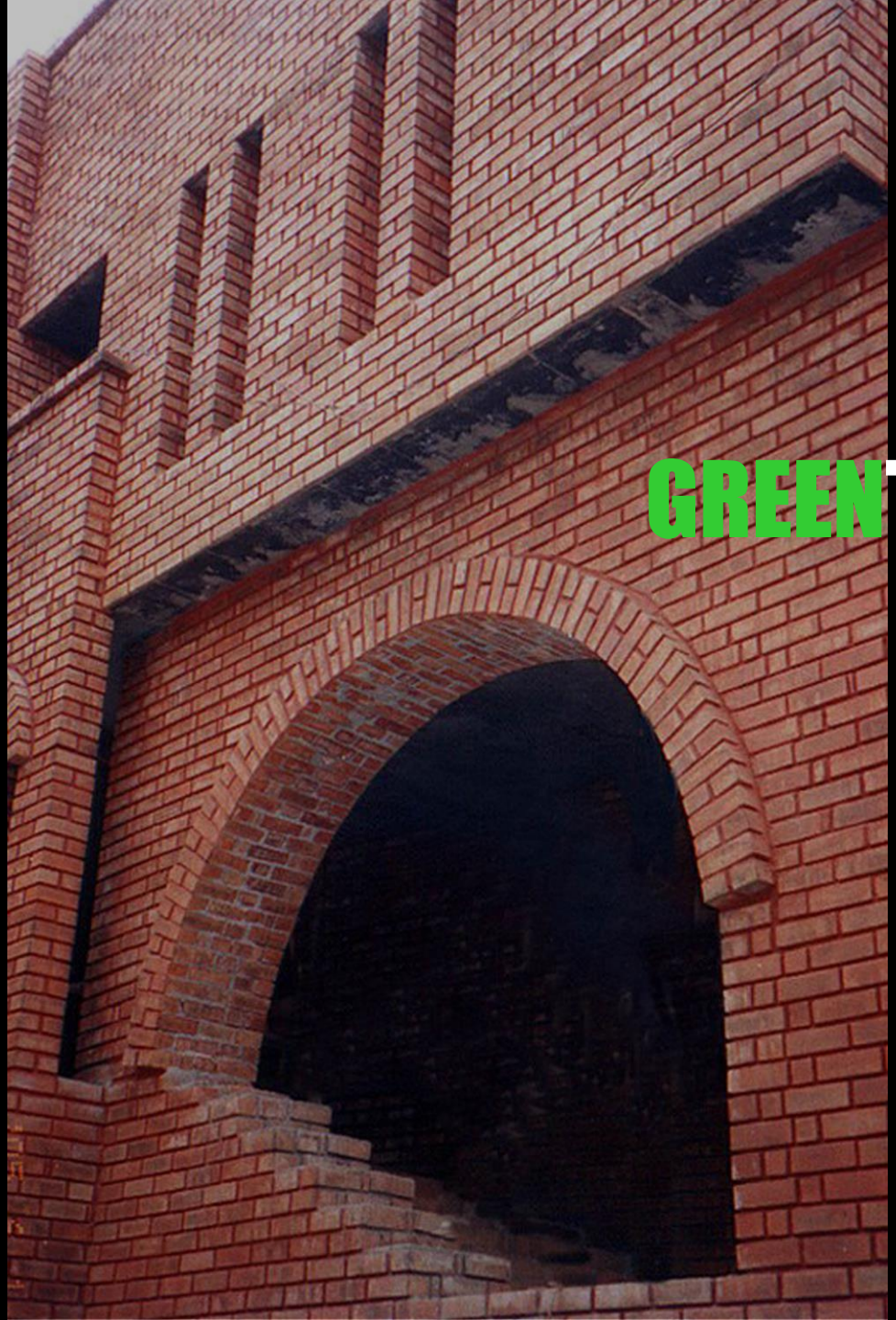

GREENTECH 2009

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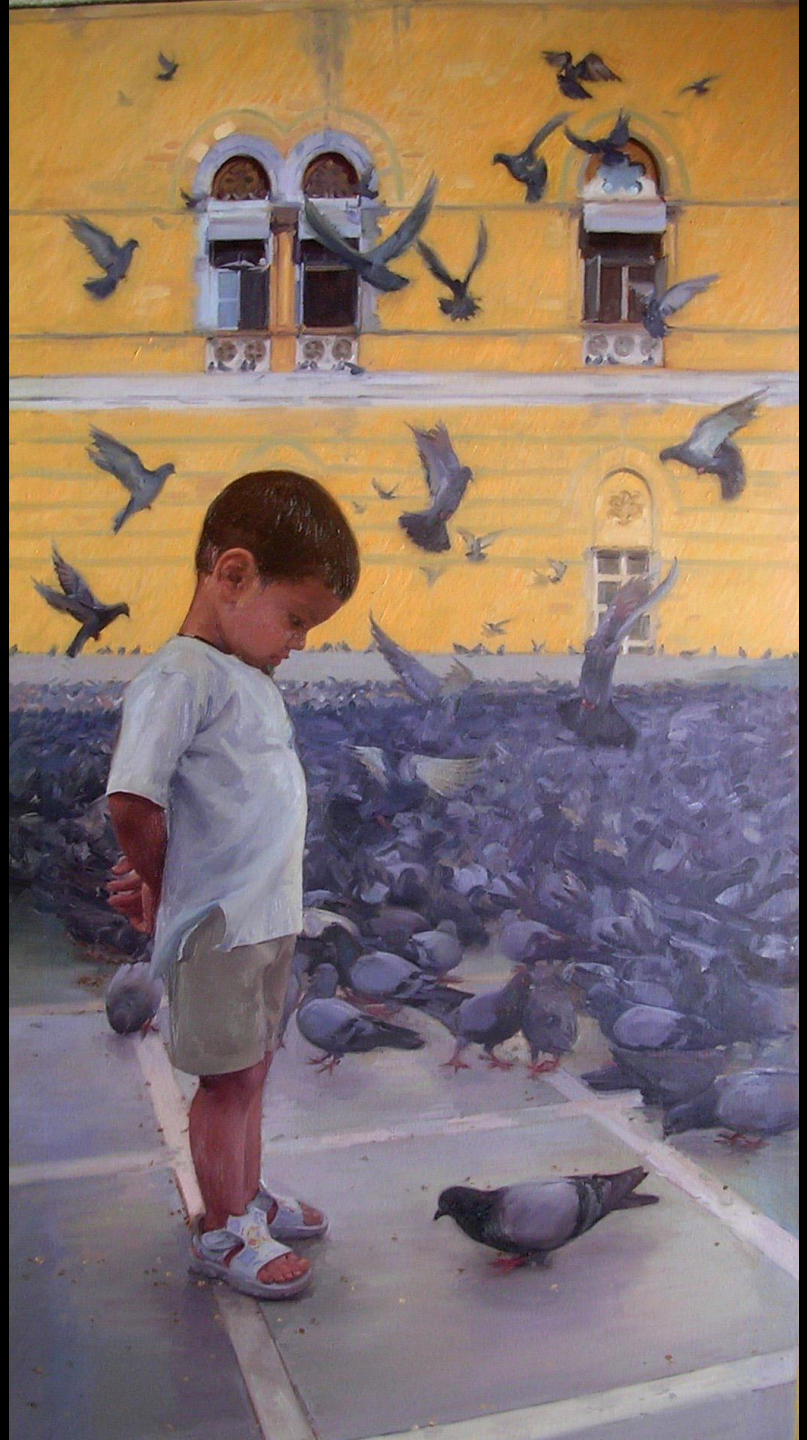
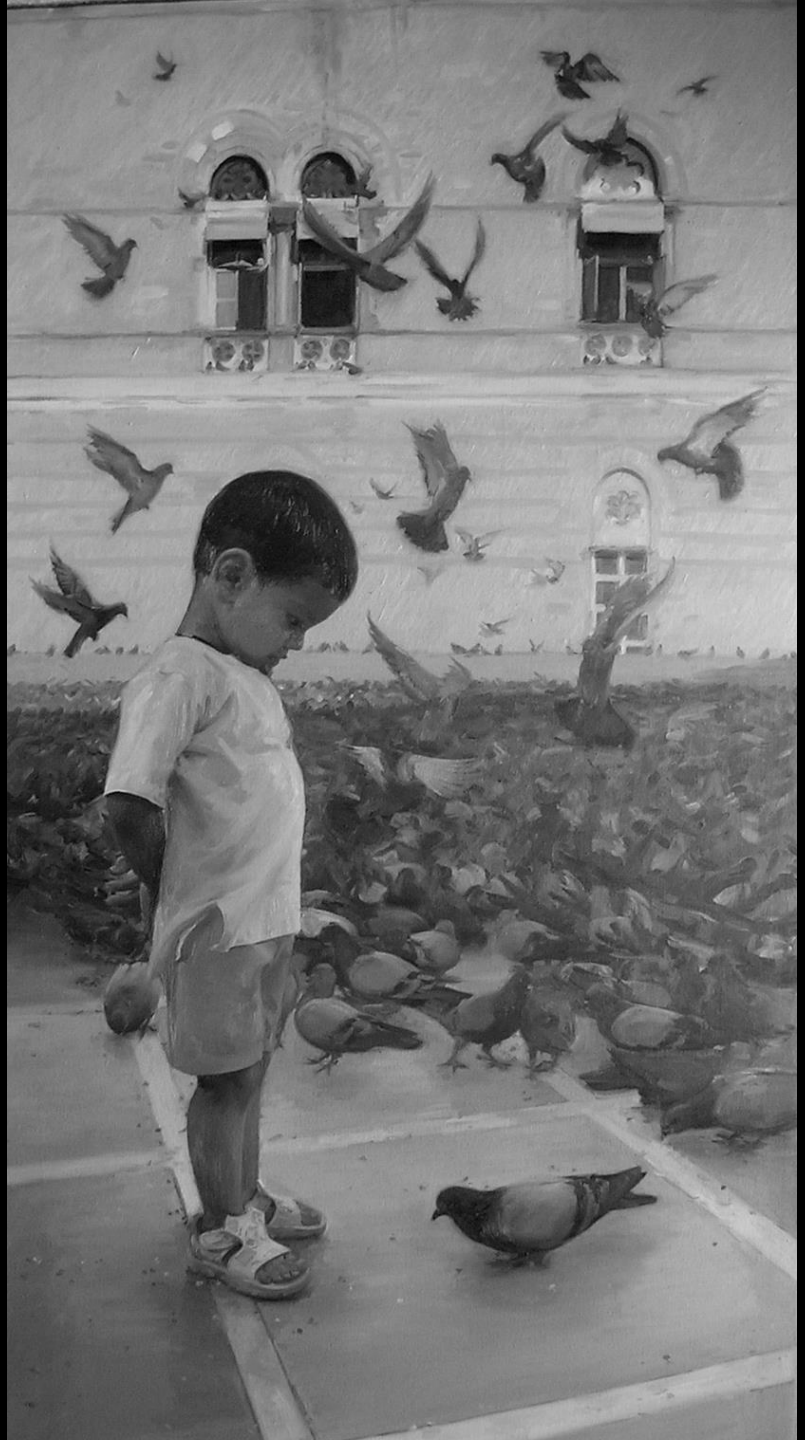


Our
Parents
Gave
Us
The
Childhood !

Are
We
Giving
It
To
Our
Children ?



Think of it!

It is the

first step

towards

green.

The

second step

is

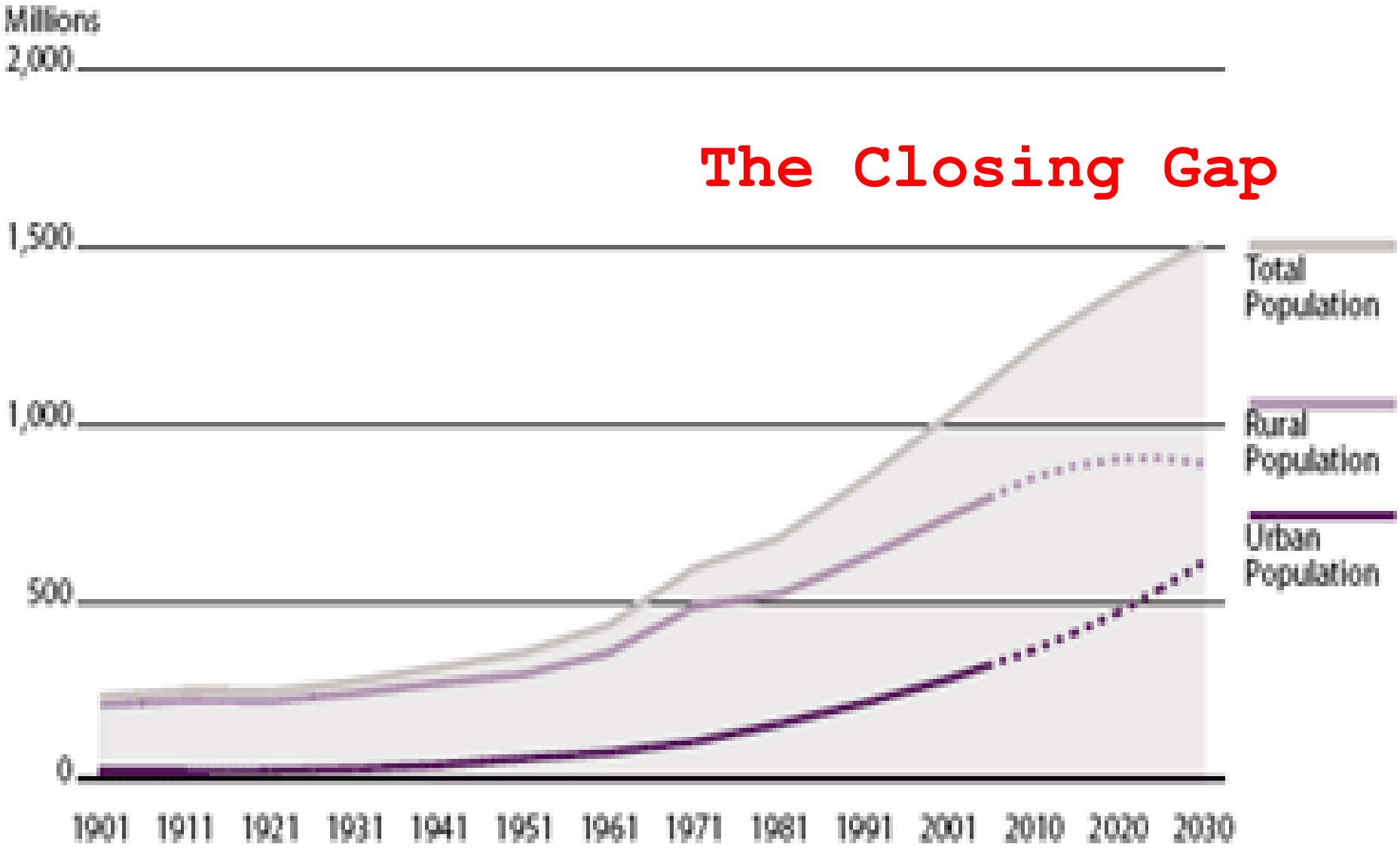
Turning

back

Towards

tradition

POPULATION GROWTH IN INDIA



The Closing Gap

is the only cause for the yellow belt pollution


As we know
The building industry
is the major cause
behind this
social & ecological imbalance

BUILDING INDUSTRY IN INDIA TODAY

Most of the building activity in India uses high energy consuming materials like RCC and glass.

The industry can not be blamed if architectural & engineering schools do not indulge much in propagating sustainability.

As a reflection of the nation’s economic principles, Indian architecture today is sending a wrong message.

Gandhiji's ideal house would use materials procured from within a radius of five kilometers and constructed with vernacular techniques.

It is disheartening that our post-independence architecture is so divorced from such ideals.

Our secular architecture is an imitation of the corbusian Chandigarh and other sectors including housing too are an attempt of aping the west.

The fact that such ignorance is coupled with a shocking negligence towards our climatic conditions is unfortunate.

Housing scenario

"Affordable shelter that is inadequate,
And adequate shelter that is unaffordable"

	EWS	LIG	MIG	HIG	TOTAL
Housing shortage in million as on 2007	21.78	2.89	0.04	----	24.71
INCOME Rs./Month	less than 3300	3301 to 7300	7301 to 14500	14501 & above	

Housing scenario

Could these people think of green when they are difficult to survive ? ? ?

	EWS	LIG	MIG	HIG	TOTAL
Housing shortage in million as on 2007	21.78	2.89	0.04	----	24.71
INCOME Rs./Month	less than 3300	3301 to 7300	7301 to 14500	14501 & above	

Housing scenario

26.7 % of the total poor in the country live in urban areas &

73.3 % in rural areas.

	EWS	LIG	MIG	HIG	TOTAL
Housing shortage in million as on 2007	21.78	2.89	0.04	----	24.71
INCOME Rs./Month	less than 3300	3301 to 7300	7301 to 14500	14501 & above	

This illiterate lower, middle & even upper class villagers generally blindly follows the city folk even though they have ample space.

Most of the people carry a misconception that a ‘pakka’ house is the one built with RCC.

The builders and even the architects have done little to change this since the RCC practice brings more profit or/and it’s a convention.

So we feel-

Rural Housing & Urban Housing/ building industry can not be solved by same equation.

Role of Energy in building construction

Total energy consumed in building industry can be categorized as-

- Embodied energy in building materials.
- Energy required for transportation.
- Energy utilized for maintenance during the life span of a building.
- Energy spent in demolition of the building at the end of its life.

Energy consumption in building materials

Material	Unit	Energy per unit , MJ	Type of Energy
Burnt brick	One brick	3.75-4.5	Coal/ Wood / Rice Husk
Stabilized mud block	Per brick equivalent	1.00	Electricity
Hollow conc. block	Per brick equivalent	1.32	Electricity
Cement	1Kg	5.85	Coal Electricity
Lime	1Kg	5.63	Coal/Wood
Lime + fly ash	1Kg	2.33	Coal/Wood
Steel	1 Kg	42.0	Coal Electricity
Aluminium	1 Kg	236.8	Electricity
Glass	1 Kg	25.83	
Sand	1 cu.m	206	Diesel
Marble	1 sq.m	200	Diesel
Mangalore tile	1 tile	5.0-15.0	Firewood/ coal

Total embodied energy in a building

Type of building	No. of storey	total embodied energy per 100 sq m GJ	Equivalent coal for 100 sq m ,T
R.C.C. framed construction with brick in fill wall	2	421	21
Load bearing brick wall R.C.C. roof , mosaic floor	2	292	15
S.M.B. walls , filler slab roof / floor , terracotta floor	2	161	8
S.M.B. wall , Reinforced tile work roof, cement floor	1	93	4.7

Cost of construction is always directly proportional to the total energy required for the building.

Onsite generation of renewable energy through solar power, wind power, hydro power, or biomass can significantly reduce the environmental impact of the building. But Power generation itself is the most expensive feature .

So Energy saving is the cheapest way of energy generation .

How would Architecture in its true sense contribute in such circumstances?

Reduced A/C loads? Reduced energy bills?

We began working with these questions when we decided to practice in rural areas.

The answers were sought in Gandhiji's dream India and hence the Laurie Baker's lessons.

Brick became a permanent companion and ‘don’t create a problem and then try to solve it’ became our motto.

We have experimented with techniques like filler slabs, jack arch roofs, brick arches, brick vaults ,domes, rat-trap bond cavity walls, etc. which are not only cost effective & energy efficient but also make buildings sensitive to the climate.


4″ Thick Brick Vault - Span 15′


4″ Thick Brick Vault
Span 15′

COMMUNITY

HALL

WITH

NEAT
BRICKWORK.

THE

OLD

TEMPLE

FROM

OUR

ARCHITECTURAL

FRAME

THE

ENTRANCE

STAIRS

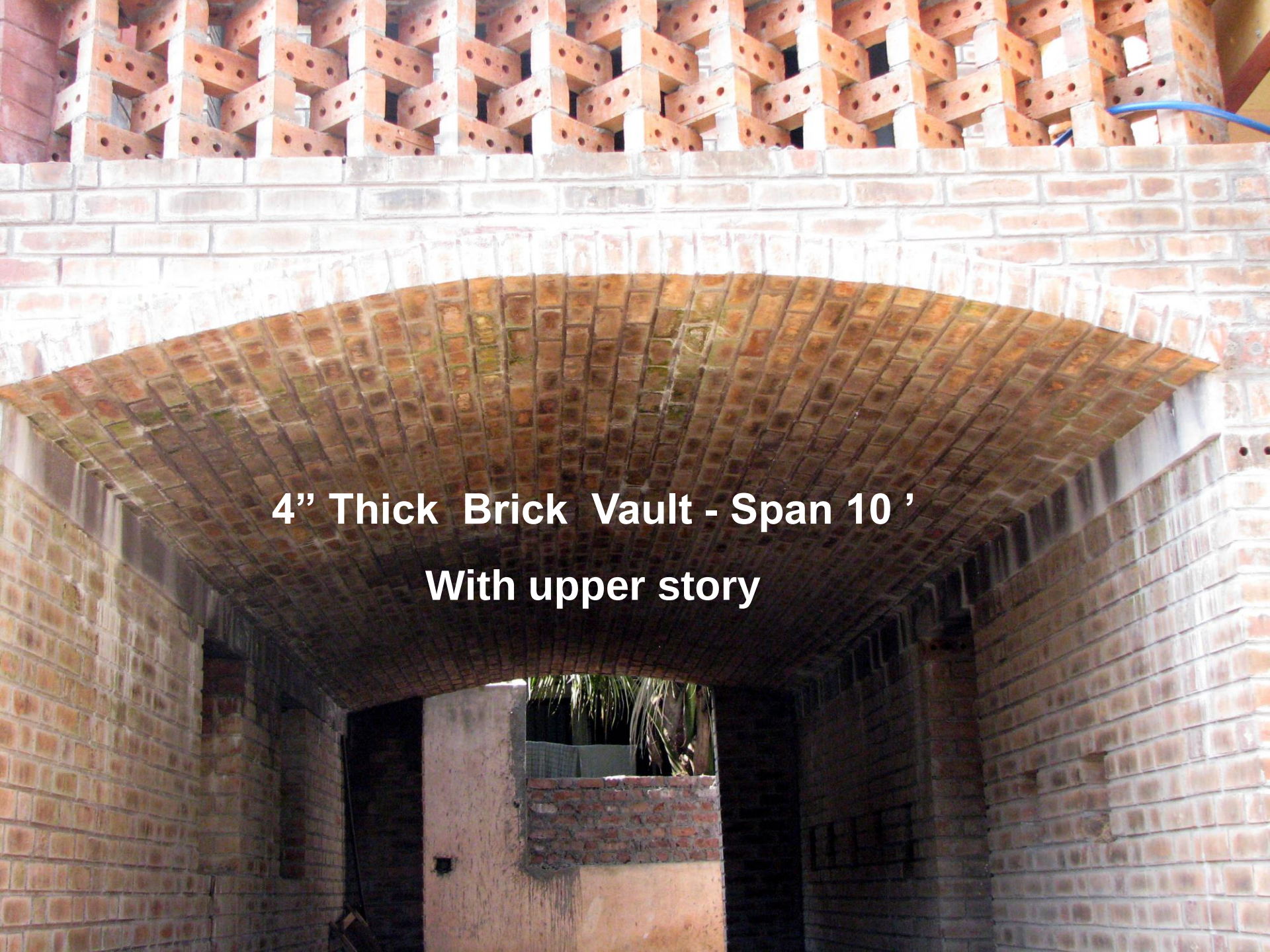
FROM

UP STAIRS


THE
OLD
TEMPLE
FROM
OUR
ARCHITECTURAL
FRAME

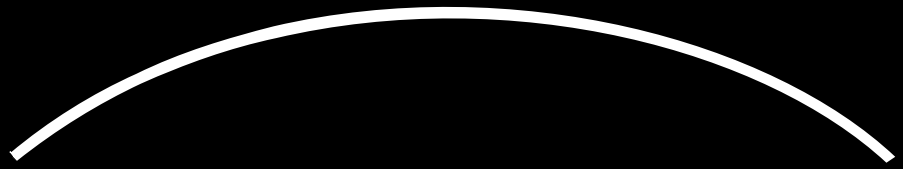

Year-2008
2000sq.ft
Cost
10lakh?


4” Thick Brick Vault - Span 10 ’
With upper story


4” Thick Brick Vault - Span 10 ’
With upper story

building industry Today

Line of magic



It is the most economic
way of becoming green

Today when we are turning our backs to traditional architecture - a science evolved out of years of cultivation and common sense of dealing with the climate;

we at 'ABHA DESIGNS' are trying to learn from it by making a conscious choice of working in small towns and implementing traditional techniques.

Lets

Become

green

from

heart

THANKS.

PHOTOGRAPH - TWIN HOUSE AT ISLAMPUR