1, shown on the next page, summarizes our projected repair costs for the building.

Our cost projection does not include the following work:

- 1. Demolition of the interior finishes, non-load bearing partition walls, trash, etc.
- 2. Abatement of asbestos-containing materials or lead-based paint.
- 3. Reconstructing the existing paved lot to the south of the building.
- 4. Providing new electrical service.

5. Providing new mechanical systems, including heating, air conditioning, fire protection, etc.

Table 1: Projected Repair Costs

Category & Item	Description	Category Cost
Contractor's Mobilization & Overhead Costs		\$55,000
1	Mobilization	
Exterior Brick and Stone Masonry Wall Repairs		\$285,000
1	Tuckpoint 100% of the brick masonry on all elevations	
2	Brick replacement	
3	Replace window and door lintels and provide new flashing	
4	Remove of paint from brick and clean masonry	
Brick Chimney Repairs		\$5,000
1	Tuckpoint brick masonry	
2	Replace distressed brick	
Window and Door Replacement		\$147,000
1	Replace all windows on 1st and 2nd floors	
2	Replace 1st floor storefront windows	
3	Replace all doors	
Roof Repairs		\$77,000
1	Replace existing roof membrane	
2	Replace existing skylights	
Elevator Installation		\$117,000
1	New elevator pit and shaft	
2	Hydraulic elevator system, with 3 stops (basement, 1st and 2nd floors)	
Foundation Wall Repairs		\$50,000
1	Spot-repair deteriorated stone masonry walls as needed.	
2	New waterproofing and drain tile on interior side of wall	
Wood Floor Joist and Related Repairs		
1	Replacement of deteriorated wood Joists	\$3,000
SUBTOTAL <small>Notes 1,2</small>		\$739,000
Budget for Design and Inspection Fees		\$59,000
Recommended Contingency, 5%		\$37,000
RECOMMENDED REPAIR COST		\$835,000

Note 1: The budget projection for this repair program includes the contractor's cost, and 5% of the construction cost for contingency for the repair program. All of the construction cost projections are based on the 2005 construction cost data and do not include adjustment for construction cost increases, money factors, and inflation.

Note 2: This cost does not include any provision for any abatement of lead-based paint, or asbestos-containing materials.