



HERITAGE RESTORATION, INC.

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www.heritagerestoration.net

Massachusetts Incorporation as Heritage Restoration and Preservation

Weekly Work Summary

Project Name: First Congregational Church

Date: September 30, 2011

Owner: First Congregational Church

Address: 281 High Street

Bristol, RI 02809

Description:

Geuteras House

The goal of the work on the Geuteras House is to improve the air seal. The energy audit, including the blower door test, revealed the house is full of holes and gaps. The first idea in the planning was to replacing the heating system, although there are questions as the how the building will be used and what type of system to install. There was just not enough time in the season to develop the plan now. Also, replacing the heating system would not resolve the heat loss. So the plan was to improve the air loss by fixing the loose basement window frames, replacing the storm windows, weather stripping the doors and installing some new storm doors. This intent was not to repair the water and rot problems yet, but at the very least determine what is wrong with the building so a future budget and work plan can be created.

The HRI crew began to remove the storm windows and prep the window frames for new storms. The idea was to prep and paint the window frames only where the storms would seat, since the rest of the prep, paint and masonry repair can happen with the new storm windows on. And based on the Building Assessment completed by Jeremy, we knew many of the basement windows were in tough shape and needed repair. We knew there was some wood frame issues, although we did not know how bad they were, since much of it was disguised with bad filler, caulk and paint. When the started the prep they found some pretty bad rot in 3 window frames. They are:

- The east farthest back window is pretty well rotted and should be remade. There are masonry issues of lost mortar that are bringing water into the frame and rotting it out.
- The 2 first floor front tall window sills are completely rotted.

So with the limited budget, HRI will temporarily repair these frames. The repairs will only last a few years. We will develop a full scope with costs, and potentially pair these repairs with other tasks, like masonry, gutters and heating.



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Excavation

We had an unfortunate breakdown of the Bobcat. It should be back here at the end of next week.

Slate

The slate work is going well. We have a few more days on the east elevation, and then we can start with the west. When the HRI crew was cleaning the basement room under the Bell Tower, we discovered dozens of pieces of original slate. Some of it can be sued, although most will go into the salvage pile for the church, whatever they may want to use them for.

Heating

The heating install will begin next week. They will start by installing the baseboards upstairs. We opened the wall on the left of the alter in the balcony, so we can have access to above the closet for the boiler exhaust and air venting. We also installed planks so they can move around. The idea of a door in the wall cannot happen easily, since there is a large cross brace where a door could be centered on the wall. So we either leave a small access or we close it back up.

Basement General

The plan for the basement is still evolving. We have issues of water infiltration through the foundation from general surface drainage and the downspouts that use the basement to expel the roof runoff. The water perks up and runs through the clay, where it sits and can only evaporate and not drain through the clay. We have developed a plan:

- Pour the footings for the foundation walls interior retaining walls the interior beam and balcony supports, per engineers drawings.
- Lay crushed stone throughout, although leaving the areas where we have temporary supports.
- Repair the perimeter sills and timbers.
- Install beam and balcony support piers per engineer's drawings.
- Install the retaining wall block walls, with a 4" hole at the bottom where water can flow under the wall and into the crushed stone per engineer's drawings.
- Install a sump pit in the front, where the boiler used to be. Overflow will go into the old sewer line trough, since the sewer department approved this. We are waiting to get this in writing.
- Install a secondary sump pump with a battery back up. This will expel water to the ground next to the new bulkhead.
- Install 6 mil plastic over crushed stone.
- Install concrete floor throughout. This was determined to be the best way to reduce evaporation of water and to protect the plastic moisture barrier.
- Install new bulkhead. It will be a poured base with angled brick above. We will



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construct a new beaded tongue and groove bulkhead door.

Electrical

The electricians installed new lighting in 3 of the 4 basement bays. The 4th is not excavated yet. We have the same area of general lighting in the front of the church, where switches are installed at the bulkhead and at the top of the stairs inside the church. Each bay light switch is on a timber about 20' from the front of the church. We also found some corroded 100-amp aluminum coax cable feeding the kitchen. This was from the direct ground contact. We also found

Concrete

We had a concrete contractor come out and assess what we need to do. They should get back to us in the next few days for a ballpark estimate.

Masonry Assessments

This is from an email sent to Pastor Dan from Jeremy:

We've had two preservation masons look at both the FCC and the Gueteras House.

Ken Follett is out on Long Island and has extensive experience with historic masonry and large buildings throughout New York City. Rob has known and worked with Ken for the past 15 years. Ken is very well respected in the preservation field.

Keith Boyd is a recent find and a rare find. We've had a hard time finding a mason that was knowledgeable and willing to move the large foundation stones. When we called Keith and heard his English accent we had a feeling we found the right guy. Meeting with Keith today proved that true. Keith is a true, European apprenticed mason from England with incredible knowledge. Assessing stone structures such as the FCC is second nature for Keith.

Ken Follett
PCLS, LLC
<http://precon-logstrat.blogspot.com>

Keith Boyd
Windsor Masonry
Traditional British Masonry
<http://www.windsormasonry.com>

Each mason and consultant will look at a structure with a different eye and key in on different aspects of the structure.



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We originally called Ken in July in preparation for digging out the basement. We were concerned about the removal of about 5 feet of the foundation stones, how to deal with the removal of the sill, how digging out the basement would effect the foundation stones, and interior mortar conditions of the bell tower. Our intent did not have Ken looking over the entire building from a structural standpoint.

With Ken's recommendations in hand we moved forward. I probed 6 or 7 areas within the church to get an overall feeling for the mortar conditions of the interior rubble wall and was satisfied the mortar conditions were acceptable. The probes were to address concerns that the interior rubble wall was stable enough to remove the foundation stones and that the sand that has settled on the sills was not primarily from the mortar holding the stones together. I also drilled several holes through the mortar on the exterior walls to assess mortar hardness behind the pointing. We talked about the various materials that have been used for repointing. Ken made mention that the cracks on the front of the church should be looked at more closely in the future.

Having talked with Jon Vaughn about the mortar possibly being Rosendale natural cement raised some other questions. The walls of the church are built with lime mortar but the exterior pointing was natural cement. The logic path of why they would have done this is sound, though not a common practice. Lime mortar was inexpensive and easily procured so it was used as the bulk of the work. Natural cement was more expensive and had to be shipped in. With that said natural cement was harder, would weather better and while being a hard material, would be vapor permeable allowing the lime mortar behind to stay dry. Natural cement will not react with lime mortar.

I then went over to the Gueteras House for the assessment of the structure. As I was assessing the walls I was finding voids behind the mortar of the house and also the stonewalls. I found these voids visually and by drilling holes into the intact mortar. Not being an expert in masonry I emailed Ken with some questions, mainly, was a dry laid wall for a structure with pointed stones a common practice for the time. I suspected not which is why I called Ken to look at the structure.

Ken came out this week to look at the Gueteras house. The intent of his visit was to verify the condition of the walls due to my concern of the lack of mortar. While I don't have his report yet the general gist of what we found is:

- Being that the structure was built as a utility building it is possible that the walls were build in a mostly dry laid fashion and that the walls are stable
- The builders intent was to stack the stones with a minimum of mortar, both for cost and speed of building
- As with the FCC, the walls were laid with lime mortar (minimal in this case) and



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had a natural cement pointing

- It's possible that the top 4-6' of the wall was added at a later date

Now we get to Keith. He came out specifically to look at re-assembling the foundation and building the basement retaining wall and piers. Being that Keith had incredible knowledge of traditional stone structures I asked him to look over the whole structure, which he spent 3 hours doing.

Keith expressed different concerns than Ken, Keith was looking at the structure with a different intent. Keith reiterated what we already knew about the mortar and pointing.

Keith had pointed out that the broken panes of glass in the sash were not all from impact, most are stress cracks indicating the building is moving, we know. Keith identified a few areas of concern that need to be looked at for the future. Monitoring the situation is appropriate and can drive future intent.

We know that the Gueteras House and parameter walls will need to be repointed. There are some concerns with the FCC. The concerns are not immediate but do need to be addressed. Keith would like to perform a mortar analysis to determine color, aggregate and binder material. Keith would like to perform a full conditions assessment on the FCC and I agree, that doesn't mean that the assessment has to be done tomorrow. We can put it on the back burner. We should monitor the cracks on the front of the church in the meantime.

Part of the process of looking at buildings is the dialog that rambles along as we look around, and more often than not it is rambling. This rambling is an important part of the process and not necessarily what comes out in the written report. The running dialogue is kind of like ideas thrown at a wall. You get the big picture and narrow the thoughts down from there. Often when someone jumps into the ramblings midstream they come away with a different impression than what the final conclusion may find.

So I've gone the long way around to answer why Yoder didn't find the cracks in his report. My opinion is that the report only scratched the surface of the building. It's taken me a month and half to understand your two structures and I'm still uncovering new information. I don't know why Yoder didn't find the cracks, I can speculate all I want but I don't know what they were looking for or how they were looking for it.

Next Week

We expect the digging to start again by the end of next week.

The plumbers will start to install the heating system next week.



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The slaters will continue.

The painters will finish the prep and finish the Gueteras House windows.

We will try to pour the pad for the boilers. It all depends on how well we can keep the area dry.

Site Manager

Robert J. Cagnetta

Project Supervisor

Jeremy Ballard