Marion Meginnis
HP634
Preservation Technology
November 2016

Nesbit Cottage

The Case of the Tilted Cottage: Remediating the Impact of Pests and Moisture on a 19th Century Iowa Building

Overview

The Nesbit Cottage at 517 Ripley Street in Davenport, Iowa, is a mid-19th century gable front, two-bay, two-story building. It is a contributing structure in the National Register Hamburg Historic District [1](the Hamburg) and the smaller local Hamburg Historic District. The much altered 1,000-square foot house is of a timber/balloon frame hybrid construction. It has an estimated construction date of 1862, making it one of the earlier buildings in the Hamburg.

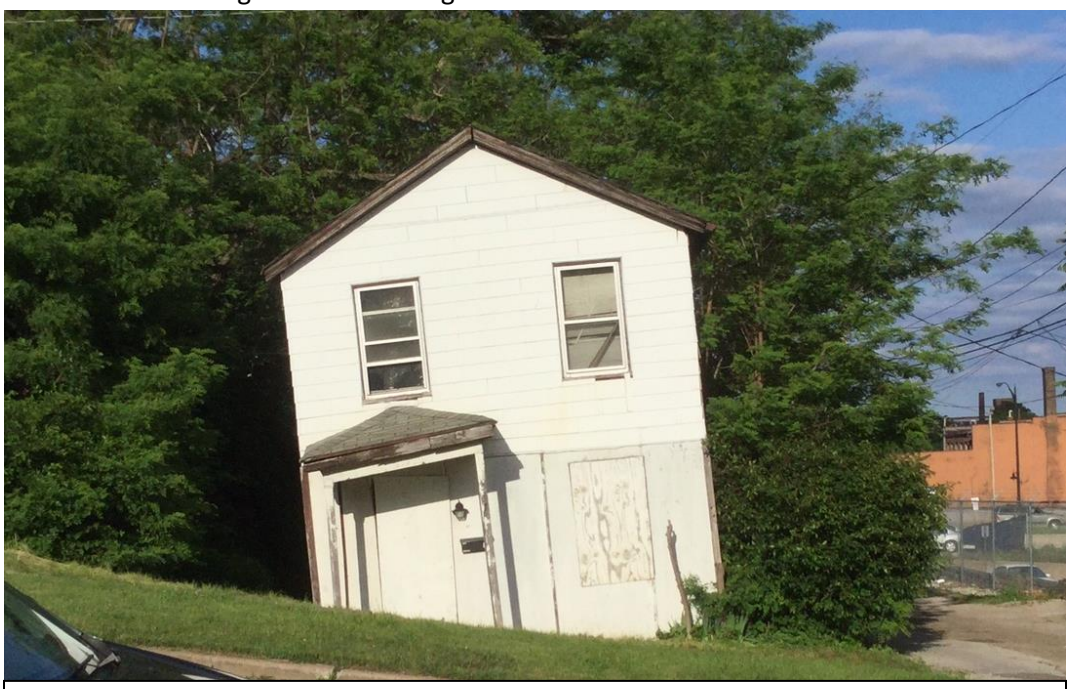


Figure 1 Looking east, the Nesbit Cottage prior to remediation showing building leaning to the north. June 1, 2015. GRG photo; used with permission.

The building has suffered severely from termite and moisture issues linked to both its location and decisions made by previous rehabilitation efforts. If the building is to survive, this damage must be addressed. A planned historic rehabilitation will include removal of non-historic outer coverings. Making the right decisions about how to insulate the structure is critical if the effort is to be successful.

History

The home's early history and construction date are unclear, but the most recent research would seem to indicate that it was one of two houses on a parcel located at the corner of 6th Street and Ripley and south along Ripley to an alley dividing the block. Early property owner Richard Hood borrowed $1,000 in 1857. Lack of repayment ended in an 1862 lawsuit won by plaintiff Rebecca Hunter Nesbit. For almost thirty years, the Nesbit family owned the property and lived in the house at the northwest corner of the parcel. 517 Ripley might has provided them with rental income.

In 1891, they sold the property to the Frahm family. The Frahms combined ownership of the Nesbit parcel with their own to the west. They likely demolished the house at the northwest corner to provide their large extant home with an ample side yard. They retained the cottage at 517 Ripley. In 1947, in another sale, the portion of the parcel containing the Nesbit Cottage was excluded from the larger lot that included the Frahm House and yard.

The Nesbit Cottage passed through a series of owners during the twentieth century. Changes to the property included the addition of insulated brick siding in 1947, of "backer board" (cement board reinforced with asbestos) siding in 1965, a rolled roof over wood and asphalt roofs in 1956, and repairs to joists, floors, doors and trim in 1978.[2]

Recent History

After being boarded for almost twenty years, Scott County took title to the property in late 2014 when it was in derelict condition and after it appeared to be of no further interest to tax certificate purchasers. The County conveyed the title to Gateway Redevelopment Group (GRG),[3] an all-volunteer organization whose goal is saving abandoned buildings in the Hamburg. About the same time, the city of Davenport, beginning to enter a new round of demolition, targeted the building for removal. Davenport routinely

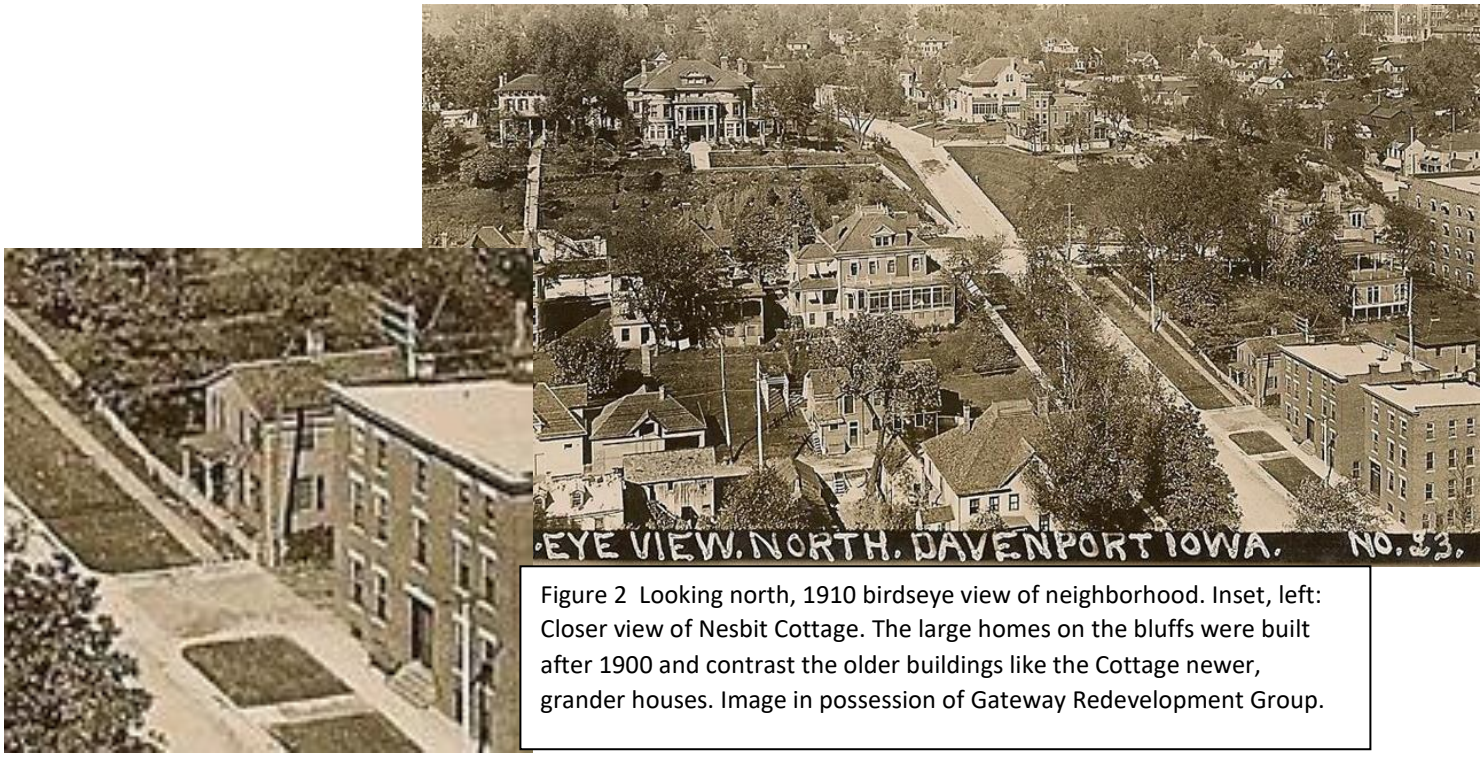


Figure 2 Looking north, 1910 birdseye view of neighborhood. Inset, left: Closer view of Nesbit Cottage. The large homes on the bluffs were built after 1900 and contrast the older buildings like the Cottage newer, grander houses. Image in possession of Gateway Redevelopment Group.

does not enter buildings prior to demolition, and it is likely that the condition assessment was made by an exterior survey. The building had begun to lean toward the north, indicating issues with a collapsed foundation or sill. The acquisition by GRG removed 517 Ripley from the city's list. A 1910 photo of Ripley Street[4] offers a glimpse of the cottage sheathed in weatherboard and sporting a wood shingle roof and six over six windows.

Why Save the Building?

Davenport is home to more than 1600 buildings listed in the National Register. Founding in 1836, the city experienced strong growth after he construction of the first bridge across the Mississippi in 1856 and continue to expand in the decades that followed.

The Hamburg Historic District, located five blocks north of the Mississippi River front and the downtown area was at first thinly populated. As it developed as a neighborhood of German immigrants, most early small houses were replaced with larger dwellings. Only a handful of its buildings, including the Nesbit Cottage, predate the end of the Civil War. When the Hamburg was surveyed and listed in the National Register in 1982, it had more than 350 structures. In 2016, that number stands at less than 280.

Many of the surviving Hamburg homes range from spectacular mansions to large family residences. Taken by themselves, they do not give an accurate portrayal of the district's history. It was home not just to successful business people but also to those who worked for them. Many early cottages have already been lost. The 1910 photograph of Ripley Street taken from the southwest shows the cottage and other newer, grander buildings surrounding it. In 2016, almost all of those buildings are extant. The Nesbit Cottage is significant as a surviving example of the early dichotomy of the Hamburg and helps in the true interpretation of its early diverse history.

Site and Building Description

The Nesbit Cottage is located on the east side of Ripley with its narrow front elevation facing west and its longer elevations running east-west. The building is comprised of two rectangular sections, the front being two story and the smaller rear section being one story. A narrow roofed porch runs along the first floor on the south side of the rear section. Fenestration includes doors and windows on the west and south and east elevations. The north elevation is unfenestrated except for a small and possibly later first floor window.

Starting at the Mississippi River's edge, downtown Davenport gently slopes to Fifth Street where the land begins a sharp climb to bluffs along 7th Street. Since the Mississippi River runs east/west at Davenport, what would be "west" for most Mississippi River towns is actually "north" in Davenport.

The Nesbit Cottage sits in a low section of its lot between 5th and 6th Streets below the level of the Ripley Street sidewalk. While the street rises dramatically between 5th and 6th Streets, the north side of the lot rises sharply and sits about four feet higher than the house.

Building

Prior to taking possession of the property, members of GRG entered the house to begin an assessment of its issues. They immediately discovered that the north sill had completely deteriorated and the north wall was sitting on studs resting on the limestone foundation. Not evident until later was that the wall

had dropped about sixteen inches. In 2016, prior to remediation, removal of later interior elements allowed a full assessment of the building's construction.

- The house was a modified post and beam construction, with 4" x 6" beams at the corners running from foundation to its roofline.
- The first floor sills were 8 x 8 beams on top of the limestone rubble foundation. 4" x 4"beams were mortised into the corner posts to create second floor sills.
- The walls were supported by four one-story 4" x 4" posts along each long wall fitted between the floors. Dimensional 2" x 4" studs placed on 16" centers also were one story. Some of these studs were strikingly crude.
- Floor joists were dimensional 2" x 8" timbers.
- There was no cross bracing at the corners.
- The building had no sheathing. The exterior weatherboarding was nailed directly to the studs and structural timbers.
- The corner posts were not exposed unlike many timber frame buildings. Instead the weather board was cut at an angle to fit together; vertical boards covering the joint.

Figure 3 Looking southwest, battered brick walls in basement below limestone foundation. 5/25/2016 Author photo.

- The two-story front section sat on top of a substantial basement with a modern concrete floor. The basement was supported by battered brick walls over earthen berms with a limestone foundation above. The rear section was set on modern concrete block walls over a crawl space at a depth of from eighteen to twenty four inches.

Both timber framing and houses with no sheathing are rarely found in neighborhood houses and may be an indication of simple, early construction.

Condition

The removal of later elements also allowed GRG to gain a clearer picture of the building's condition.

- While early assessment had shown issues with the north side sill; the south and west sills were also found to be extremely deteriorated by termites and/or moisture. The east sill, sitting on the later concrete block, was generally sound. Stud and joist ends were also damaged and rotted.
- Flooring on the first level had been replaced with plywood covered in carpet or tile. The first floor joists had been sistered to raise the floor level on the building's north side. A work permit

from 1978 notes work on joists. It is logical that the floor removal and joist repairs date to this time. Issues with the real culprit, the deteriorated north sill, were not addressed.

- The supporting wall posts on the north elevation had been destroyed by termites, in one case to a level of six feet. There was no evidence of current active termite damage in the building.
- The roof was relatively sound with no leaks on the interior apparent, but was covered with earlier wood and asphalt shingle layers.
- Wall plaster had been removed and replaced with drywall, likely at the same time fiberglass insulation bats were installed.
- The concrete block foundation at the rear was built without venting and the crawl space beneath was filled with blown in insulation.
- The substantial basement featured battered brick walls with a limestone rubble foundation set on top of the ledge above the brick walls. The floor had been laid with modern concrete.
- Single light sashes replaced original six over six windows sometime after the 1910 photo. Interior trim was not original, but window framing was. The replacement, and likely the original windows, were of the pinned type.

Causes

It is obvious that termites played a role in the deterioration of the sills. But damp conditions on the north side of the property contributed to making it an attractive location for such pests. Other rehabilitation efforts contributed to other moisture issues.

With the north side of the property a rounded hill sitting almost four feet above the house foundation and less than six feet away from it, water coming over the wall from the lot to the north had washed silt against the foundation, creating a moist environment attractive to termites. No mechanism to drain water away from the house had ever been installed.

The area on the north side was overgrown with weed trees and other vegetation that kept it in constant shade with no chance of drying.

The decision to rebuild the rear section without vents and to install insulation into an unheated crawl space created an environment trapping moisture and damaging what original joists.

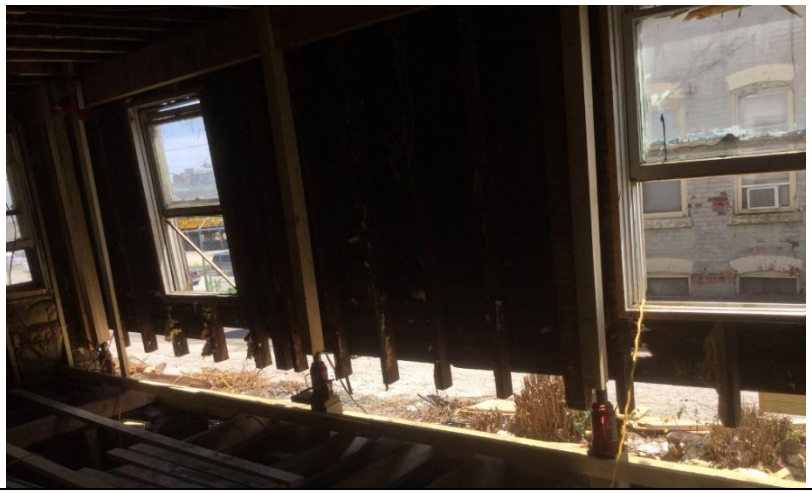
Without the added protection of the later asphalt and asbestos cladding, the decision to place insulated bats against original exterior weatherboard could have created serious issues. Had they not been in place, water would have been driven behind the clapboard creating a damp environment, further damaging the siding and building studs.

Remediation

With the long north sill missing, the south sill severely deteriorated and the stud bottoms and joist edges compromised, it was necessary to temporarily stabilize the building to permit installation of new sills and to repair the stud ends and structural posts. Mark Construction and its owner Mark Kellenberger, signed on to stabilize the building. Work began in Spring 2016.

Later interior cladding including first floor drywall ceilings and walls, insulation and most of the plywood flooring were removed.

With sections of the plywood flooring removed, Kellenberger two laminated beams were installed inside the building across the first floor rafters, one parallel to the south wall and another to the right of stairs and parallel to the north wall. The beams were supported by vertical posts set on jacks and running from the basement wall ledge (south wall) and the basement wall floor (north wall) to the temporary beams above.



The north side support was jacked only enough to make it tight against the existing height of the first floor. However, on the south elevation, the supports were jacked an additional one to two inches off square to permit removal of its sill and replacement with a new member, to cut the damaged ends of the studs and posts off and butt join them to new ends and to sister them to the new sill.

Figure 4 Looking southeast, south wall lifted for new sill, studs trimmed of rotted material and awaiting butt joining with good wood and sistered before being lowered into place. 7/14/2016 GRG photo; used with permission.

With repairs completed and with a solid wall on the south elevation, workers removed the temporary support along the wall and reset it close to the north wall, with the vertical posts set on the basement ledge. That gave the building the support of two temporary beams along the more damaged area. The new sill was installed and studs and posts were remediated.

Repairs were then made to the short west sill.

On the rear section, Kellenberger rebuilt the concrete wall, removed insulation from the crawl space, and installed new floor joists capped with a plywood subfloor.

Figure 5 Right, looking north, north wall being supported by two temporary posts and beams as repairs are made to north wall. 7/19/2016. GRG photo; used with permission.

Roofing

Workers removed three layers of old asphalt roofing as well as one of cedar shingles, revealing the spaced roof boards typical of buildings topped with wood shingles. The original roof boards were retained and covered with new sheathing. GRG volunteers installed new cedar shingles.

Site

Kellenberger excavated the north side of the property to permit installation of a supporting wall to reduce erosion and run off against the north elevation. Installation of the wall is slated for a later date. Plans are in place for removal of the weed trees along the north perimeter. GRG is also exploring installation of a French drain system to move moisture away from the foundation.

To date, the cost of remediation to building and site, the new roof and removal of later cladding is $37,000.

Addressing Potential Moisture Issues While Insulating the Building

During the summer of 2016, later exterior cladding materials were removed revealing the five inch weatherboarding which had been top nailed with square cut nails. This original material is in good to fair condition despite much damage from nails driven through it when the insulated brick and cement board siding materials were installed. Except for areas close to the foundation, it is free from rot.

In Iowa's cold winter climate, insulation of the building is an important aspect of its rehabilitation. Since the building has no sheathing, weatherproofing the building will require protecting the airspace behind the clapboard. This suggests that the best option would be to insulate the inside space, leaving the newly exposed historic exterior elements able breathe and shed moisture. The owners continue to explore various options.

The most current proposal calls for installing rigid 2" foam on the interior side of the studs and applying drywall over this insulation. Additional insulation would be installed in the shallow attic area above the second floor ceiling. While this method of insulation does not follow recommended Secretary of Interior Standards for Rehabilitation[5] which encourage retaining the depth of window openings to the interior walls, it would protect original exterior materials; in the case of the Nesbit Cottage, these exterior materials are the only extant historic elements remaining. The relationship of the windows to the interior cladding would also be restored.

Figure 6 Looking east, Cottage after remediation to sills, new roof and removal of later cladding. 10/11/2016 GRG photo; used with permission.

New historically accurate wood six over six sashes are proposed for the building. The building will be rehabilitated with an open floor plan downstairs with kitchen, living area and half bath and with two bedrooms and a bath on the second floor. GRG will make application to Iowa's Historic Tax Credit program[6] to offset rehabilitation costs.

[1] "Hamburg Historic District," accessed November 19, 2016, at https://en.wikipedia.org/wiki/Hamburg_Historic_District_(Davenport,_Iowa).

[2] Richardson-Sloane Collection, Davenport Public Library, Work Permits for 517 Ripley Street, 1925-1978.

[3] GRG website. Accessed November 18, 2016 at http://grgdavenport.org/.

[4] 1910 Birdseye View, Ripley Street, Davenport. In possession of Gateway Redevelopment Group, accessed November 18, 2016, at http://grgdavenport.org/GRG%20Web%20Pages/Projects/Project517/ripley%20517%201910%20birdseye.jpg.

[5] "Secretary of Interior Standards for Rehabilitation & Illustrated Guidelines on Sustainability for Rehabilitating Historic Buildings-Insulation." Accessed November 18, 2016, at www.nps.gov/tps/standards/rehabilitation/guidelines/insulation.htm.

[6] State Historical Society of Iowa website, State Tax Credit, accessed November 20, 2016, at https://iowaculture.gov/history/preservation/tax-incentives/state-tax-credit.