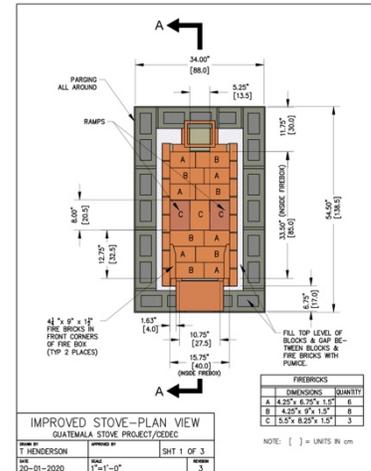


Stove Plans

Building Masonry Cookstoves

1. Determine the location where the stove will go, making sure there is no obstruction for the chimney. The homeowner (usually the woman of the house) must be involved in this decision. Usually the stove will be backing a wall, and a lot of times built in a corner of the room. Ideally, the members of the family will carry the materials and water, do the mixing, sift the sand, fill the bottom 2/3 of the stove, and even cutting and laying blocks (if they have those skills). By being involved in building their stove, they will gain a sense of appreciation and ownership, resulting in using and maintaining the stove properly and effectively in the future.

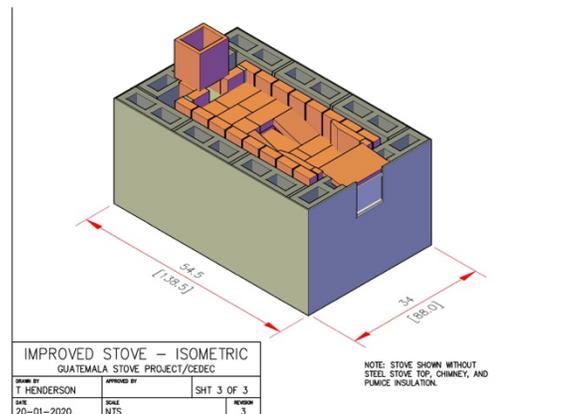


2. Ask the family to move their cooking (open) fire outside while the stove is being built.

3. Level the floor where the stove will be built. Usually they have a rough dirt floor.

4. Soak the blocks in water for few minutes for better bonding with mortar. Make a large batch of mortar (1 part Portland cement to 3 parts sifted sand).

5. Spread some mortar on the ground, where the blocks will sit, and lay the first course of blocks with their cavity holes facing down. Carefully lay the second course (holes down as well), making sure all joints are overlapped (see Fig. 2 & 3). Fill the seams with mortar.



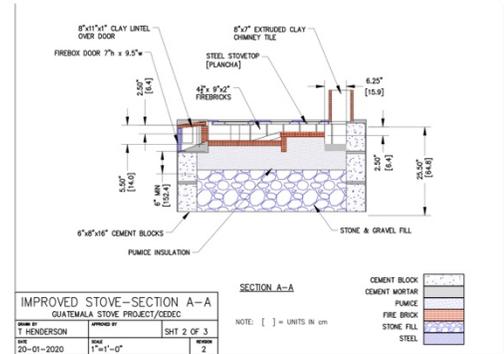
6. Fill inside of the block walls with pumice (or dirt, if pumice not available) to the top.

7. Lay the top course of blocks, holes facing up this time, leaving a 10" opening in the front for the door, by cutting blocks on two sides of the door. Fill the block cavities with pumice or dirt.

8. Pack and level the fill inside the stove gently, avoiding pressure to the walls.

9. Lay flat a course of dry bricks (with no mortar) on top of the fill, as the floor of the firebox (combustion chamber). See Fig. 4. The gaps will be filled with wood ash in future.

10. Make brick mortar (1 Portland, 1 lime and 2 sand), and lay the bricks (standing), for the wall of the firebox. The bricks must be soaked briefly (but not too much) in water to accept mortar. The top of the bricks should be about 1 inch higher than the blocks.



11. Install the door by mortaring in its arms in the cavity of the side blocks.

12. Lay the clay door lintel, such that the top is flush with top of the blocks.

13. Set the steel stovetop (plancha) in place, on top of the brick walls and set the clay chimney tile next to the plancha, as shown in Fig. 4.

14. Pour the top concrete with a mix of 1 Portland to 3 sifted sand, flush with the plancha. Level it as much as possible. Wait for 15-20 minutes and work the surface with spreading some dry Portland and trowelling down gently to get a smooth finish. Bevel the edges all around.

15. Make a hole in the roof, use a plumb bob if you need, and install the 3 piece 5" galvanized pipes (chimney) complete with a rain cap (sombrero) wired on. Mortar the gap between the pipe and the clay chimney tile, as well as the gap between pipe and the roof.

16. Parge (stucco) block walls with a mix of 1 lime to 2 fine sand (screened) using a steel trowel and/or wood float. Use the float to obtain a smooth finish. It is easier to obtain a textured finish using your hand in a wet rubber glove, and by rubbing the wall surface with a circular motion.

17. At this point you can congratulate the family members that they will not have to breathe smoke anymore and will hopefully have healthier lives in the future.

18. It is very important to tell the family not to use the new stove for at least two weeks to let the cement cure. It is helpful if they keep the concrete wet for the next two days by sprinkling it with water whenever it looks dry.

19. Document the stove that you built, by taking a picture, and writing down the full names of all members of the family. The documentation is usually done by a GSP coordinator, if available.

Guatemala Stove Project
guatemalastoveproject.org
Updated by: Al Teflissi, Jan. 07