

# MUD ROCKET OVEN

- POTENTIAL & PRINCIPLES
- Flip & Jon Anderson





# POTENTIAL

- The Mud Rocket Oven can be made with locally available materials like clay and horse manure and/or sawdust.
- People who build their homes with mud and sticks immediately understand they can build this oven themselves.



Petit Bois, Haiti





Panama



Mud Rocket Ovens are recognized as  
money-generating,  
micro-business opportunities.





Petit Bois, Haiti



<http://www.eco-kalan.com/>

Philippines





Les Cayes, Haiti



Central Plateau, Haiti



# OVEN COMPARISON

- Rocket Ovens heat up quickly and ...
- Reach 500°F in about 15 to 20 minutes.
- Conventional wood ovens take about 1 to 2 hours to reach baking temperature.





# MUD ROCKET OVEN

- Uses much less wood than a conventional wood oven.
- “The amount of wood you use to heat your oven and bake is equal to the amount of kindling I use to start my fire.” Kiko Denzer





# MUD ROCKET OVEN

- You can cook with exhaust heat on top of the oven.





# CONVENTIONAL WOOD FIRED OVEN

- A (smokey) fire burns for a long time using lots of wood to heat up the high-mass oven walls.
- When cooking temperatures are reached, ashes are removed. Residual heat in the oven cooks the food.
- There is minimal smoke contact with food.









# INSULATING CLAY

- Rocket Ovens are low mass and insulating.
- They are built with a mixture of 50% clay and 50% fine organic material.
- When kiln fired, this mixture actually floats on water.









# HIGH MASS COB

- Conventional wood fired ovens are made with a mixture of clay, sand and straw. It is called cob or adobe.
- This mixture is high mass and must soak up heat from the fire before the oven can begin to bake. It's not insulating.





# WHITE ROCKET OVEN

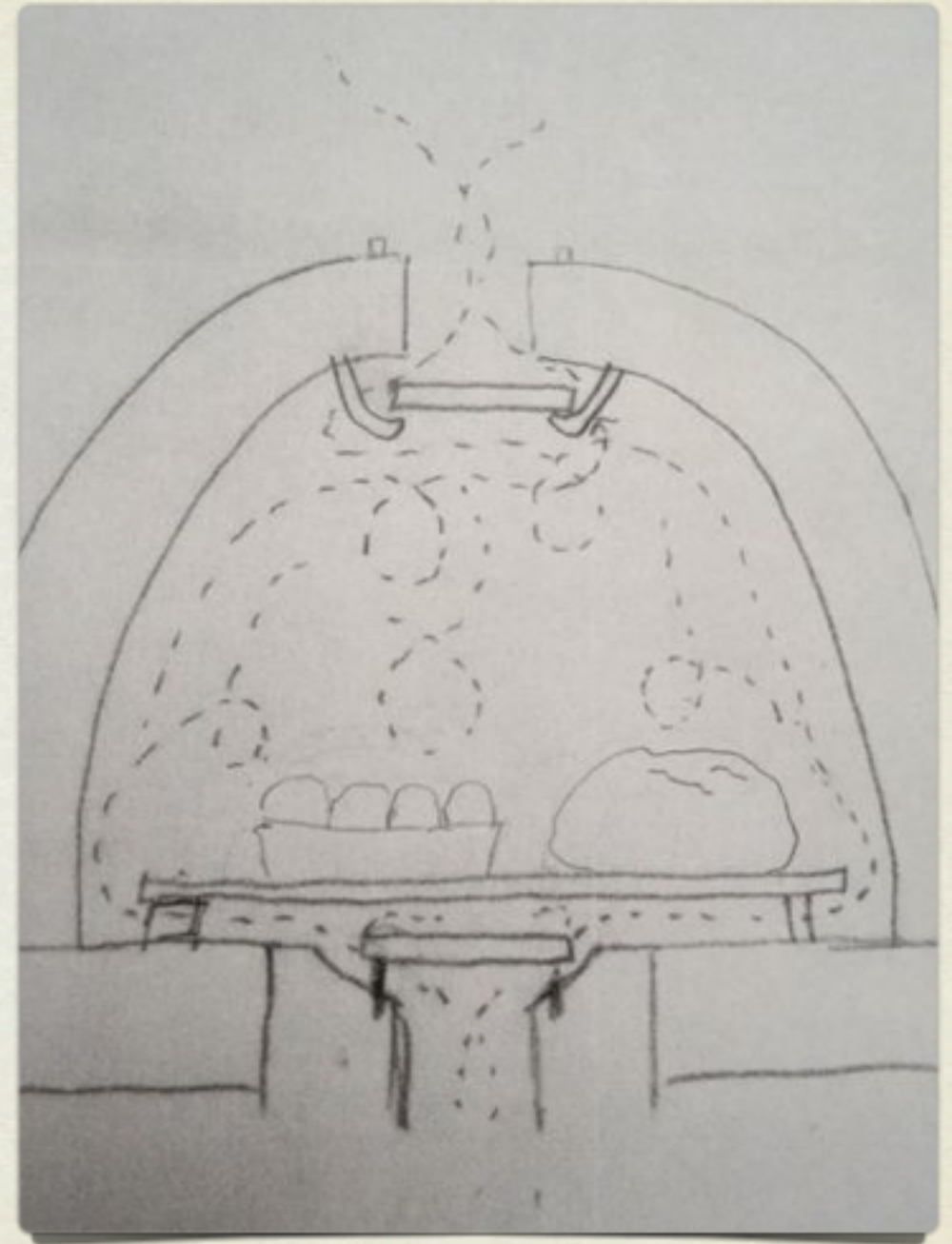
- With “white” Rocket Ovens, the baking chamber is separated from the hot gases and smoke.
- This type of oven requires two chambers, is more difficult and expensive to build than a “black” mud Rocket Oven.
- Baffling is required to distribute heat evenly.





# BLACK ROCKET OVEN

- In a “black” Rocket Oven, hot gases and smoke from burning wood are in contact with the food.
- A clean burning stove is essential or else the food could be covered with soot and ash.









# CLEAN STOVES ARE ESSENTIAL

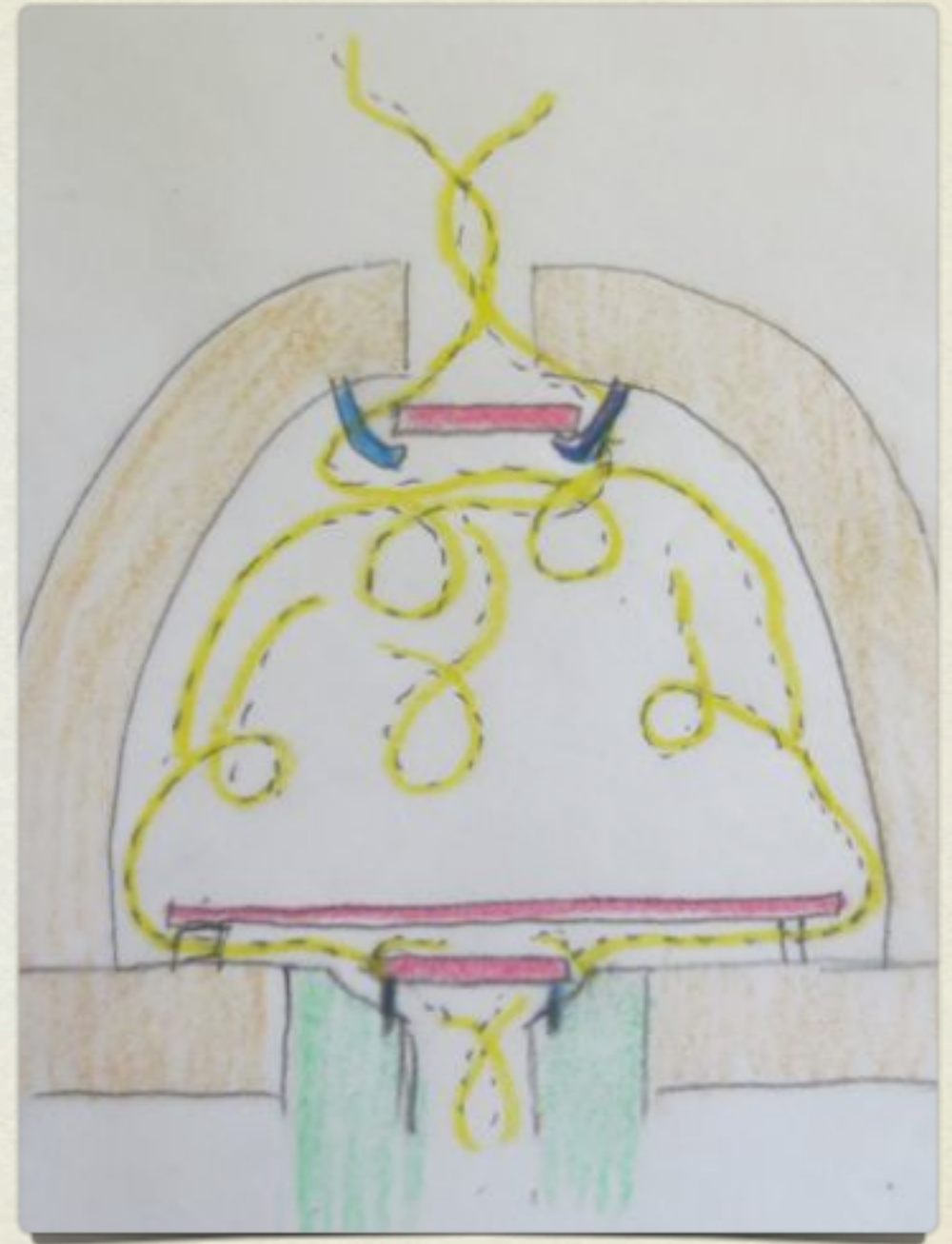
- Stove should have a tall combustion chamber for cleaner combustion.
- Make an air-tight connection between stove and oven so cool air is not drawn in.
- Coniferous wood has pitch, deciduous wood burns cleaner.





# OVEN PRINCIPLES

- Deflector plate at the top helps hot gases transfer more heat before exiting.
- Baking surface must allow hot gases to flow unrestricted into oven.
- Deflector plate at bottom diffuses heat to keep food from burning.













# OVEN SHAPE

- The right height and shape of your oven can improve your baking.
- Pizza ovens need to be a shorter height to toast the cheese nicely.
- Bulkier food items such as large loaves of bread or meats may require more oven height.



Dili, East Timor





Las Marias, Puerto Rico



# TEMPERATURE CONTROL

- Oven temperature is easily controlled by quantity and size of wood.
- Pull out wood to decrease temperature. Add wood to increase temperature.
- Pushing wood in too fast creates smoke. Meter the wood in.





# NO CHIMNEY!

- Chimney not required
- When you add a chimney to an oven the draft is increased and too much air is drawn through the oven.
- Excess air cools the oven, preheat time gets longer and fuel use greatly increases.







Central Plateau, Haiti

# COVER ME!

Mud Ovens must be protected from rain.



# TLUD OVEN

- Marc Ayats Plana of Spain built a Rocket Oven.
- Later he switched to using a TLUD stove because it burns cleaner and does not require periodic “feeding the fire.”
- See report at:  
[www.cuinessolars.jimdo.com](http://www.cuinessolars.jimdo.com)





# PLASTIC ROOFING TILES



- In Haiti, Eddy Fowler-Linder is using Rocket Ovens to turn recycled plastic into durable roofing tiles.



# BBQ ROCKET OVEN

- Flip & Jon recycled a used BBQ into a portable oven.
- It not only bakes muffins and pie, but the low height of the oven dome bakes terrific pizza.
- Sample fresh baked naan bread Sunday afternoon.



Aprovecho Stove Camp, 2014





Les Cayes ovens  
Haiti



Unnamed Middle  
Eastern country





NewDay mold  
Haiti



Eco Selva oven Peru



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- New oven designs

