

PLAYHAVEN FARM LLC & GREEN BUILDING PROJECT



GREENOVATION : FIREPLACE CHIMNEY

PLEASE NOTE:

Everything included in "Greenovation : Fireplace Chimney" has been transposed directly from the website. That includes references to the PlayHaven Farm LLC and Green Building Project (PHF&GBP) website pages, external websites, links to documents, etc. Because of how quickly things change on the internet, there are NO links from this document.

BACKSTORY (SEPTEMBER 2008)

Unfortunately, the Home Warranty policy that came with the house does not cover structural problems and so, please learn from my experience... if there is a fireplace and/or wood stove in a home you are wanting to purchase, pay the extra money to have a professional chimney inspection done! The company that did our building inspection did not inspect the chimney and told us the flaking of the brick on the exterior was cosmetic and while it needed to be watched, was not a problem.

We have had water in our basement, coming in next to the brickwork around the wood stove, every time it rains. We now wish we had paid to have the chimney inspected separately because our first renovation will be the chimney. The source of the water in the basement is the chimney. If we had had a proper inspection, we would have known about this problem before we purchased the house and would have been able to either ask the former owner to repair it at their cost or lower our bid to cover our expense to repair it ourselves.

We had both a mason and a chimney sweep company come out and inspect the outside and inside (respectively) of the chimney. It turns out that the stone cap of the chimney is cracked and separated from the brickwork. Also, there is SO much water damage to the brick veneer (the outside of the chimney) that it will be less costly to remove it all and start fresh than replace individual bricks. AND, the lining of the fireplace (in the living room) chimney is cracked in two places, making it unsafe. Which means it also needs to be replaced or repaired. (The lining for the wood stove in the basement is not damaged.)

Our options for repairing the chimney include:

- Exterior: remove the brick veneer entirely (disposed of in a landfill) and put up a brand new brick veneer OR remove enough of the brick veneer to get a good surface to adhere man-made stone as a second layer.
- Interior: remove the lining entirely (disposed of in a landfill) and rebuild it OR insert a metal tube liner with the gaps between it and the square existing liner with a special product that is made specifically for the purpose and that hardens (like mortar).

NOTE: Adding the man-made stone veneer is not a "quick-fix" nor is repairing the lining by adding the tube. Either option will create a chimney that will stand the test of time. Either option will require the exterior to be sealed (something that was never done to the current chimney... the mason told us that if they had sealed it even up to five years after it was built, we would not be having water damage problems).

I investigated ways to avoid having to send the removed brick to a landfill and discovered that no one in the Kansas City area will take it unless the brick can be reused as brick. Since that is not the case here, I looked for someone to take the brick and crush it for use as an aggregate; again no luck. I considered crushing it myself and using it for landscaping until I read the Materials Data Sheet for brick and discovered that due to the silica in it the dust is as damaging as asbestos to our lungs. Another suggestion was to use it as rip-rap in the pond; but, since we will not ready to work on the pond for who knows how long, that would mean storing the rubble on-site.

Luckily, the cost to either 1) rebuild the interior and exterior of the chimney is about the same as 2) adding the man-made stone exterior and inserting the repair tube liner.

So, the deciding factor for us was to do this in the most environmentally friendly way possible which is number 2): adding the man-made stone exterior and repair liner. There will still be some brick that has to go to a landfill, but it will be a fraction of what it would have been otherwise.

The mason (George Shull Masonry of Kingsville MO) and his assistant were out this week and the new exterior of the chimney is beautiful! They spent 2-1/2 days working on it and so we are all set for the new liner (which will happen later this month). I was very impressed with the efficiency and skills of these two men. Not to mention how they carried all that stone and mortar and such up and down the scaffold with what appeared to be no trouble at all. They did a great job cleaning up after themselves also. (Of course, our youngest Newf was a BIG help when he decided that the plastic on the back deck needed to be torn into shreds - thereby spreading the chunks of chiseled stone and mortar all over the deck and yard. Thank goodness for the shop vac!.) We spread the mortar and small pieces of stone on the gravel driveway and Mr. Shull's assistant took the bucket of flaked brick home to use in his landscaping. So NOTHING went into a landfill! YEAH. We decided to purchase the excess stone and use it as an accent on the front of the house -- which will probably happen during Mr. Shull's slow times and when we've put a bit of money aside for that purpose.

EXTERIOR CHIMNEY REPAIR (SEPTEMBER 2008)



Tarped to minimize water seepage to basement.



Removing the bad brick.



The scaffold goes up and the flakes come off.



After patching, the corners start the process.



Moving right along.



Moving Up.



Putting in the flashing.



Just about there.



Almost done.



Cleaning Up.



The part under the deck roof - before.



.... now patched.



.... moving right along.



.... capstone in place.



All done --- in only 2-1/2 days!



(Note: there will be no visible capstone on the top of the chimney.)

The company doing the liner will apply a special material to the top that will seal the crown.)

The only brick waste is in this 5-gallon bucket and it is going to be used on the assistant's landscaping.



NEW CHIMNEY LINER (OCTOBER 2008)



Getting the Liner into the Chimney

(there is a second chimney for the basement wood stove that you see to the right of where the new liner is being inserted)

Looks like the chimney hasn't been cleaned for a really long time... that is creosote on the wood stove insert.

They put fiberglass insulation at strategic points to hold the liner in the center so they can pour the mortar-like insulation around it... at the top and at the bottom (see picture at right).





Making sure the mortar-like insulation doesn't come through at the bottom and then cleaning up with the super vacuum.



It ended up that we complicating things a bit because we had the architectural stone applied before the liner.

They thought about cutting into the exterior to do what they needed to to keep the mortar-like insulation from going into the hearth area. But instead, they were able to do what they needed from inside the hearth area itself.

A Grate Chimney Sweep came back a couple weeks later to apply the sealant to the cap of the chimney. Now we are all set!



CHIMNEY SEALANT (AUGUST 2010)

We have had another intense weather season this summer! Luckily, we were able to get the chimney treated during the hottest week of the summer... it is recommended to put a water repellent coating on the architectural stone and we had intended to do that last year, but the weather did not cooperate. So now the chimney is treated and that should last for 10 to 15 years.



When you are deciding which sealant to use, I highly recommend you contact the people who installed your architectural stone and find out what they prefer to use.

I did a bunch of research and it was rather confusing. During my search on the internet for clues about what to use, I found conflicting information. Your situation could be different from ours, so I have not included links this time.

I contacted Centurion (manufacturer of our architectural stone) and spoke to a very nice man who was more than happy to weed through my information and point out what was accurate for us and why.

Then I called George to find out which brand he prefers. (I was planning to then go buy it and have the hubby do the spraying.) I discovered, gratefully, that he would charge me about the same amount I expected to pay simply to buy the product to spray the chimney!

Let's see, spend the money and wait for my husband to get around to it... OR spend the money and have it done right away. Well, that was a no-brainer. (I hired George and Brandon.)



Brandon got the job of spraying. Here is George pumping up the sprayer. I liked the fact that they used the pump sprayer as opposed to something that would use fossil fuels.

This stuff is VERY slippery, so make sure you (or your hired crew) cover surfaces that you will walk on. It will also damage foliage, so you'll want to cover anything you don't want this stuff on.

Very basically, the sealant keeps the larger molecules of water out while letting the tiny molecules of air through.

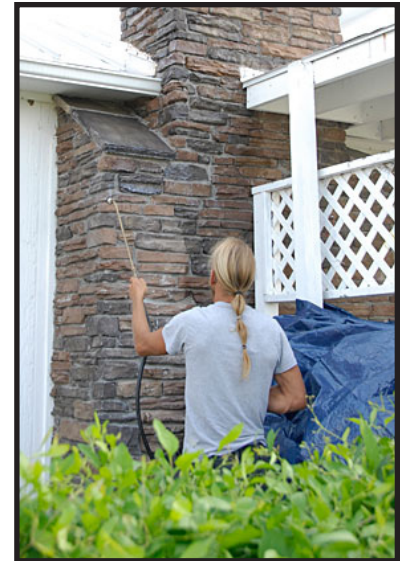
Brandon started from the top and worked his way down knowing that the sealant would drip down the stone some.

At this point he had already done the far side of the chimney. And let me tell you, that TPO roof is slippery enough... this sealant made it practically deadly. No mishaps though, thankfully.



I just couldn't resist this "artsy" silhouette. I love the reflections on his glasses and at the tip of the sprayer.

This image gives a nice contrast between the treated stone and the untreated stone. The darker areas are treated and the color is still nice and vibrant even though it has cured.



Here we see the guys retrieving the leftover sealant to use on another job.

Gotta love that they can use the rest on another job. Another super job, Brandon and George! Thanks