

Connecticut Property Engineering

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Mr. John Hufcut
Property Manager
Walnut Beach Condominium Association
Evergreen Property Management
P.O. Box 605
West Haven, CT 06516

RE: Walnut Beach Condominium Association Lintel Uplift and Other
Miscellaneous Items

Dear Mr. Hufcut:

As we discussed during our recent visit to review several items of concern at the Walnut Beach Condominium Association, this brief report is intended to delineate some of our concerns and potential repair methodologies, in particular the problem above many of the windows in the brick part of the complex. The issue with these areas is a phenomenon called lintel uplift. To better explain this, the lintel is a piece of angle iron, typically around 4-inches by 4-inches, that is used to hold the brick that sits above a window or door opening. Often this is attached to the underlying framed wall, but in some cases it is merely resting on top of the adjacent bricks. What happens with this phenomenon is that the steel in the lintel corrodes, creating iron oxide which has a greater volume than the original steel due to the oxidation process which forms a different lattice structure within the material. This causes an expansion somewhat similar to what happens when water freezes and turns into ice. This can then either lift the bricks above this area or in some cases push the center of the lintel down. One can readily observe this phenomenon in many of the bridges on the Merritt Turnpike where you can see large flakes of concrete have come off, and you can observe the underlying reinforcement which in the case of the Merritt Turnpike bridges was not coated rebar as is now generally used. Photo D shows this phenomenon at this complex on one of the window sills. Photos A and B show the phenomenon where it is lifting at the corners of the window and Photo C shows one where instead of lifting on the corners, it is pushing down in the center. It should be expected that this phenomenon will continue as the rusting of the lintels progresses.

Typically what is done to remediate this problem is that a couple rows of bricks are removed above the lintel, the lintel is then taken out and replaced with a galvanized steel lintel. Then the bricks are either reused or replaced above the area. We do have a concern that in many cases the bricks above the lintel may not be very stable and the project could grow in scope if the bricks above the removed ones do not stay in place during this process, which would then require a greater amount of removal. Further, many or most of

the bricks would not be able to be reused and getting a good match is usually problematic. Additionally, then a repointing program should be done in these areas to repair the damaged mortar. Once again getting a good color match is often difficult in this process, but we have found when this is done, if an attempt is made to match the original color before it's been stained from many years of use and then doing an acid wash process, a better blend can sometimes be obtained.

Another option that you and I discussed would be in these half wall brick areas which appear to be in slightly poorer condition than the complete wall areas, would be to remove the bricks and then install a vinyl or other product in this area. I suspect something like a cedar impression siding which is a synthetic clapboard look might blend nicely with the buildings, especially if perhaps an ornamental door header is installed, it could add nicely to the look of the buildings. Photo G shows a neighboring property where just vinyl was done which does not offer anywhere near as nice of an appearance as the different system on the bottom would offer. Perhaps an architect should be engaged to select the appropriate products. Additionally if that was done with a different product, likely the existing vinyl siding above the brick could remain, whereas if it was to be more of the look like photo G, the entire siding would need removal for color matching purposes. Also, likely the windows in these areas should be replaced as flashing the existing may be problematic.

Another ongoing issue that we discussed is the window header sagging which can be seen in photo F, albeit not the best photo. There is a sagging over the large windows in many areas which is evidenced by the roof line as well as the window trim. As you know and we have discussed for quite a few years this problem is not new, but does appear to be slowly progressing. I believe based on what we found in the past the windows have a header set back from the outside of the brick and the trusses were then placed over that extending outward, but were not placed at the appropriate load point on the truss which then creates this sagging lip which extends over the building. This should be investigated further, but I suspect based on some of the reviews we have done in the back areas, likely this could be jacked and plywood plated, albeit may be requiring lifting of plywood to gain access in these areas. Perhaps the best way to deal with this is to keep in mind that this needs to be resolved and when any roofs are done, this could be done far easier.

With regard to the ongoing deflection and settlement in the basement units that we have discussed many times, I believe that this somewhat needs to be done on a priority basis as discussed in our earlier reports, as some of the basements as you well know are in far worse shape than others and this appears to be directly related to moisture levels. In some cases more major repair like the ones that were done recently are appropriate or in some cases simply reinforcement or intermediate span beams can be a simpler solution, but

this project likely would need to progress based on doing the ones in the worst conditions. We will try to review these issues at your upcoming meeting on the 29th.

If you have any questions on this brief report, please advise.

Sincerely,



Timothy H. Wentzell, P.E.
Connecticut Property Engineering

THW/dr
Enc. Photographs

A



B



C



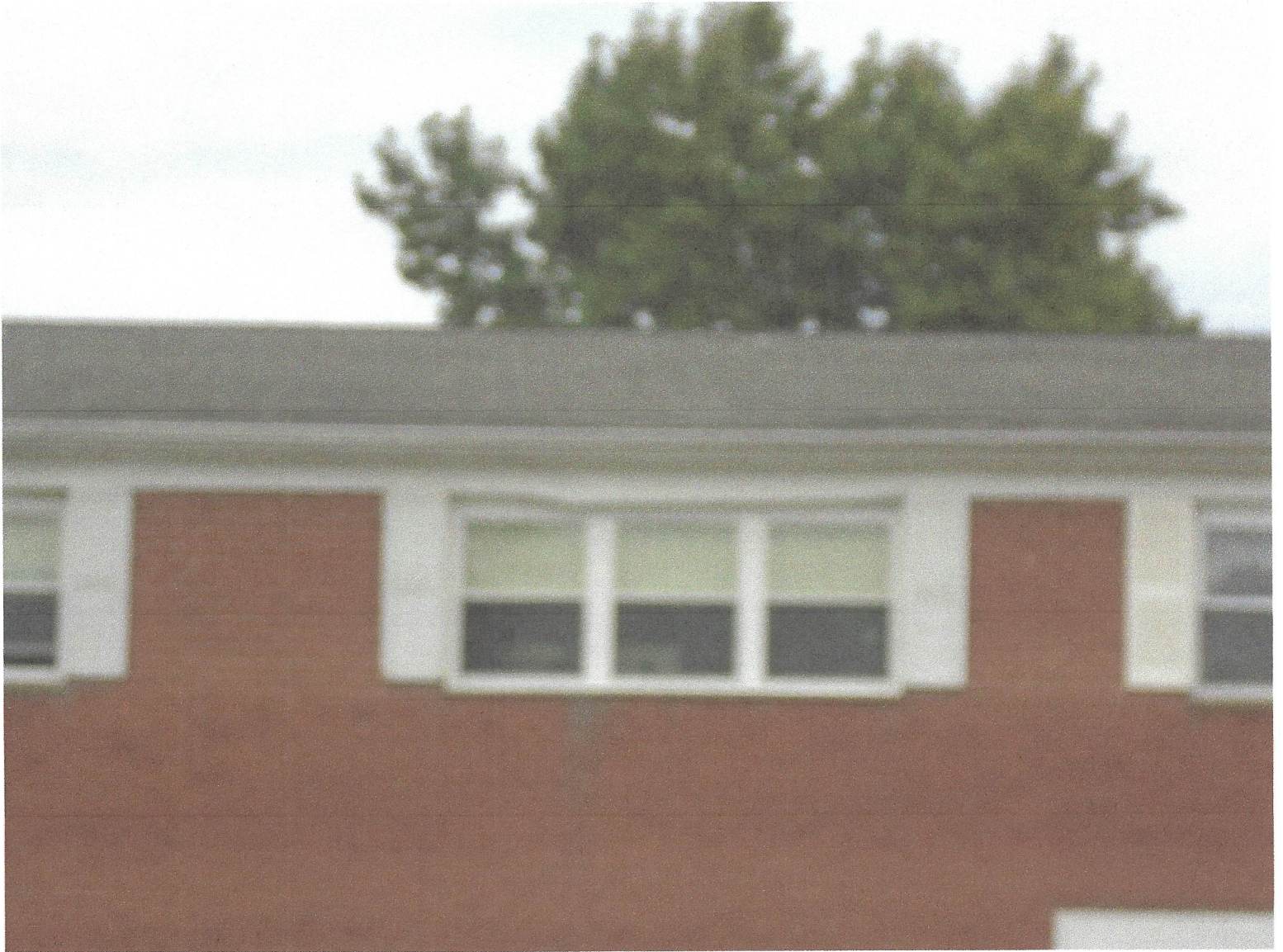
D



E



F



G

