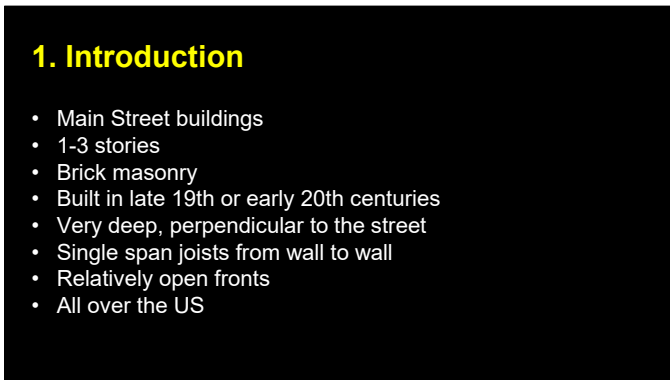


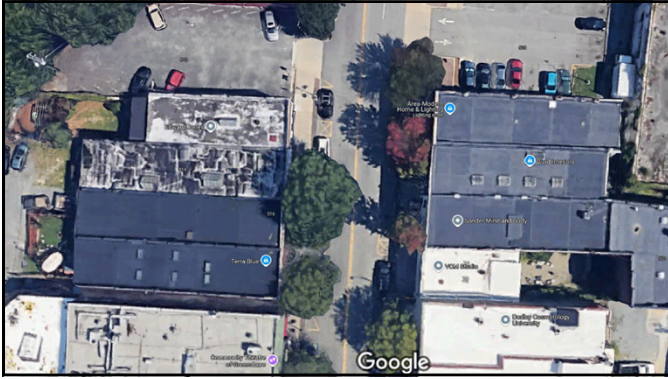
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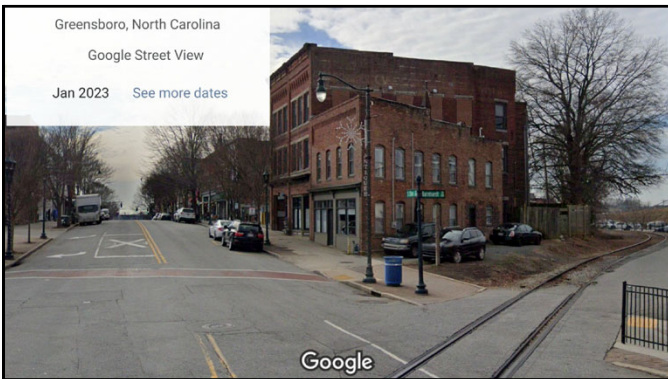
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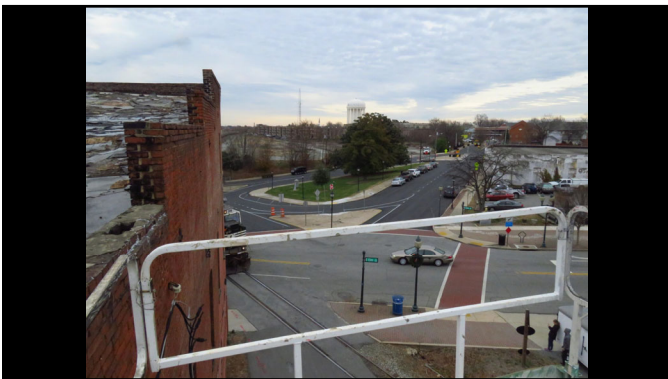


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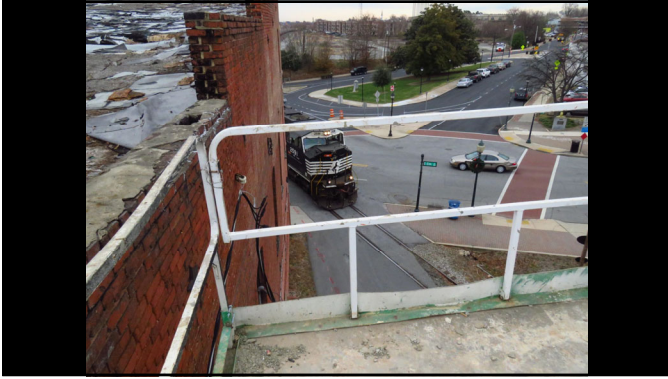
2. A Challenge

- Call from an owner about a building in need of shoring for rehabilitation
- Local engineer had said that it needed to be braced and shored from outside
- Span over low speed railroad siding to south
- \$490k for bracing
- Owner called us in to find a less expensive solution

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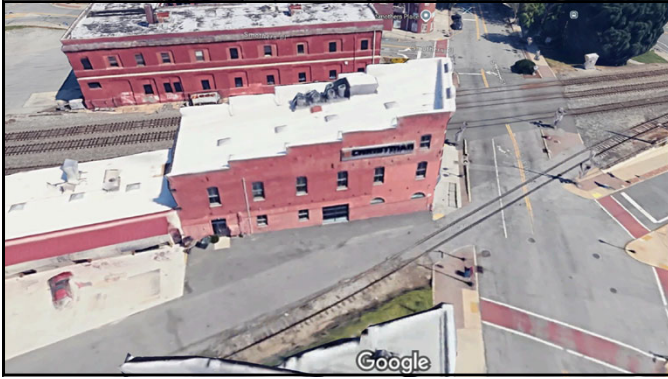
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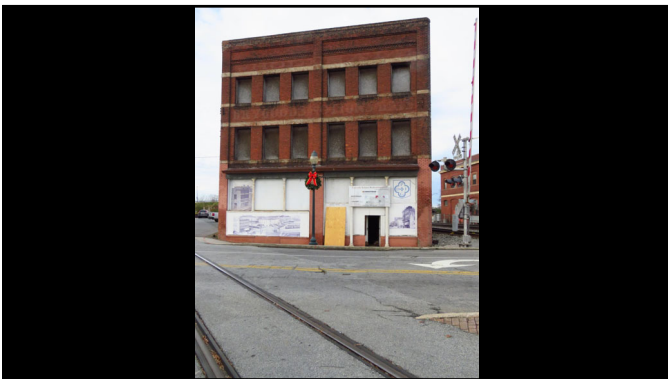


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3. What we found

- Three story building that had been the last on Elm Street to get rehabbed
- Two 19 foot wide bays
- Abandoned for many years

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3. What we found

- About 100 feet deep and 40 feet high

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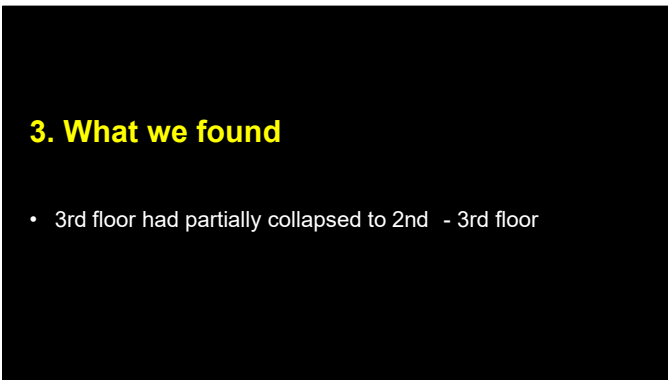
3. What we found

- Roof had partially collapsed to the 3rd floor

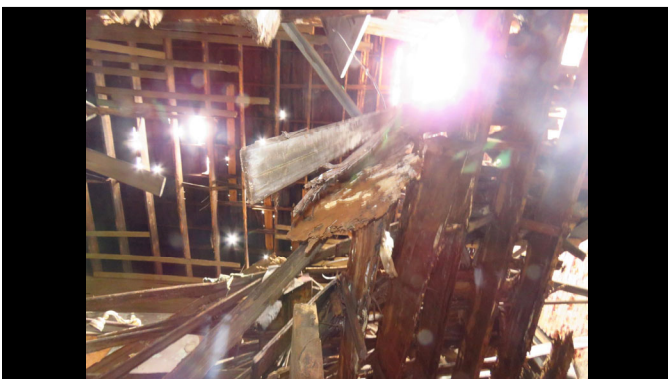
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3. What we found

- 2nd floor had partially collapsed to the ground

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3. What we found

- Leaving three brick flags waving in the breeze, each 100 feet deep and 40 feet high

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3. What we found

- North of building – high speed Amtrack line 10'-0" away

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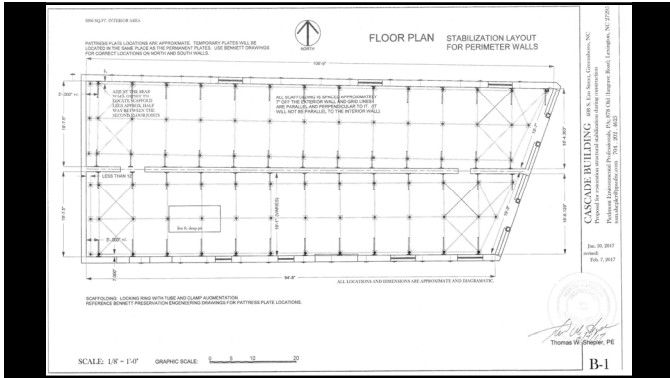


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4. It was immediately clear that...

- Building had little lateral load capability in the short direction, north-south
- Wood had not survived
- The masonry was the last man standing

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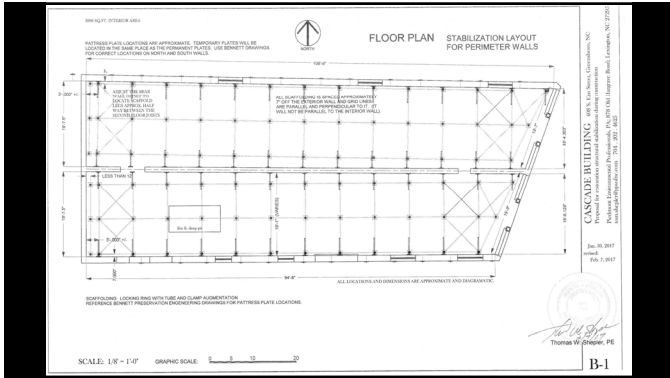


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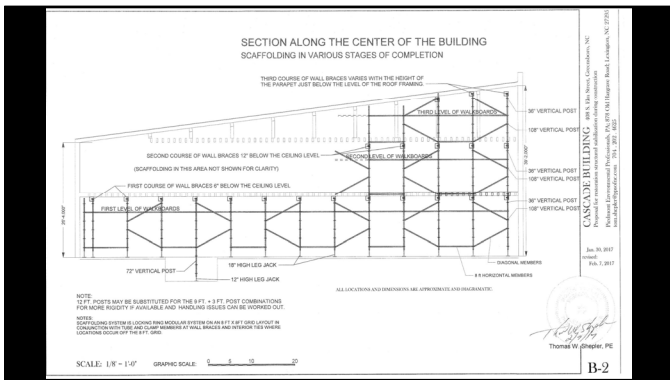
**5. What did we have to do?
And how did we do it?**

- Save the masonry
- Brace it against lateral movement with internal bracing, using the weight of the exterior walls to prevent overturning

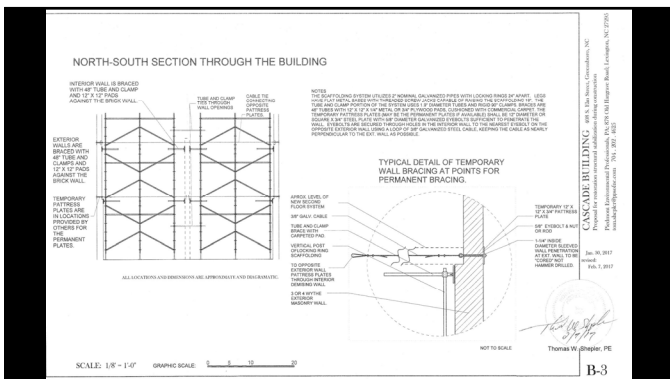
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**5. What did we have to do?
And how did we do it?**

- Repoint it with a soft, compatible mortar
- Repair the cracks

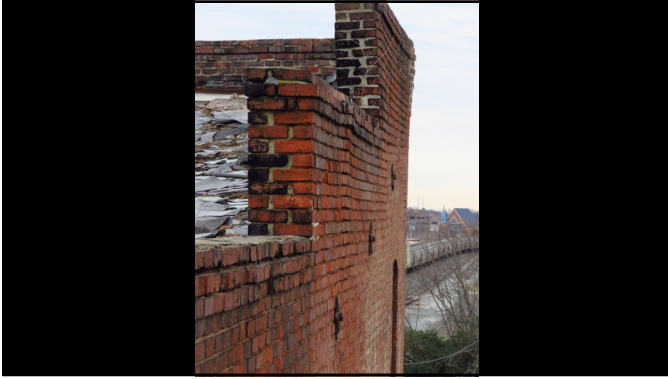
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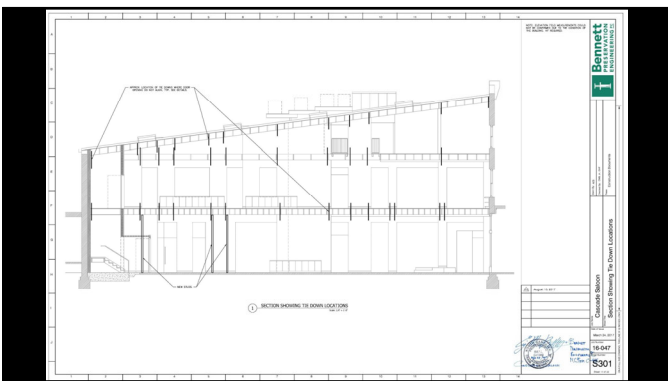


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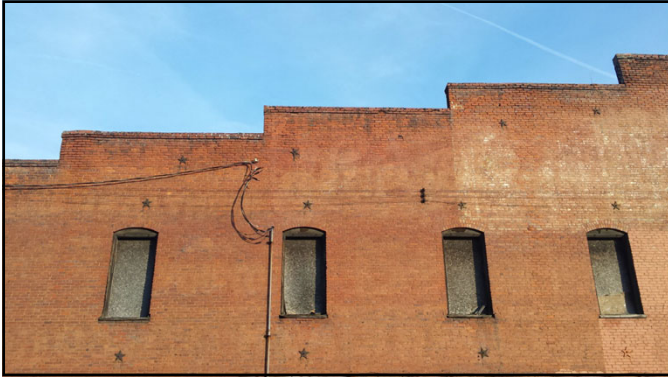
**5. What did we have to do?
And how did we do it?**

- Installed new internal diaphragms: 2nd floor, 3rd floor, and roof – wooden diaphragms, copper wraps on ends
- Tie the walls to horizontal diaphragms – tie rods and pattsess plates
- Brace the horizontal diaphragms against lateral movement in the short direction with CMU elevator and stair shafts

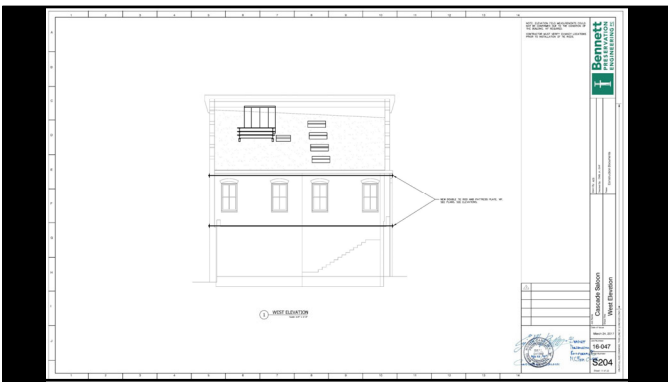
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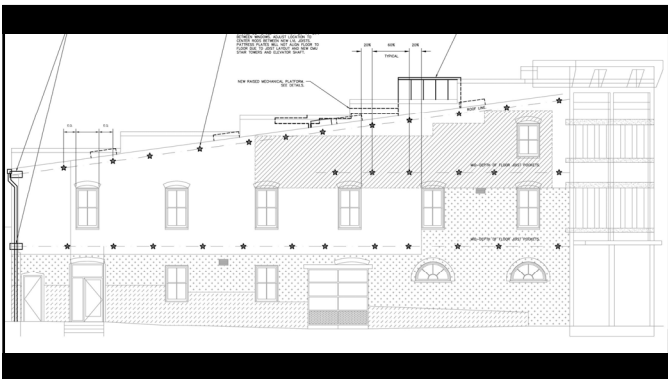
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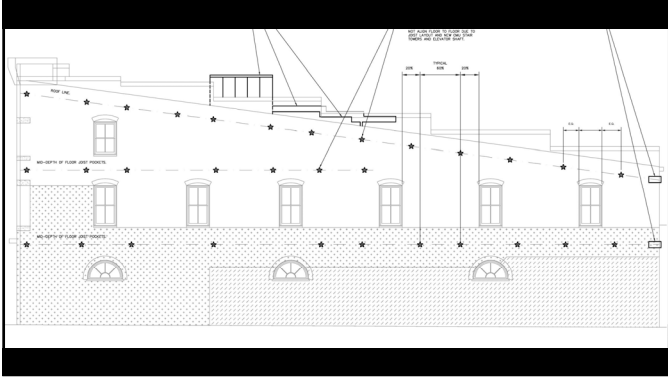
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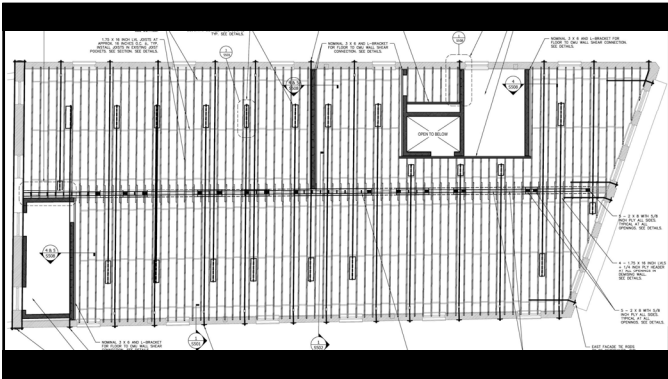
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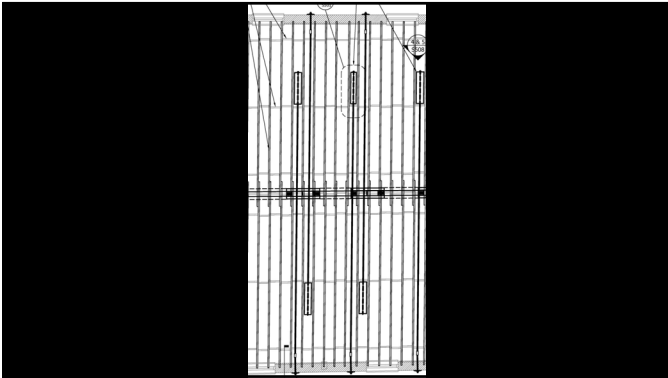
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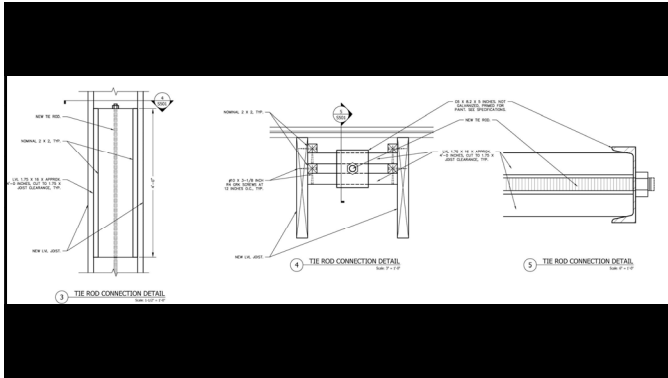
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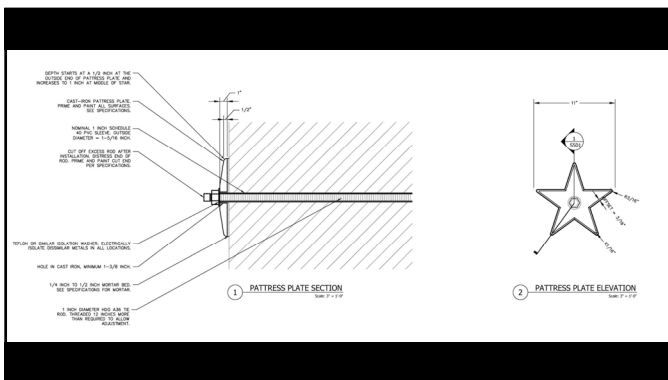
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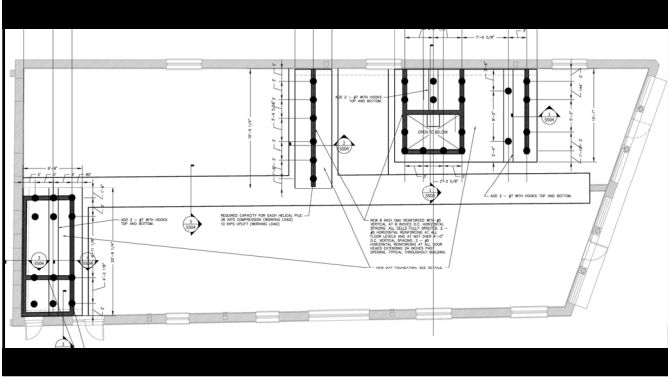


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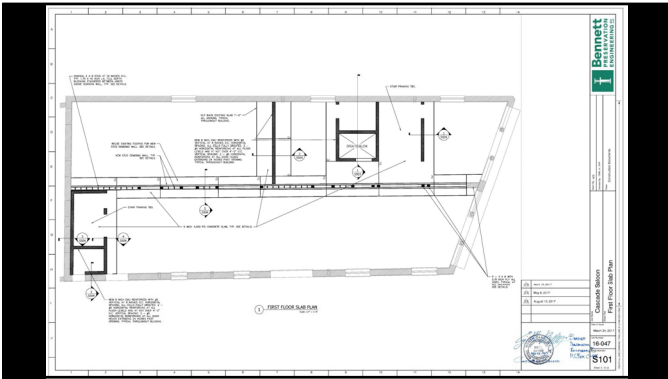
5. What did we have to do?
And how did we do it?

- Brace the horizontal diaphragms against lateral movement in the short direction with a CMU elevator shaft and a CMU stair shaft

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6. Construction

- Bracing
- Clean out
- Repointing

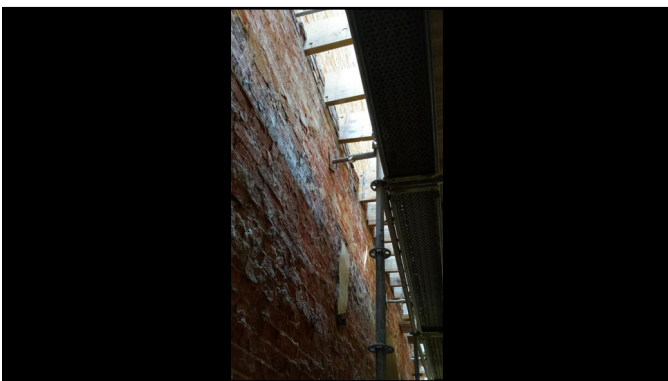
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6. Construction

- New internal CMU walls
- New wooden shear wall east-west
- New diaphragms, tied to walls
- New roof tie-downs to floor below
- New parapet bracing and cornice

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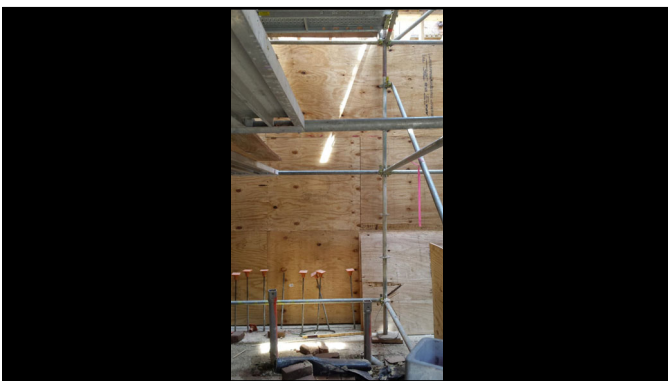
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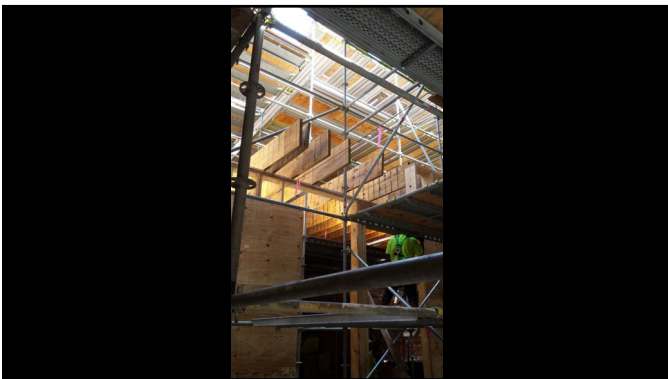
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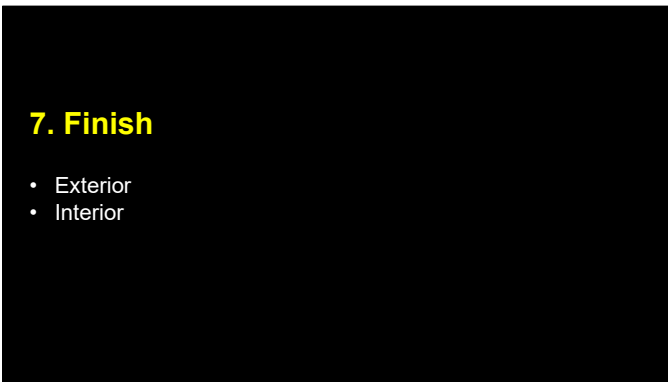
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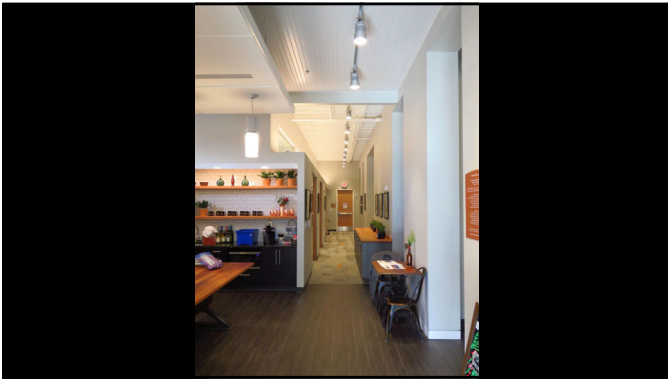
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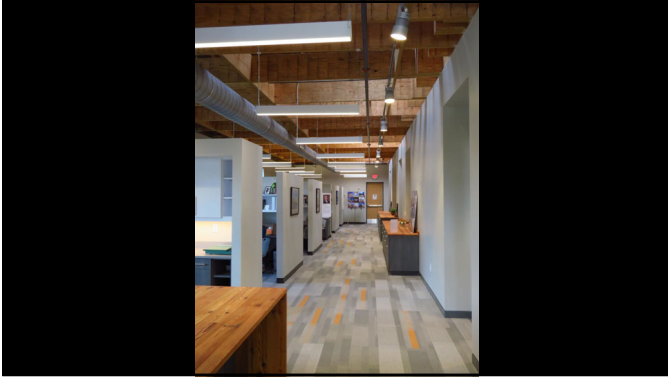
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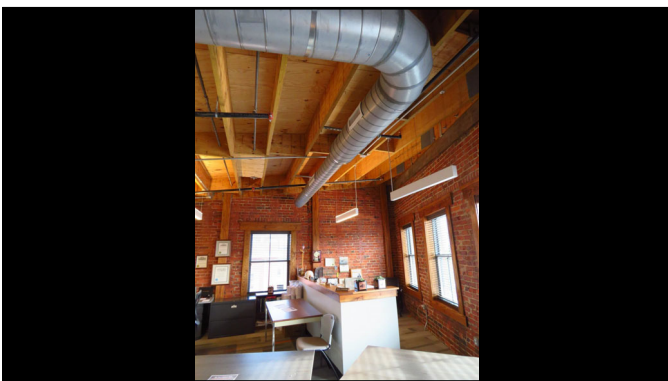
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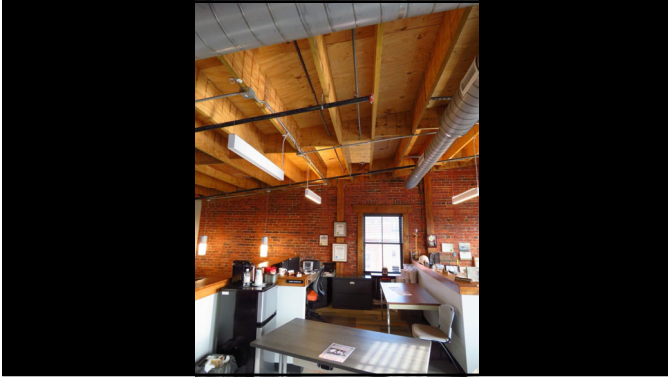
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8. Finish

- Conclusion:
 - No matter how bad a Main Street building is, if the masonry is still standing, it can be saved and bring the building back to life again as a vibrant part of the community.

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Questions?

Craig M. Bennett, Jr., PE, SE
Bennett Preservation Engineering PC
