

Shelter Technical Working Group Meeting – CASH

Presentation on the Brick Sector

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Towards cost effective, social and environment friendly approaches

About Bricks.....



.....the most common building material

Overview of Brick Industries

- 800 brick kilns in operation
- 110 brick kilns within Kathmandu Valley
- Annual brick production is 3.2billion
- Estimated investment in the sector is ~USD 36million
- One of the largest employment generating sectors employing approximately 175,000 workers

Major Firing Technologies



Clamp



Moving Chimney BTK (MCBTK)



Fixed Chimney BTK & Zig-Zag



VSBK

Brick Size and Quality

According to Nepal National Building Code (1994)

- Brick Size: 240 x 115 x 57mm
- Tolerances: -10mm on length; -5mm on width and +/- 3mm on thickness
- Crushing Strength: 35kg/cm²

Practice

- Brick Size: Varies
- Length: 230 -250mm; Width: 110-120mm; Thickness: 50-75mm
- Crushing Strength: generally above 35kg/cm²

Post Earthquake Scenario



300+ brick kilns are damaged

Post Earthquake Scenario

- 105 kilns within the valley are damaged
- Production capacity ~ 800 mil
- Four casualties with brick kilns
- 70% kilns need complete rebuilding
- Brick production came to complete halt
- Brick sales have shrunk



Future Outlook

- Demand of bricks are projected to increase
- Production of bricks has decreased
 - *Erratic rainfall*
 - *Loss of production period*
- Bricks price will most likely go high
- Inflow of bricks from Terai to Hills/Mid-hills
- Labor shortage in the next production season
- Market for other building materials are likely to increase

Re-Building Brick Kilns

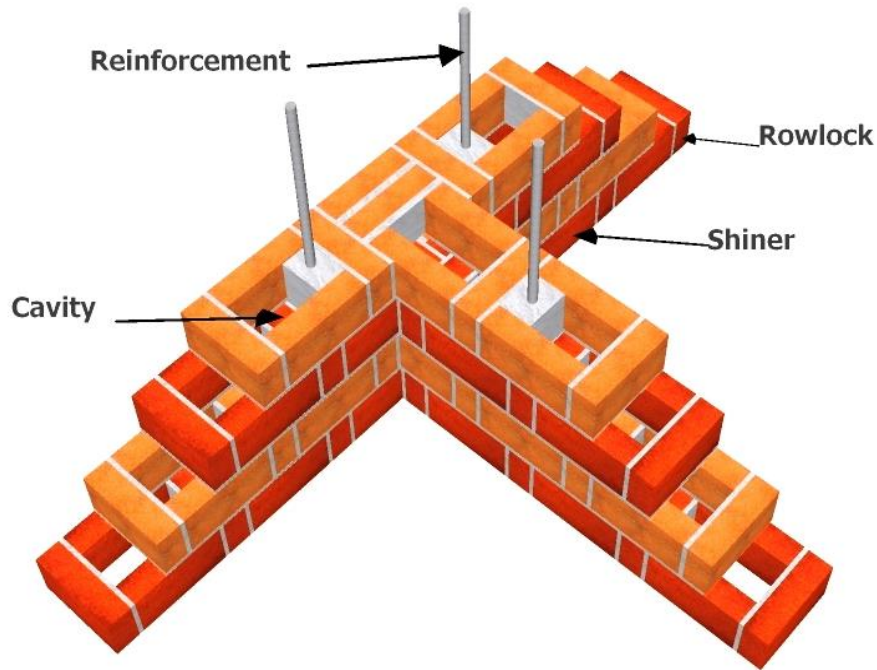
Design work to rebuilt it right initiated

- Energy efficiency
- Environmental performance
- Seismic consideration
- Worker friendly

Policy study to initiate soon

Training/supervision packages for kiln construction

Rat Trap Bond



- *35% less brick used*
- *50% less mortar used*
- *20% less wall construction cost*
- *Better insulation*

Thank You...