Housing Recovery and Reconstruction Platform (HRRP)
15 November, 2016

Stabilizing Weak Masonry for Schools and Houses:

An approach to Rubble Masonry in Mud Mortar Construction in Earthquake Areas

By

Randolph Langenbach

Bam, IRAN earthquake, 2002

Bam, IRAN earthquake, 2002

- Destruction in just 12 Seconds
- Buildings that were untouched in 150 years survived.

- Destruction in just 12 Seconds

- Buildings that were untouched in 150 years survived.

- The thicker the wall, the more likely it collapsed.

- TERMITES? !

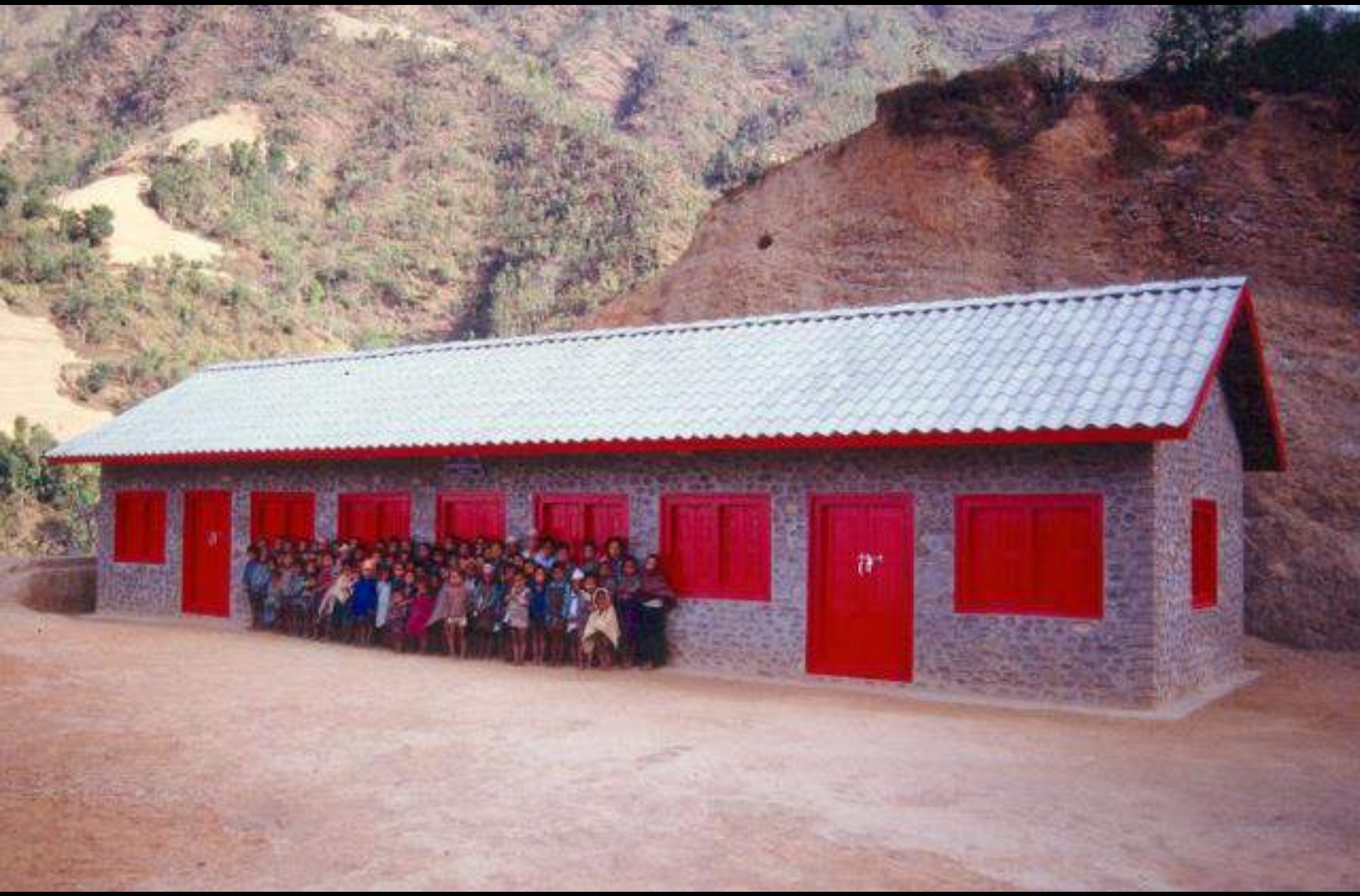
G4

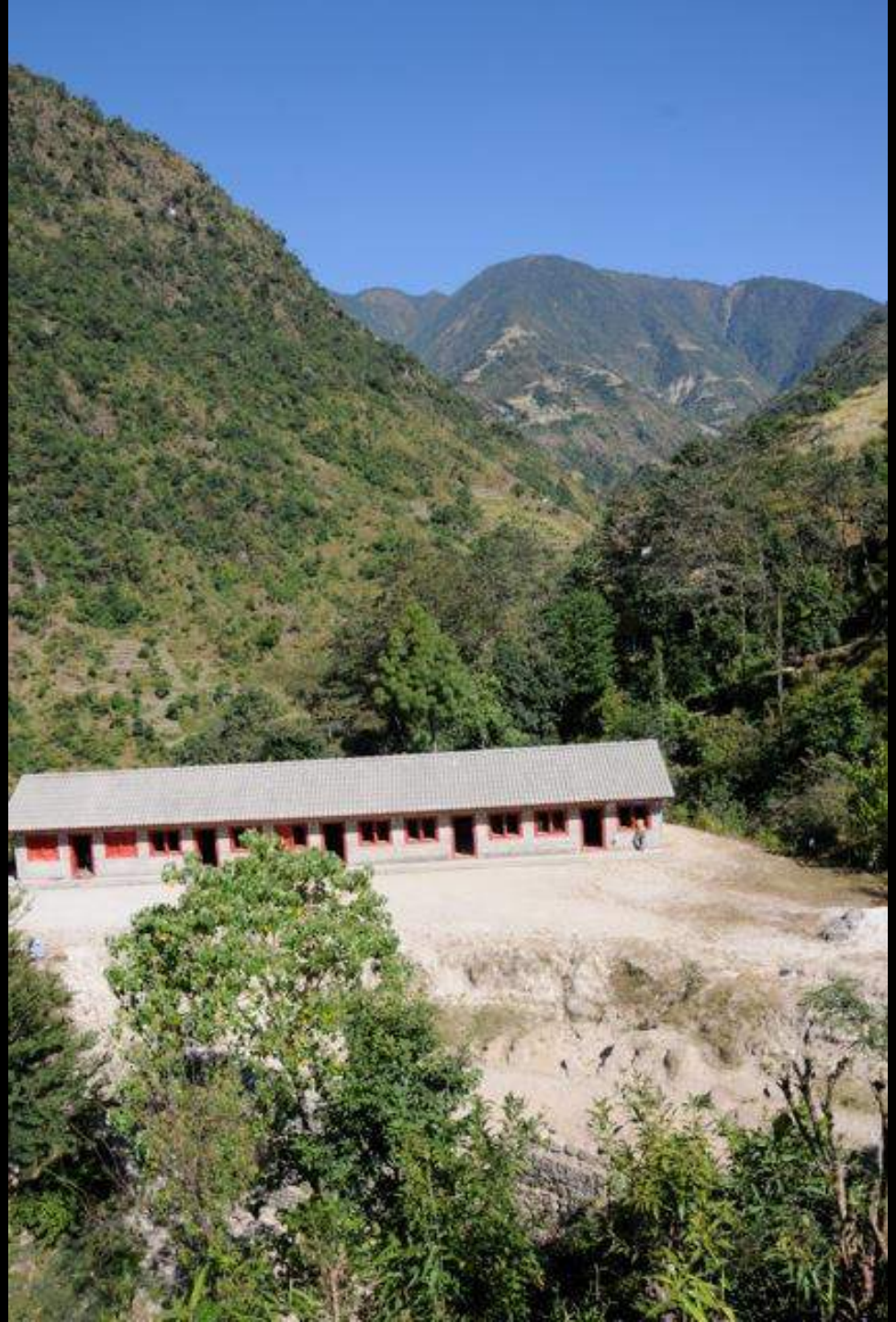
The 2015 earthquakes in Nepal

Nepal, 2015

dZi.org

dZi.org





School with RC Bands, Sangachok, in Sindupalchok

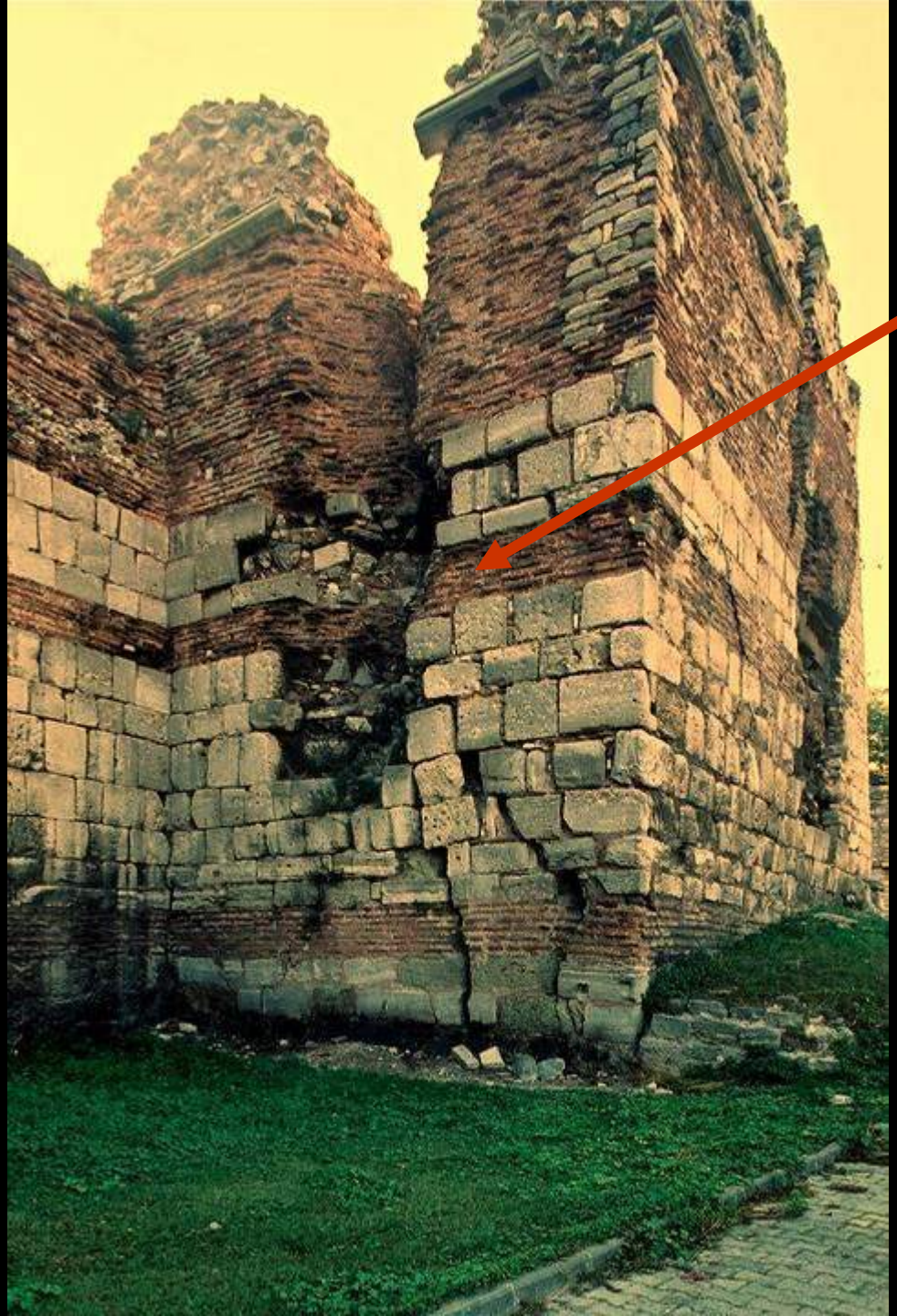
Photos from the web

CENTRO
STAMPA SERVIZI

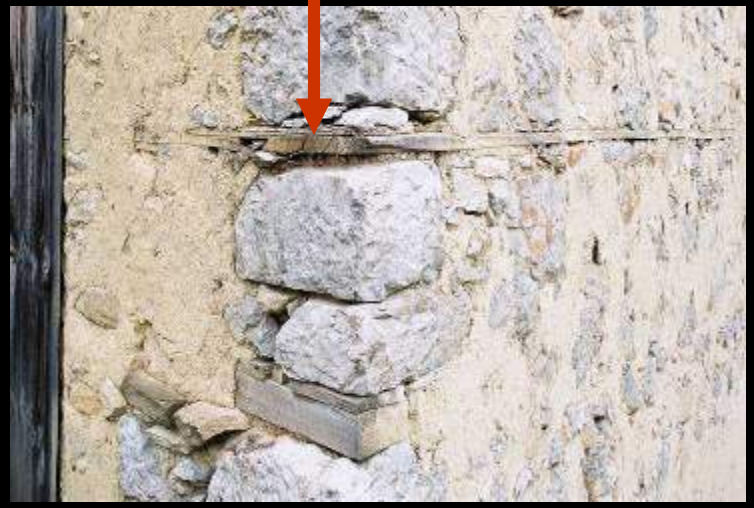
Amatrice, Italy after 24 August 2016 earthquake

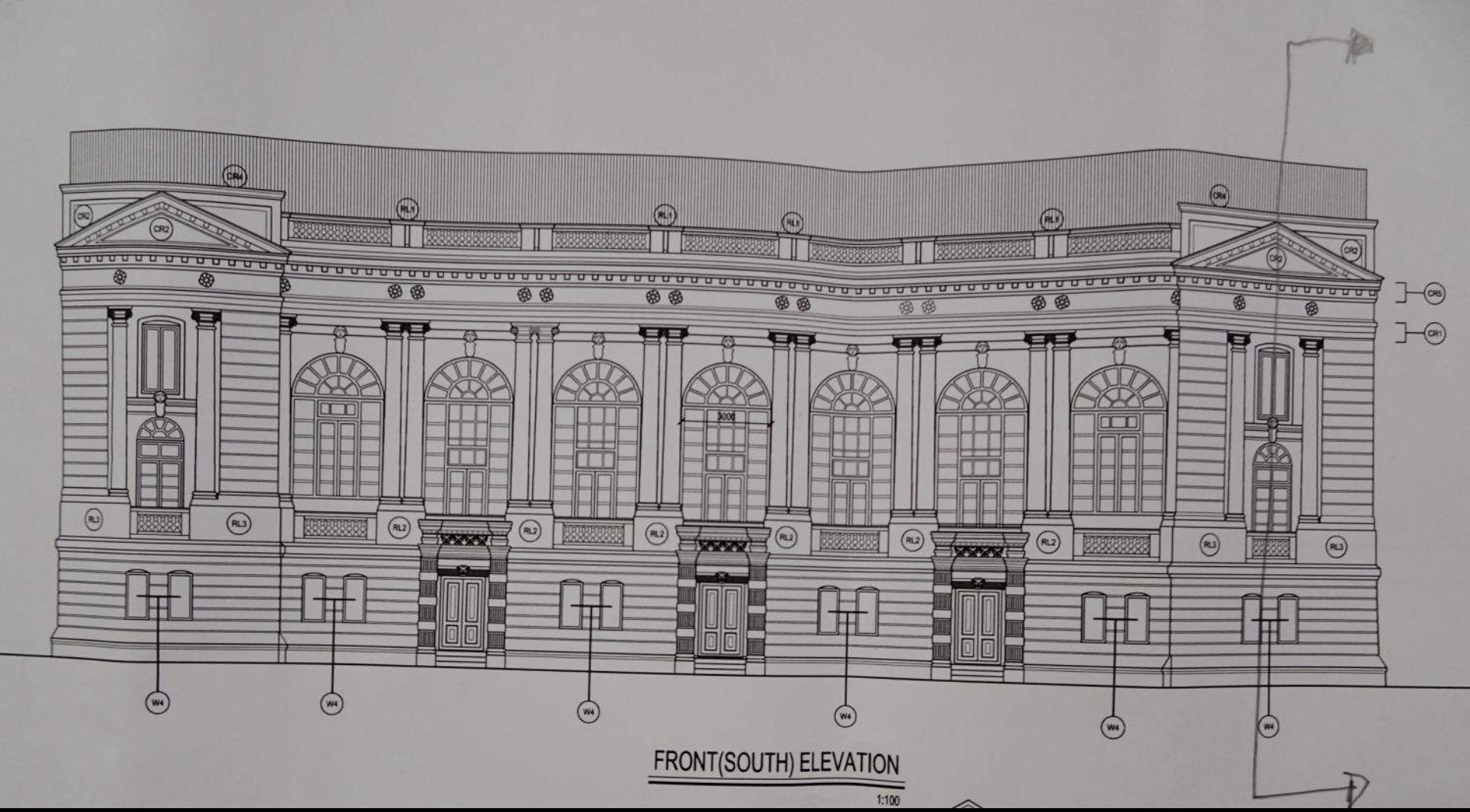
PARK CAFE

Amatrice, Italy after 24 August 2016 earthquake



HATIL – a term used for the horizontal bands in masonry either of wood or of masonry (usually brick).





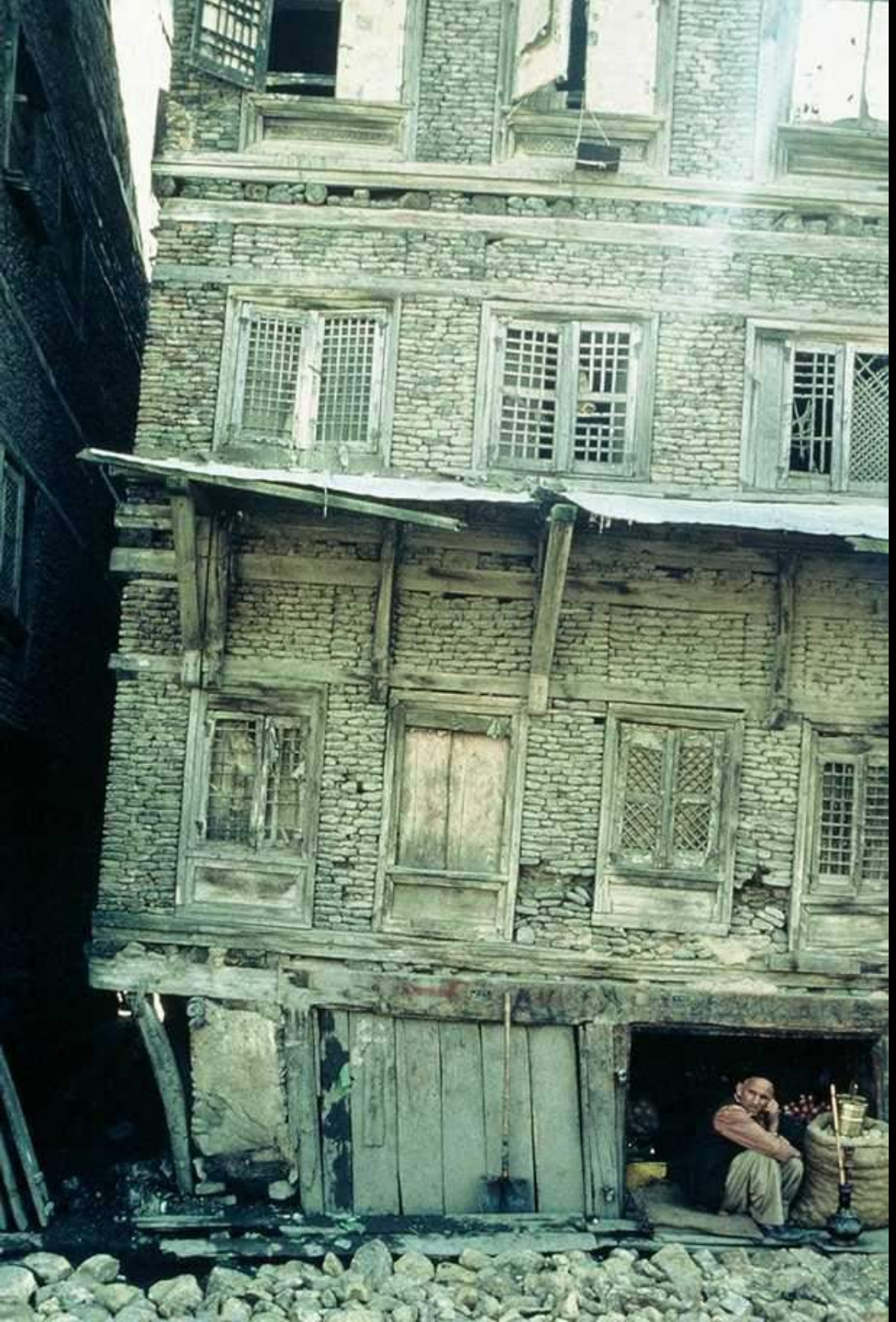
FRONT(SOUTH) ELEVATION

1:100

SRINAGAR, KASHMIR

dhajji dewari

“patchquilt wall” in old Persian



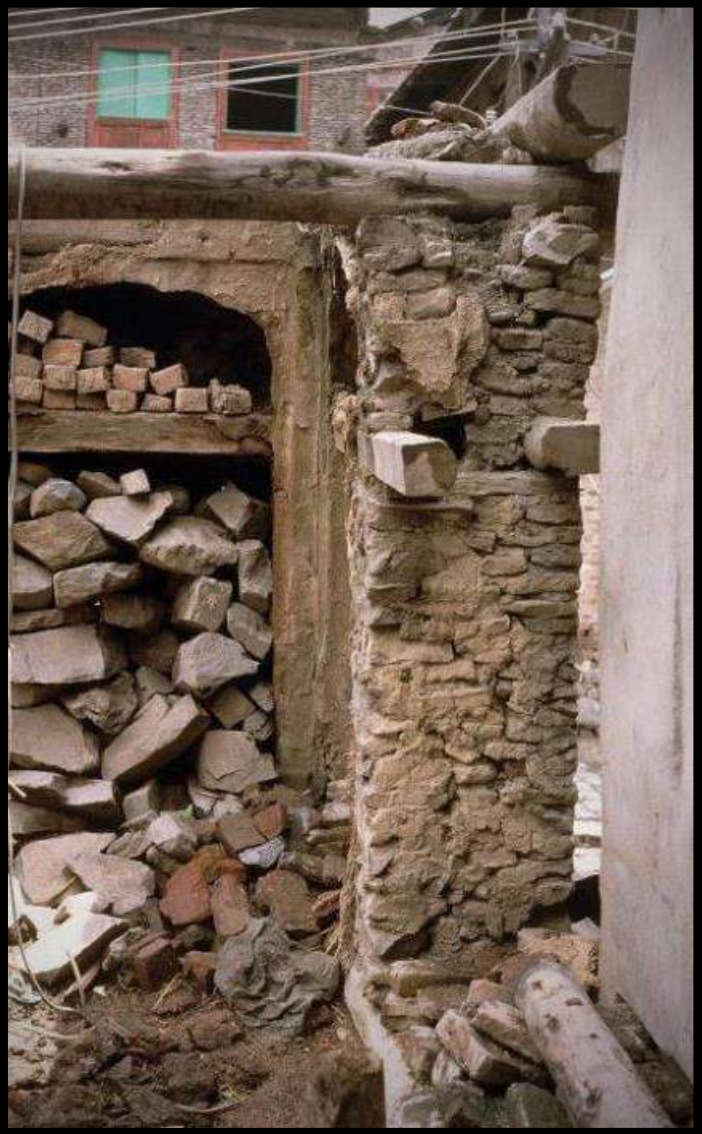
dhajji dewari

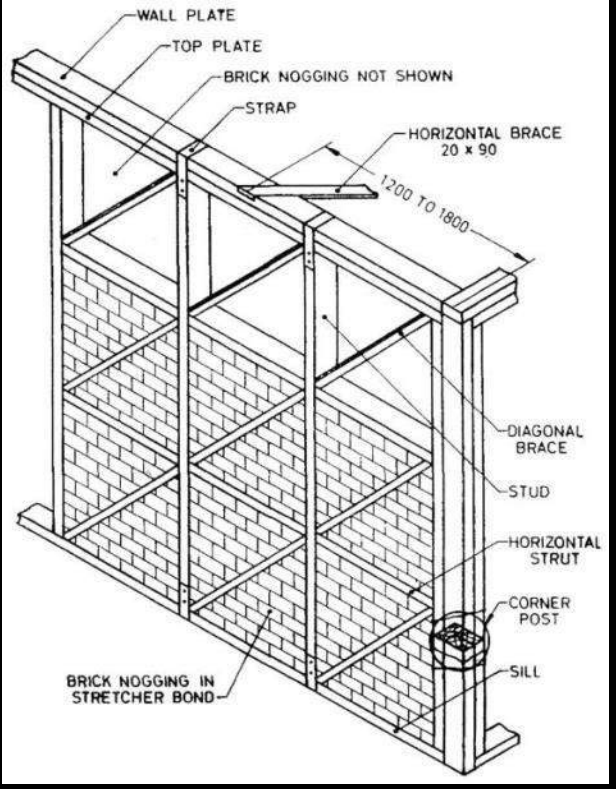
“patchquilt wall” in old Persian

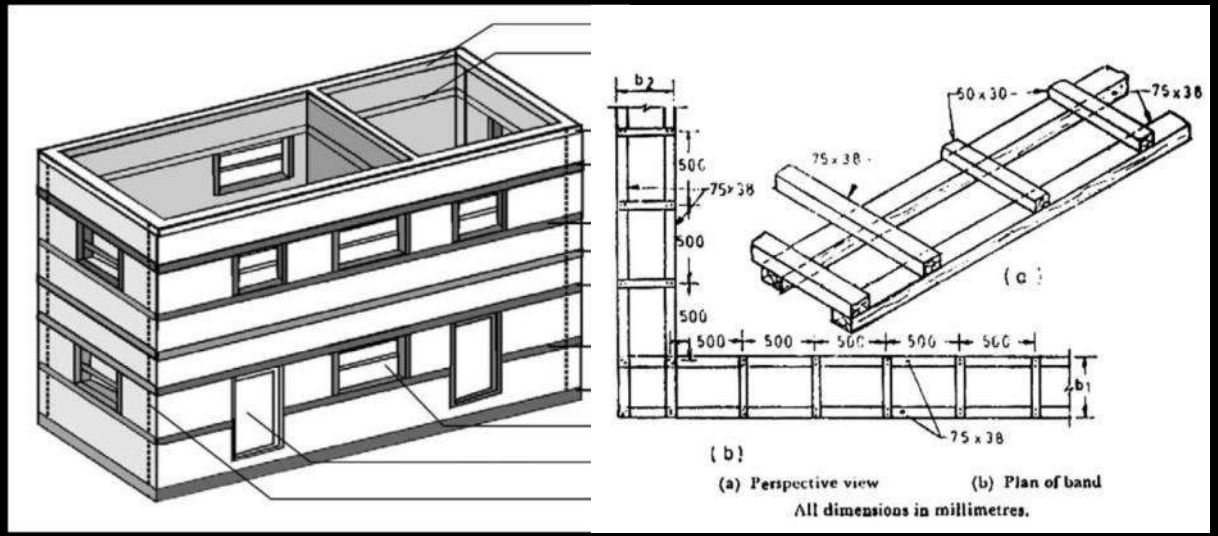
Taq

(in Pakistan: *bhatar*)

Timber-laced masonry bearing wall construction

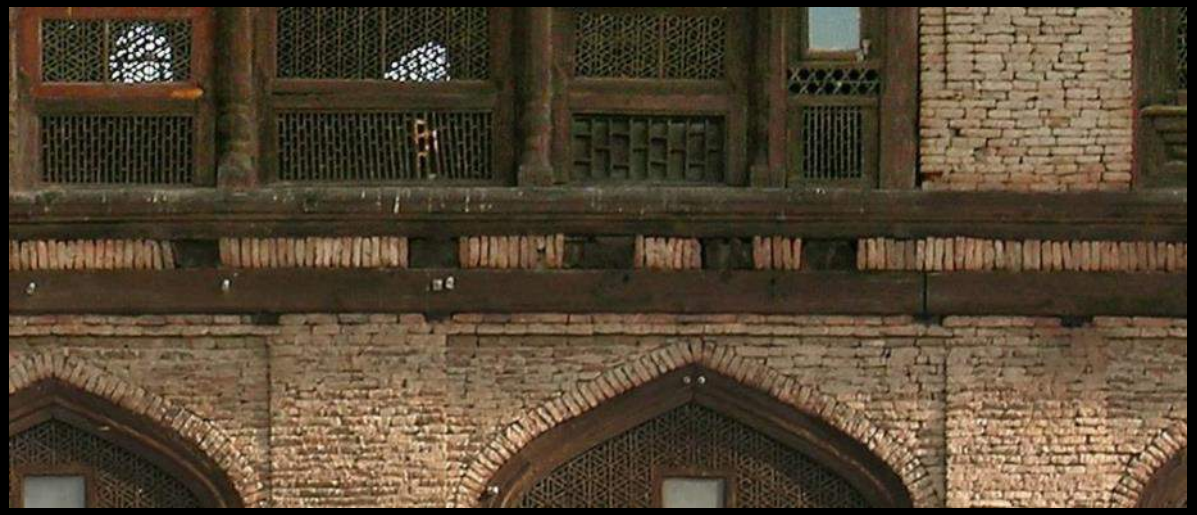




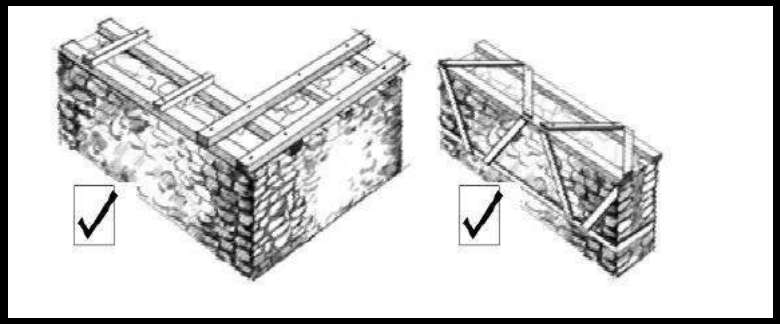


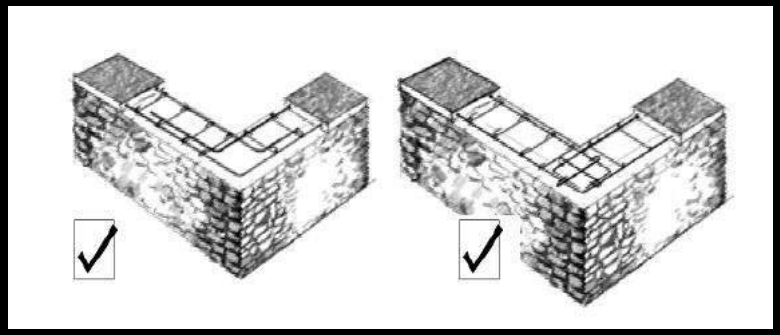
(a) Perspective view (b) Plan of band

All dimensions in millimetres.



Nepal, 2015





Timber Bands?

…But there is a shortage of Timber?

Then how about Concrete?

…hand carried sometimes miles from the nearest road???

You have got to be kidding!

Then what else is possible?

What about - - - - "GABION BANDS"

Inspired by using a wire mesh that is commonly available for fences?

…or maybe better – polypropylene geo-grids.

'Bands' (ring beams)

not 'baskets'

PBS

NOVA

Search...

TOPICS

ANCIENT WORLDS

BODY + BRAIN

EVOLUTION

MILITARY + ESPIONAGE

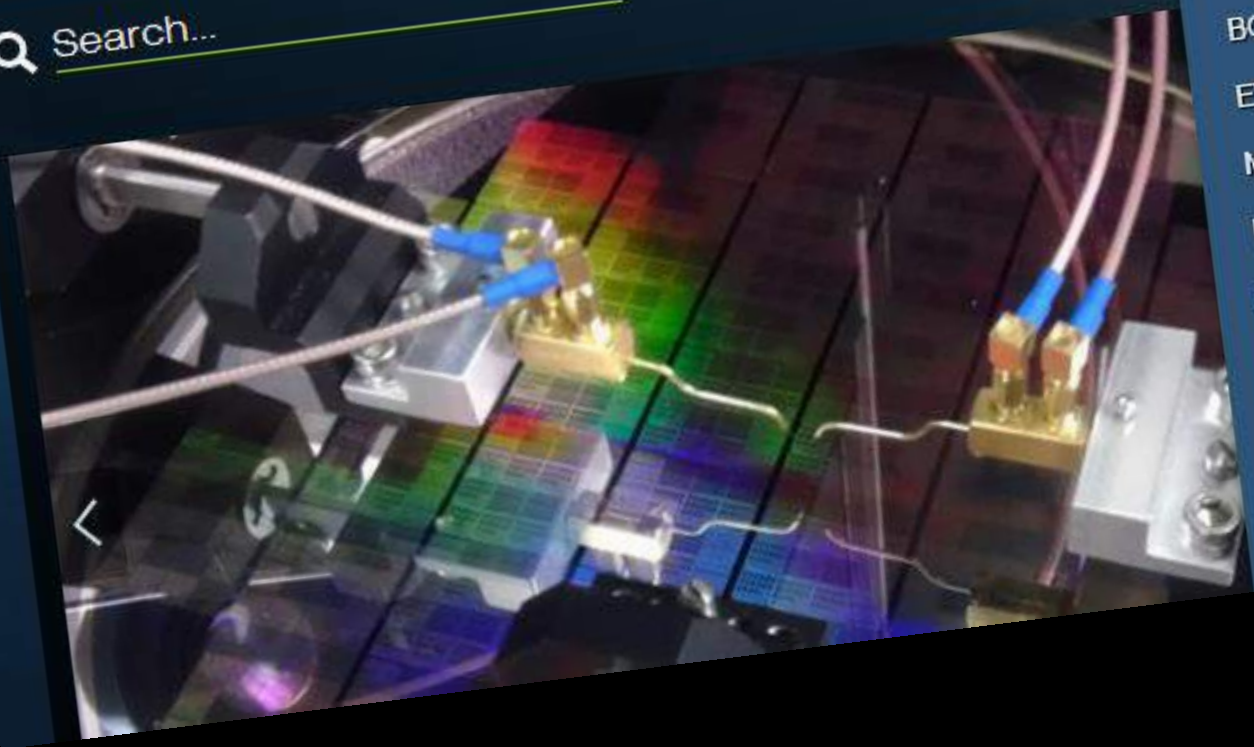
NATURE

PHYSICS + MATH

PLANET EARTH

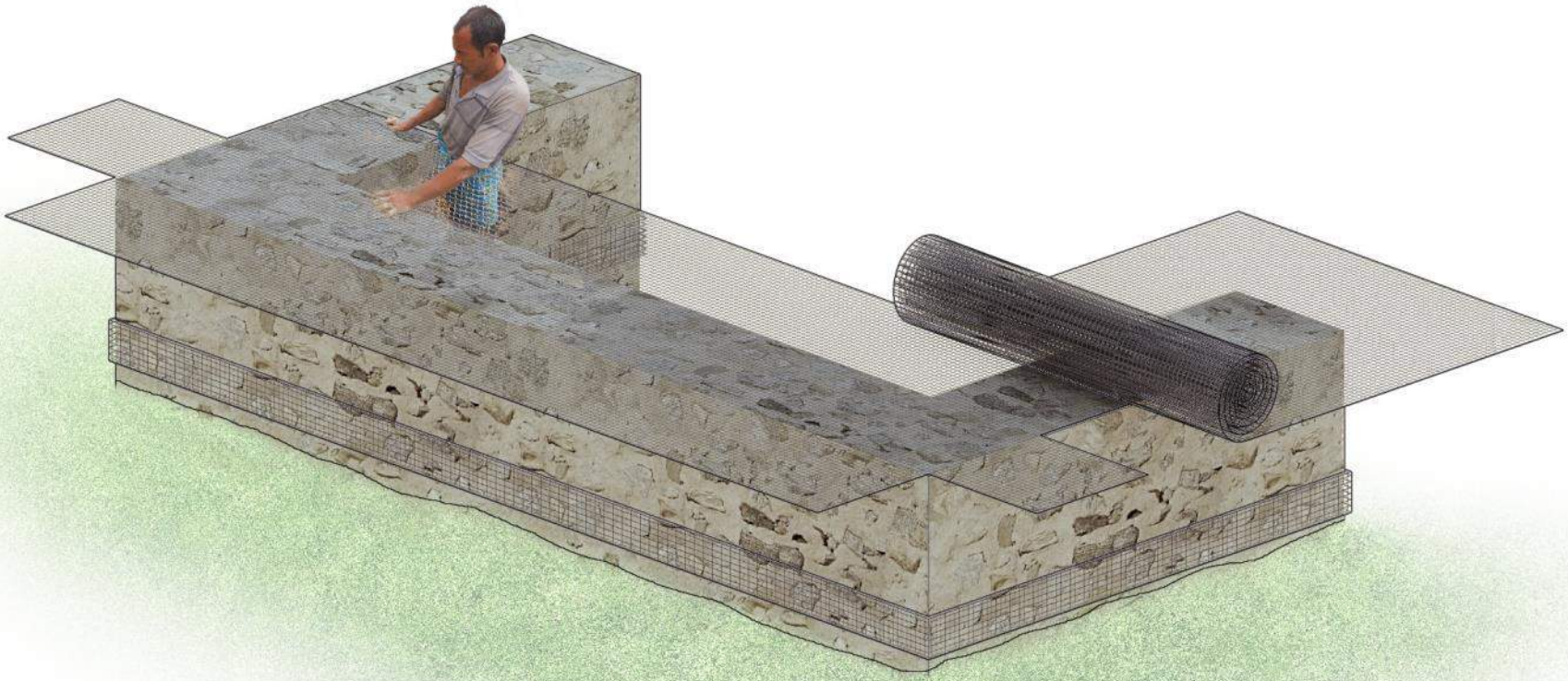
SPACE + FLIGHT

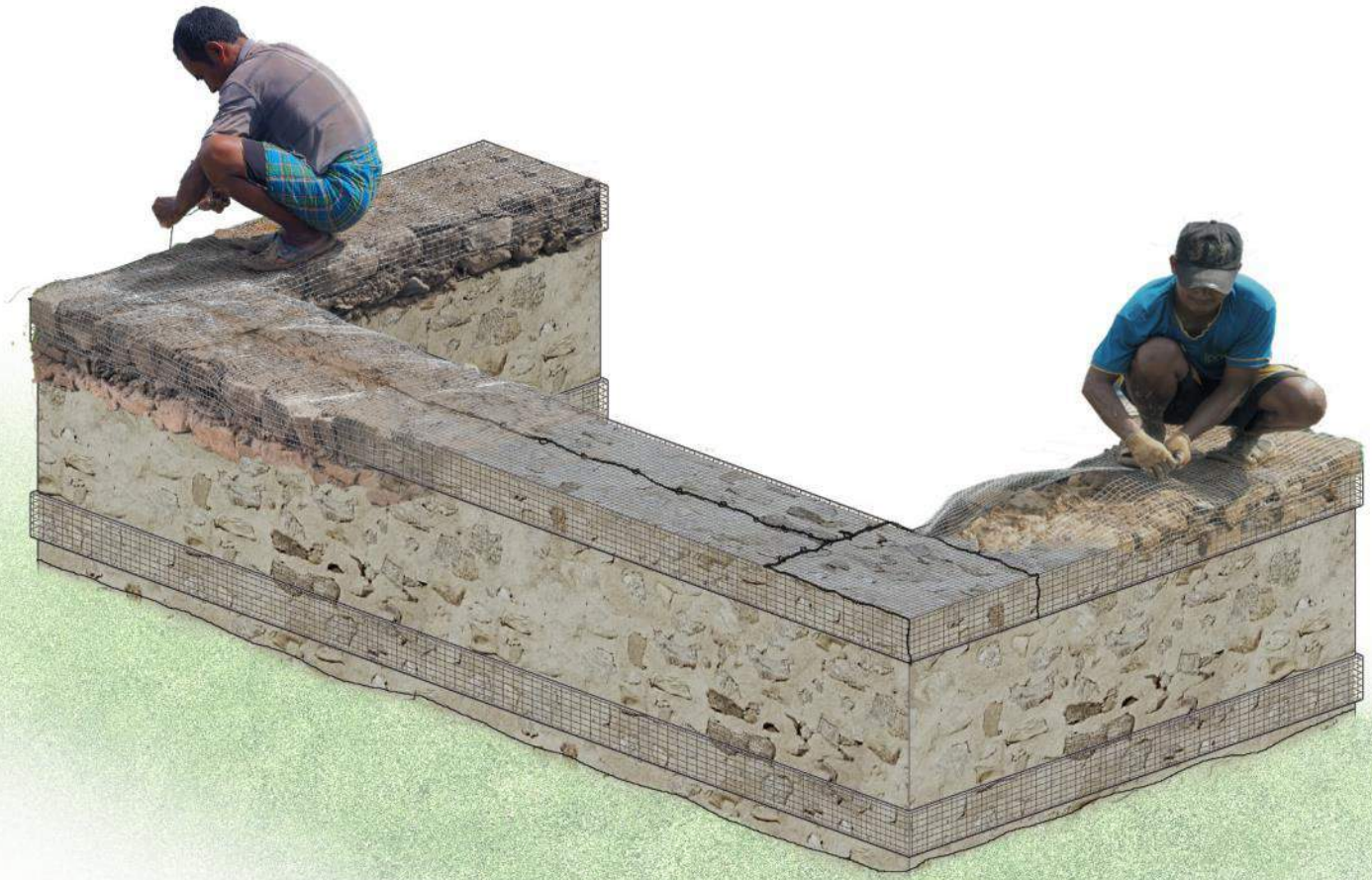
TECH + ENGINEERING



Sunar Family Farm, 2015

Sunar Family Farm, 2015





JM

Sunar Family Farm, 2015

NEPAL SCHOOL PROJECTS

Banakhu, Khavre District

NEPAL SCHOOL PROJECTS

Fran Lloyd, E.D.

Banakhu School, Khavre District

CHUPAR SCHOOL

John Vavruska

Namaste

!

www.conservationtech.com

www.traditional-is-modern.net