

20

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BERKMAN STORE 8 Main Street East Middletown Delaware

Survey by Richard Frunzi and Robert Howard : Conclusions written by R. Howard

INTRODUCTION

We were requested to survey the store building by Mrs. Robin Bodo for possible use by the Middletown Historical Society. We are not residents of the town and do not have views about the building based on anything but the examination. We do have in excess of thirty years experience in restoring historic buildings for the Hagley Museum and others. We have also designed several million dollars worth of rehabilitations for investors in Wilmington. The author currently is on the Board of Directors of Mount Harmon Plantation with the responsibility for the restorations and visitor safety considerations.

Use by the Historical Society means Berkman Store is a *public building* and must conform to the Building Code Standards (BOCA as modified) and provisions of pertinent legislation such as the Americans with Disabilities Act. These codes govern things such as floor loading capacities (100 lbs. per square foot except for library stacks which are 300 lbs. per square foot), fire alarms and suppression, fire escape routes, handicapped accessibility and toilet room designs, etc. We will, at the conclusion, comment on some adaptive reuse considerations which need to be factored in addition to the condition report on the building.

EXECUTIVE SUMMARY

There are two completely separate issues concerning the Berkman Store building. The first is its role as part of the historic center of Middletown. This issue, we are told, is one of great importance to the Society. Should the Berkman Store be preserved and to what visual appearance (as built ca. 1880 or as it appears now having been modernized)? We have offered no opinion as to the architectural merits of the building nor the merit of preserving it on the landscape.

The second issue is whether the Middletown Historical Society's best interest would be served in pursuing this building for itself. Based on the advanced deterioration of the building, and thirty plus years working with historical agencies, we believe it is **NOT** in the best interest of the Middletown Historical Society to pursue this structure for their

home. The condition has far too seriously deteriorated. Even if restored, there are significant use issues which need to be factored in.

BASIC PHYSICAL DESCRIPTION

The store faces north on East Main Street. It consists of two sections. The front section is wood frame and is 24 feet wide and about 51 feet deep. It is late 19th century in origin. This part has a semi alleyway of about 30 inches wide on the west side. Both parts have an open alley way on the east side. The newer 20th century rear (north) section consists of **three exterior concrete block walls with wooden floors partially supported in the center by steel "I" beams.** This section joins the earlier wooden section. The block part is 26 feet wide and 32 feet deep. The block section butts the adjoining commercial building to the west, faces a parking lot to the south and the alleyway to the east.

Only the block section has a basement. The first floor is one giant sales room without office or toilet room. The second floor has one room in the block section and six rooms and a hall (excluding the toilet room) in the wooden section. The ceilings here are about 7 feet in height by design. By examining the internal evidence, it is obvious that there have been many changes to the division of spaces in the old section as its use changed from domestic quarters to merchandise and record storage.

Somewhat significantly, the large front glass window facade of the store on the first floor is a later retrofit (about an 18 inch extension toward the street from the original facade). While this and the boarding up of the four windows on the second floor change the visual character of the structure, there are also structural impacts discussed later.

In order to give visual proof and orientation please refer to the sketch sheet and the photographs. The sketch sheet is not to scale but does approximate the room sizes and **locations.**

CONDITION ASSESSMENT ...arranged by problem.

There are four major contributing factors to the current state of advanced disrepair.

The store was not an expensively built commercial building as compared to the buildings across the street. The use of lesser materials, for example mortar mix of sand and lime without much if any binder (Portland cement), means the foundations are not as stable as they would be with a more substantial structure with better materials.

The vehicle traffic near the light vibrates the building contributing to foundation collapse and wall cracking. There are two major scenarios which contribute. First, we need to recognize the problem is not the gross weight or size of the vehicle but the weight per

Berkman Store -3

axle (and the suspension). The traffic light forces vehicles to change velocity. When the road is hot in the summer, a phenomenon called by traffic engineers "shoving" occurs. As a road roller can smooth out hot asphalt, heavy vehicles can "shove" it into ripples. This generally occurs by traffic lights or stop signs. After the ripples are formed, heavy vehicles tend to bounce sending vibrations through the ground. The worse the ripples are the more vibrations they produce. Of course, this problem is cyclical and determined by the road repair schedule. The other vibration factor is the speed of the vehicle hitting the bumps. Faster speeds disperse more energy into the ground. Slowing down for the light shoves the pavement and not slowing down gives vibrations. A store built in the days of buggies and wagons was never designed to withstand the shock of 50,000 pound trucks bouncing within 20 feet of the front door. (We verified this section through the materials testing section of DELDOT.)

The store has had "deferred" maintenance. The roof leaks have been let go to the point of significant damage occurring, gutters and windows are in disrepair, termites have invaded and done damage, etc.

Judging from the level of craftsmanship of the improvements, changes and repairs in many cases were probably dollar driven instead of quality driven. In other words, some work is borderline at best.

CRACKING WALLS AND DISINTEGRATING FOUNDATION SUPPORTS

By far the most serious problems are the structural ones at the base of the building. Previously described use of sand and lime mortar in the old section, inadequate footings under the block section and the proximity of heavy vehicle traffic has caused the old piers to disintegrate to the point of collapse in places. The sidewalk has sunk about two inches at the front western corner causing the façade to crack. Window repairs this summer determined that the windows were significantly out of square. In the newer block section, every three or four feet there is a vertical crack running from the basement to the top. (note: This is not confined only to the Berkman Store because the relatively new Cumberland Farms next door has a major crack in the block wall.)

This disintegration has caused the first floor to become shaky in places and out of level. It will not meet code requirements for 100 pounds a square foot loading. It certainly will not support archives which are rated at 300 lbs. per square foot loading. This is somewhat like the problem with the Capitol Theater in Dover where the whole bottom was rebuilt at enormous expense. Complicating the floor problem are the termite trails leading into this section of the building. Termites usually attack the softest wood. We know they have eaten partially through two beams in the exposed basement. We suspect they have done some real damage in the space between the ground and the first floor (about 16 inches).