

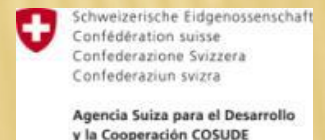
Vertical Shaft Brick Kiln VSBK

Workshop on:
Science and Policy of Short-lived Climate Forcers

September 9-10, 2011 Mexico City

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SWISSCONTACT



CONSTRUCTION SECTOR IS THE LARGEST CONTRIBUTOR TO CO₂ EMISSIONS IN INDIA



Brick Production

- ~300,000 kilns worldwide
- Brick production is highly concentrated in four countries (~75% global production):
 - China 54% ~700-800 billion/year
 - India 11% ~140 billion/year
 - Pakistan 8% ~100 billion/year
 - Bangladesh 4% ~ 50 billion/year

Energy Consumption in Brick Production

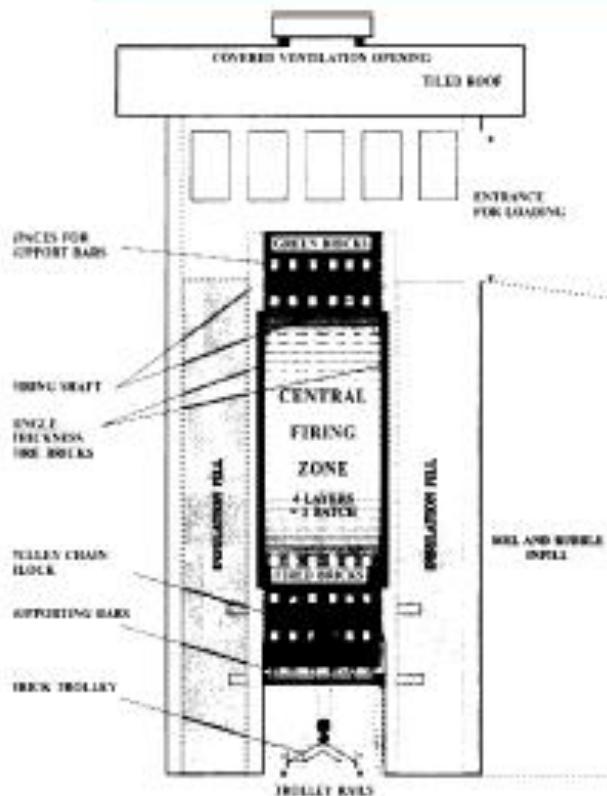
Clamps
Brick = 4.5 to 8.0 MJ /

Movable Chimney
(BTK) = 4.2 MJ / Brick

VSBK = 1.80 MJ/ Brick



Vertical Shaft Brick Kiln (VSBK)

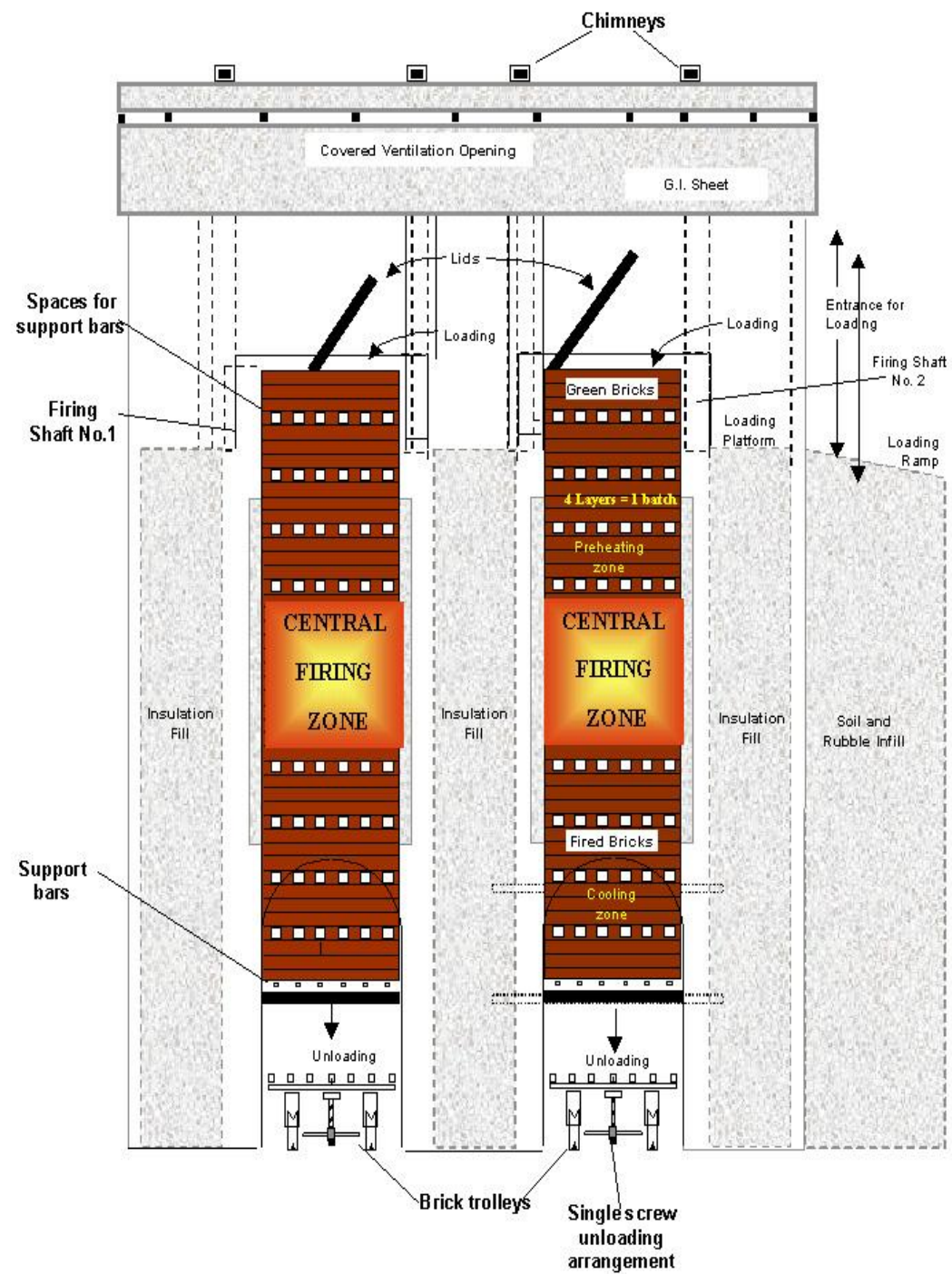


- Loaded at top, bricks removed from bottom
- High efficiency, low emissions
- Kiln of choice for aid agencies
 - India, Nepal, Pakistan, Vietnam



Schematic of single shaft VSBK & a four-shaft VSBK in Kathmandu

Schematic Diagram of VSBK







WOOD FIRED VSBK ECUADOR



- ✘ Vertical Shaft Brick Kiln fired with wood or other biomass (EcoSur kiln)

EMISSION DATA

Colombia emission norm for new plants
microgram/m³

PM

SO₂

NO_X

50

500

500

VSBK reported (Nepal)

325

36

nr

FUTURE OF WOOD FIRED VSBK

- ✘ NEED FOR FURTHER RESEARCH AND DEVELOPMENT
- ✘ R&D in the area of local brick production is still in a very early stage. Having achieved good results with the Latin American version of the VSBK is a good start.
- ✘ Need for better documentation, energy efficiency and emissions

COMMENTS

- ✘ VSBK is energy efficient
- ✘ VSBK can not produce thin wall products such as hollow brick and tiles
- ✘ The continuous operation requires managerial skills and good organisation
- ✘ Investment may be behind the possibilities of small enterprises

Thanks