

Can Architecture Matter?

GREEN ARCHITECTURE DAY

April 5th 2014

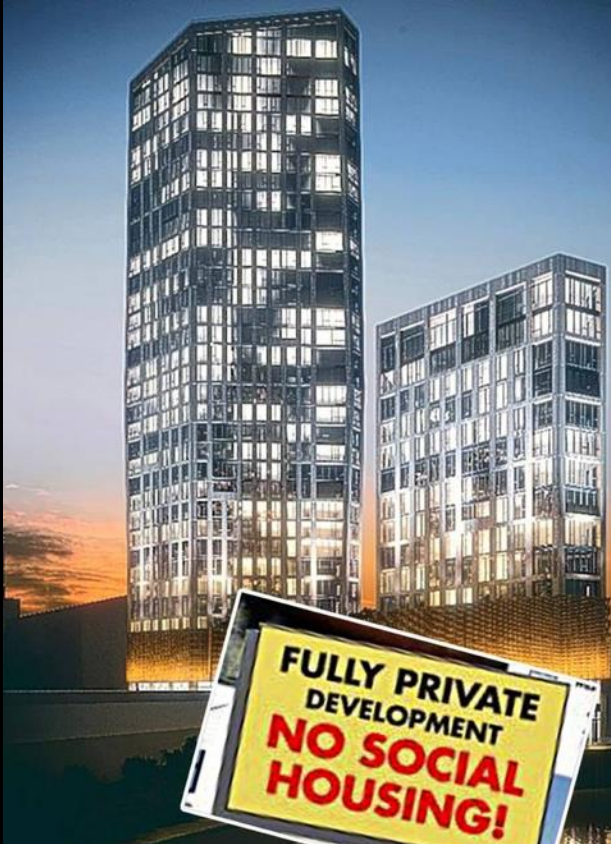
Presented by Duncan Baker-Brown RIBA FRSA
Senior Lecturer University of Brighton

What Architecture Can Do





Now back to 2013 UK



London
**Evening
Standard**

The hidden consequences of Architecture



Series: Modern-day slavery in focus

Qatar World Cup construction 'will leave 4,000 migrant workers dead'

Exclusive: International Trade Union Confederation claims about 12 labourers will die each week unless action is taken

Robert Booth

theguardian.com, Thursday 26 September 2013 13.08 BST

 Jump to comments (613)



Link to video: Qatar: the migrant workers forced to work for no pay in World Cup host country

Managing resources

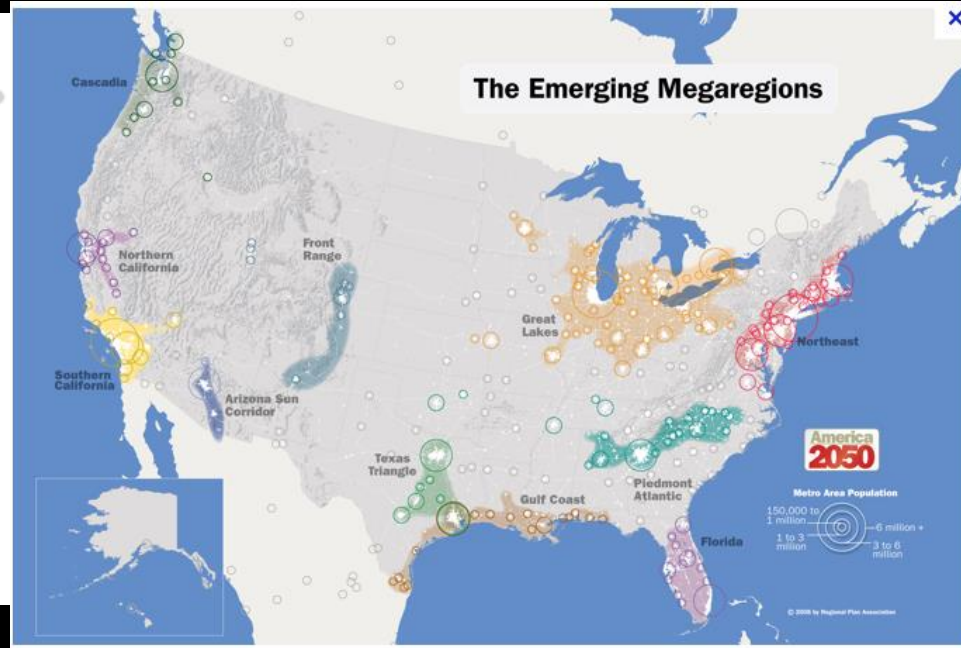
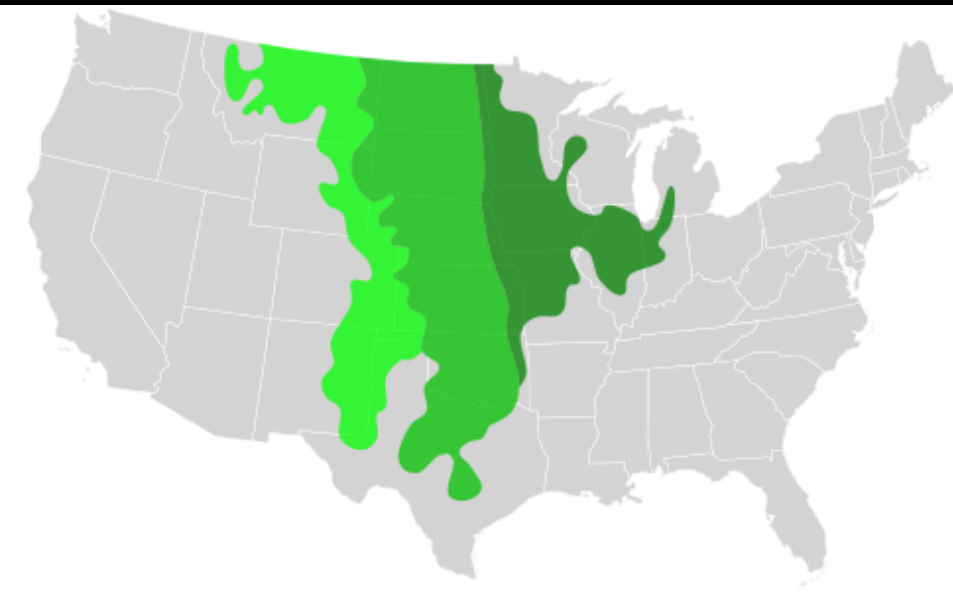


MANAGING RESOURCES



Part of the last herd of wild, American Bison. This vintage photo by L.A. Huffman, published 1913, had the caption of "1880 Northern Montana". Historians estimate there were less than 300 wild buffalo in all of America by that date. Still, they were hunted until the last 23 individuals were found hiding in the Pelican Valley area of Yellowstone NP in 1900. It is from those surviving animals that today's Yellowstone herds of 3,700 descended!

MANAGING RESOURCES



The Great Plains v's MegaCities

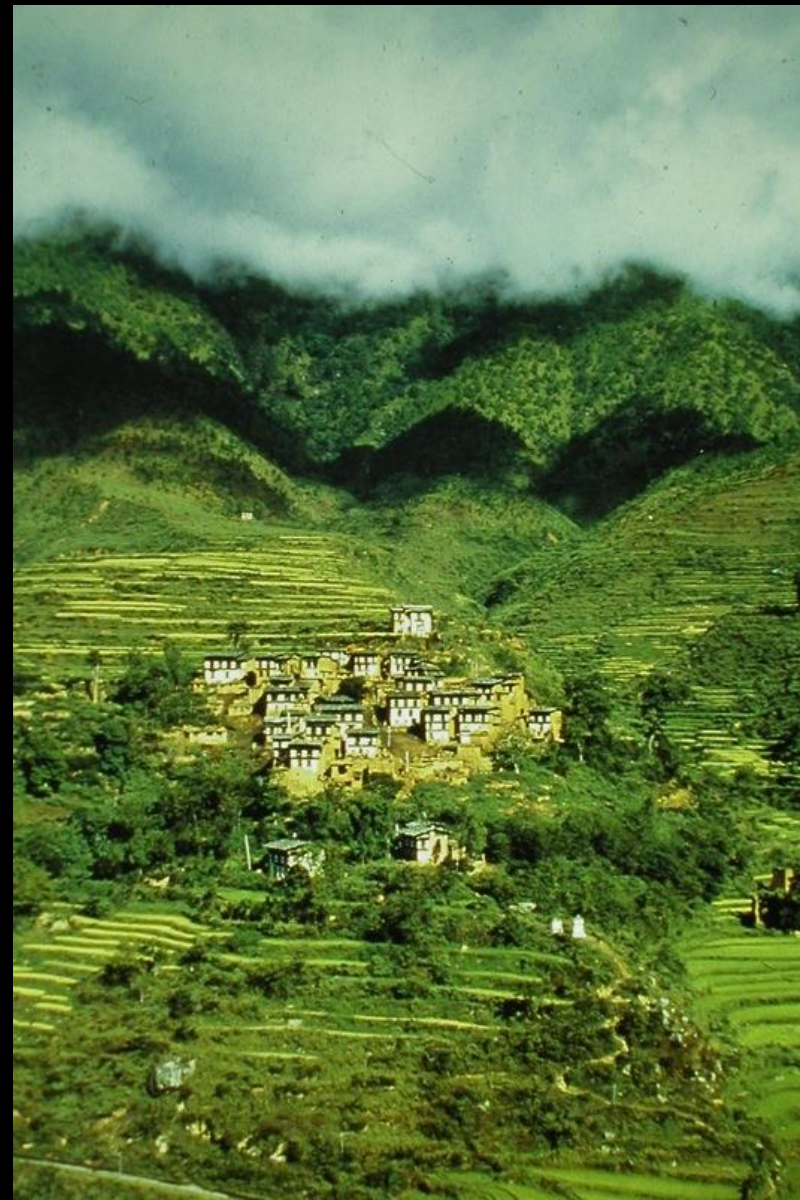
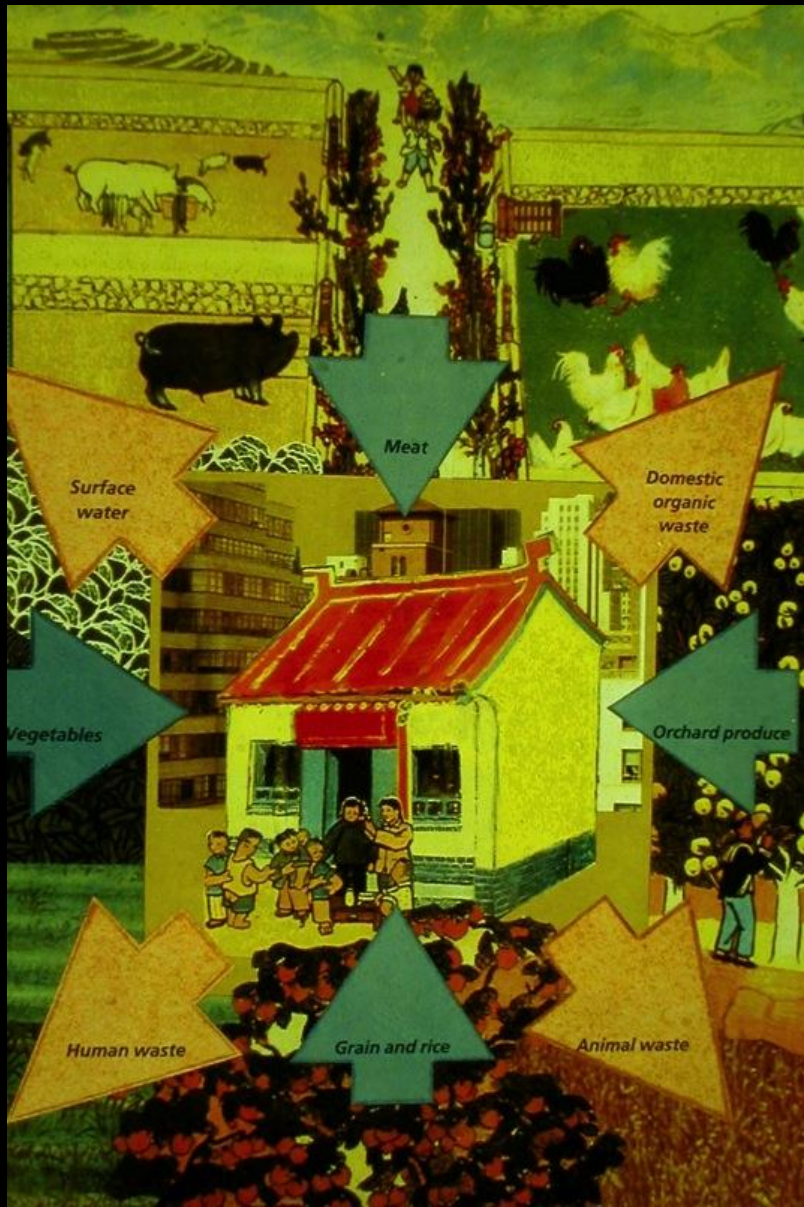


One Planet NOT Three!



Earth

Our ambition has to
be to reduce our
***ECOLOGICAL
FOOTPRINT***
.....but how?





Governments are
encouraging us
to **burn** our way
out of
recession....
again



**Locking Carbon
- not burning it**

Sweet Chestnut: The Process



Sweet Chestnut:

The Process



Sweet Chestnut:

The Process



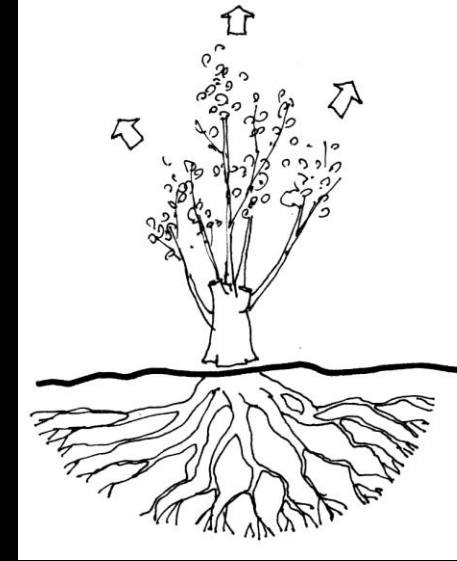
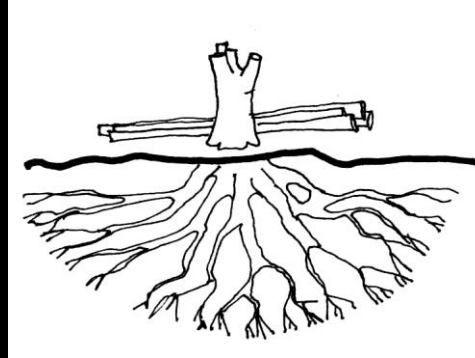
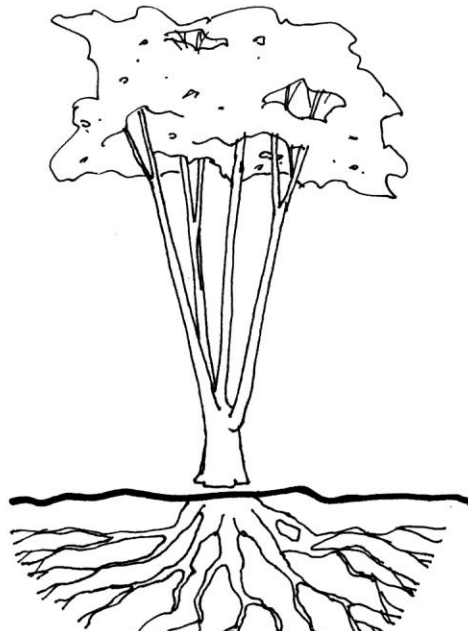
Sweet Chestnut: Glue Laminated Column



Harvesting Wood

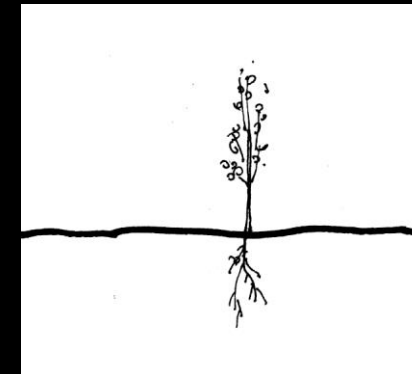
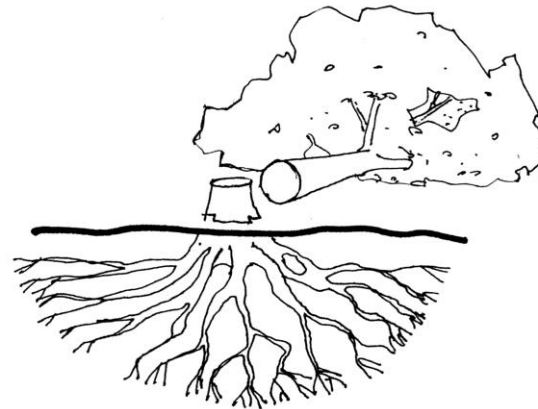
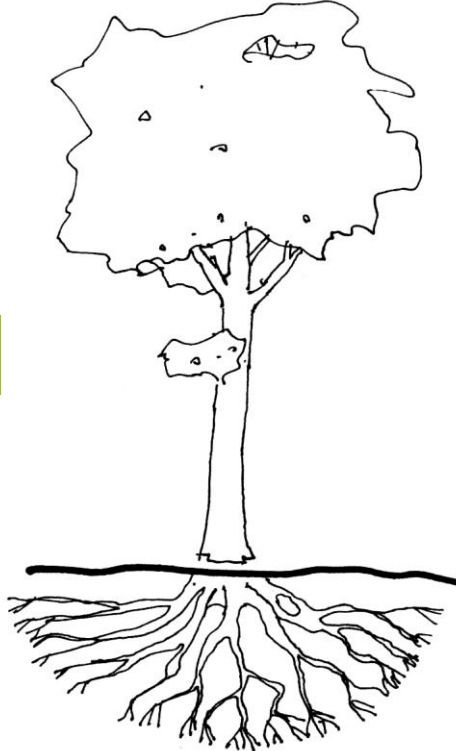
- Coppicing

25-30 yrs to commercial harvest

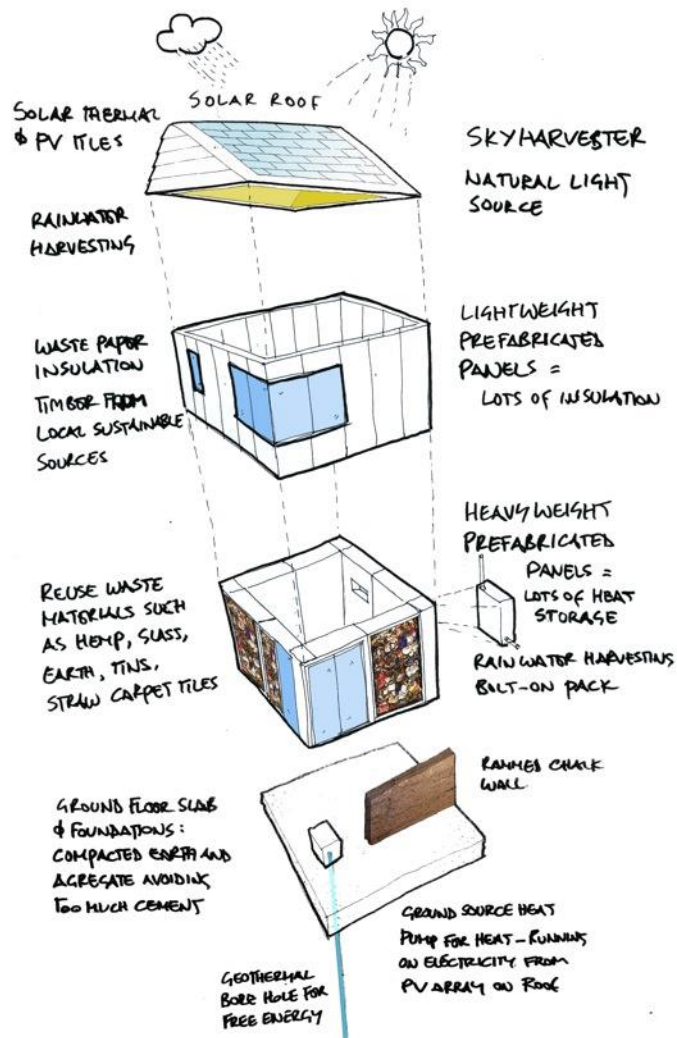


- Felling

150 yrs+ to commercial harvest



THTKB 2008
LOCKED CO₂















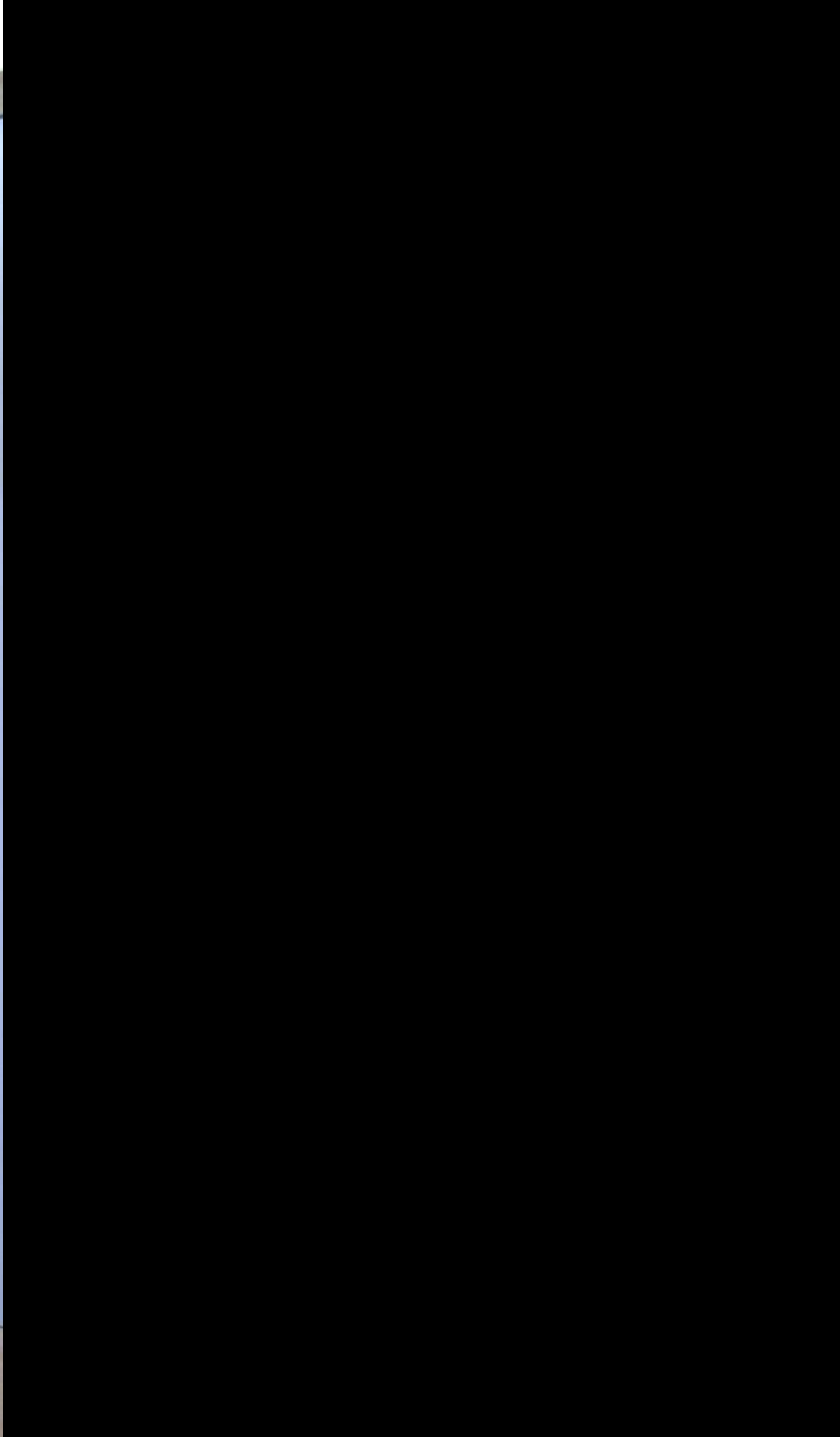
3.4

3.4

WALDO























Energy Performance Certificate

Non-Domestic Building



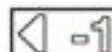
Kevin's House Grand Designs Live Docklands
London
E16 1DR

Certificate Reference Number:
0100-0038-0000-0029-0002

This certificate shows the energy rating of this building. It indicates the energy efficiency of the building fabric and the heating, ventilation, cooling and lighting systems. The rating is compared to two benchmarks for this type of building: one appropriate for new buildings and one appropriate for existing buildings. There is more advice on how to interpret this information on the Government's website www.communities.gov.uk/epbd.

Energy Performance Asset Rating

More energy efficient



This is how energy efficient the building is.

Net zero CO₂ emissions



Less energy efficient

Technical information

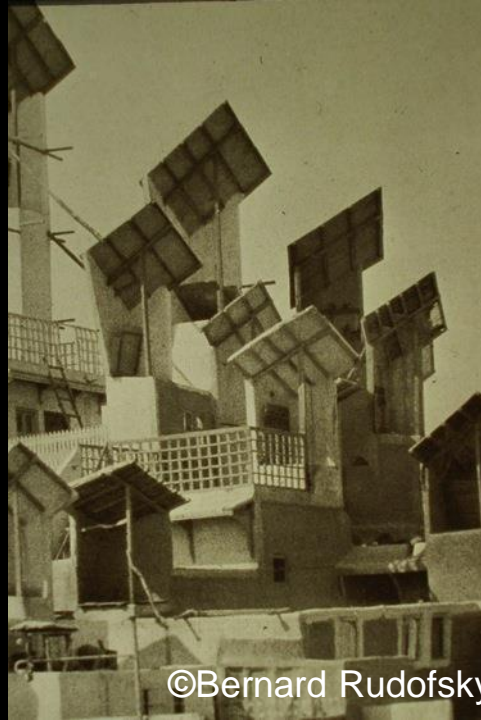
Main heating fuel:	District Heating
Building environment:	Undefined
Total useful floor area (m ²):	104
Building complexity (NBS level):	3

Benchmarks

Buildings similar to this one could have ratings as follows:

22	if newly built
25	if typical of the existing stock

**Unfortunately
this is
Sustainable
Design.....
Hyderabad-sindh**

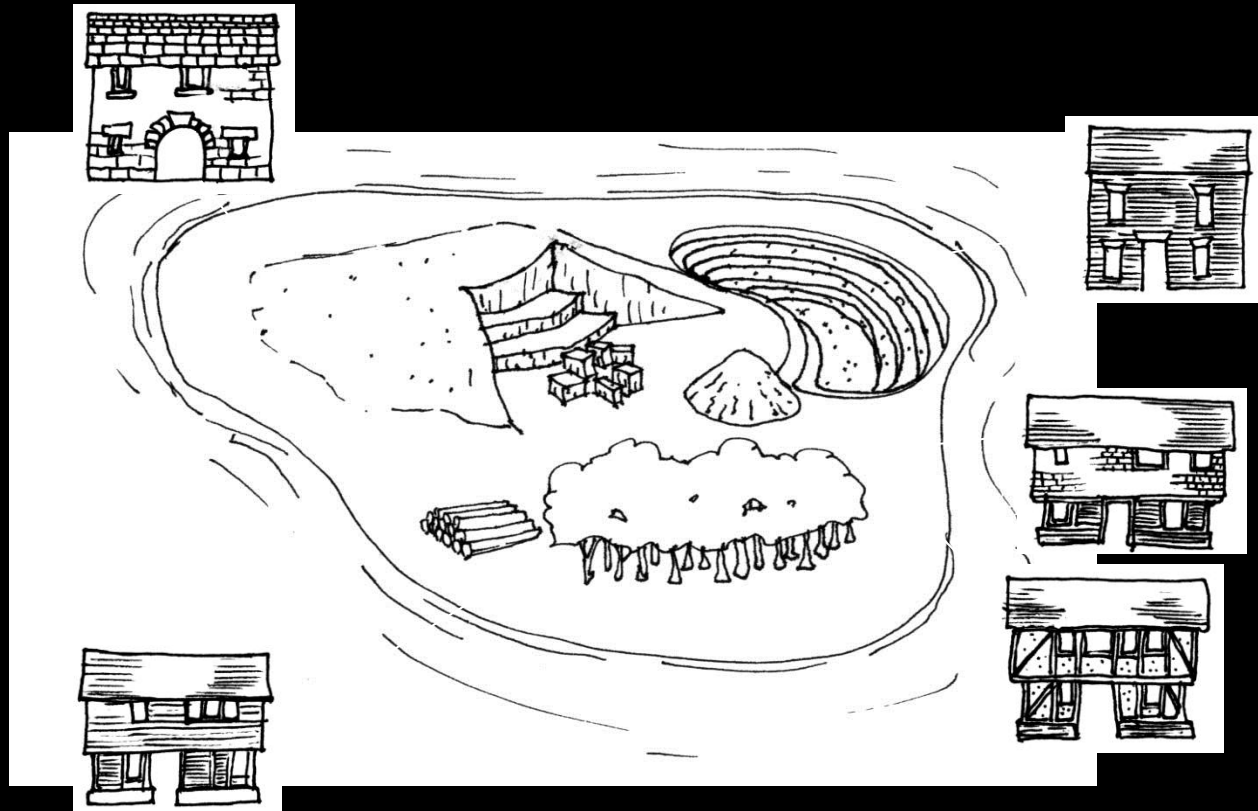


©Bernard Rudofsky



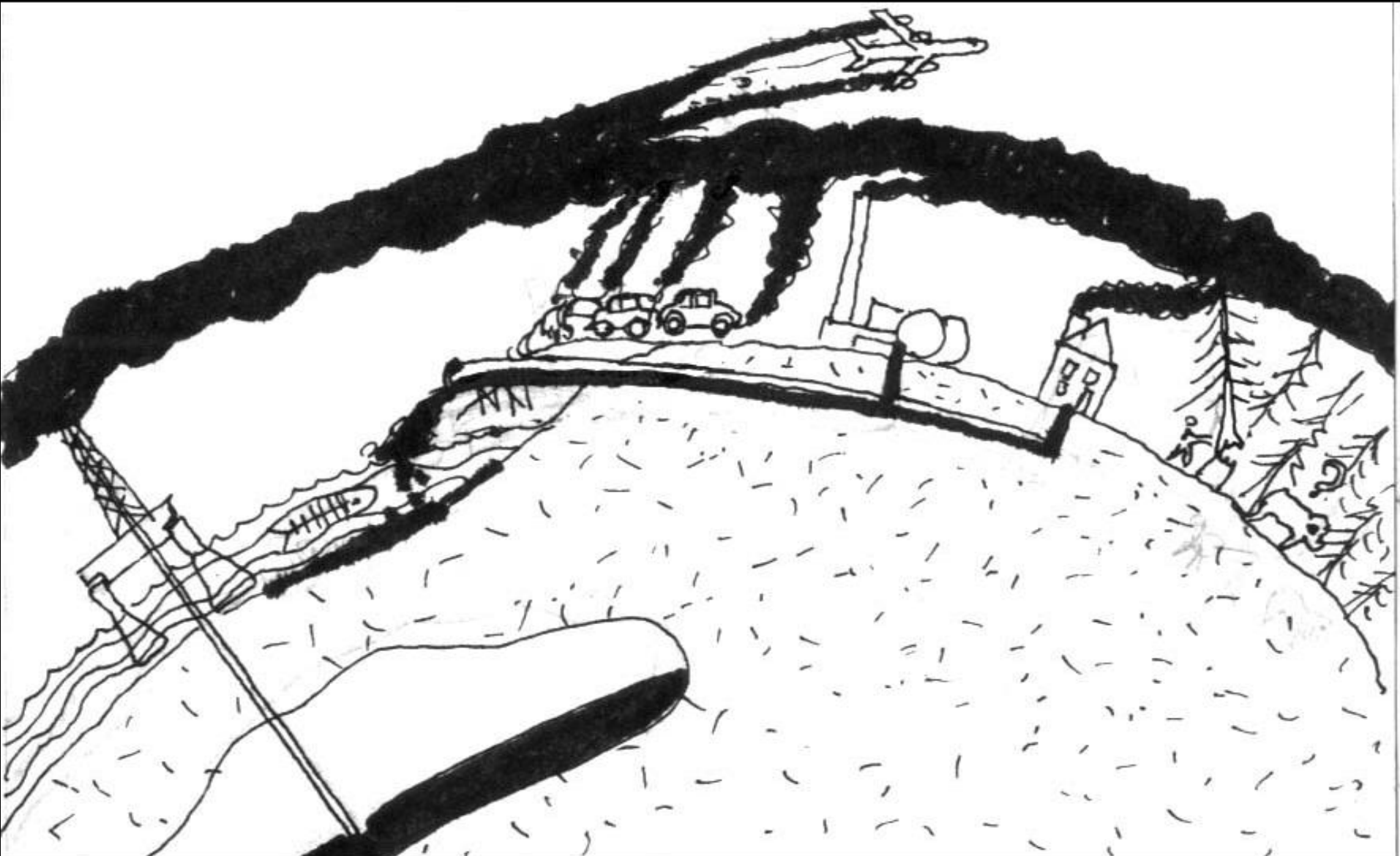
©Bernard Rudofsky

Materials Pertaining to Place

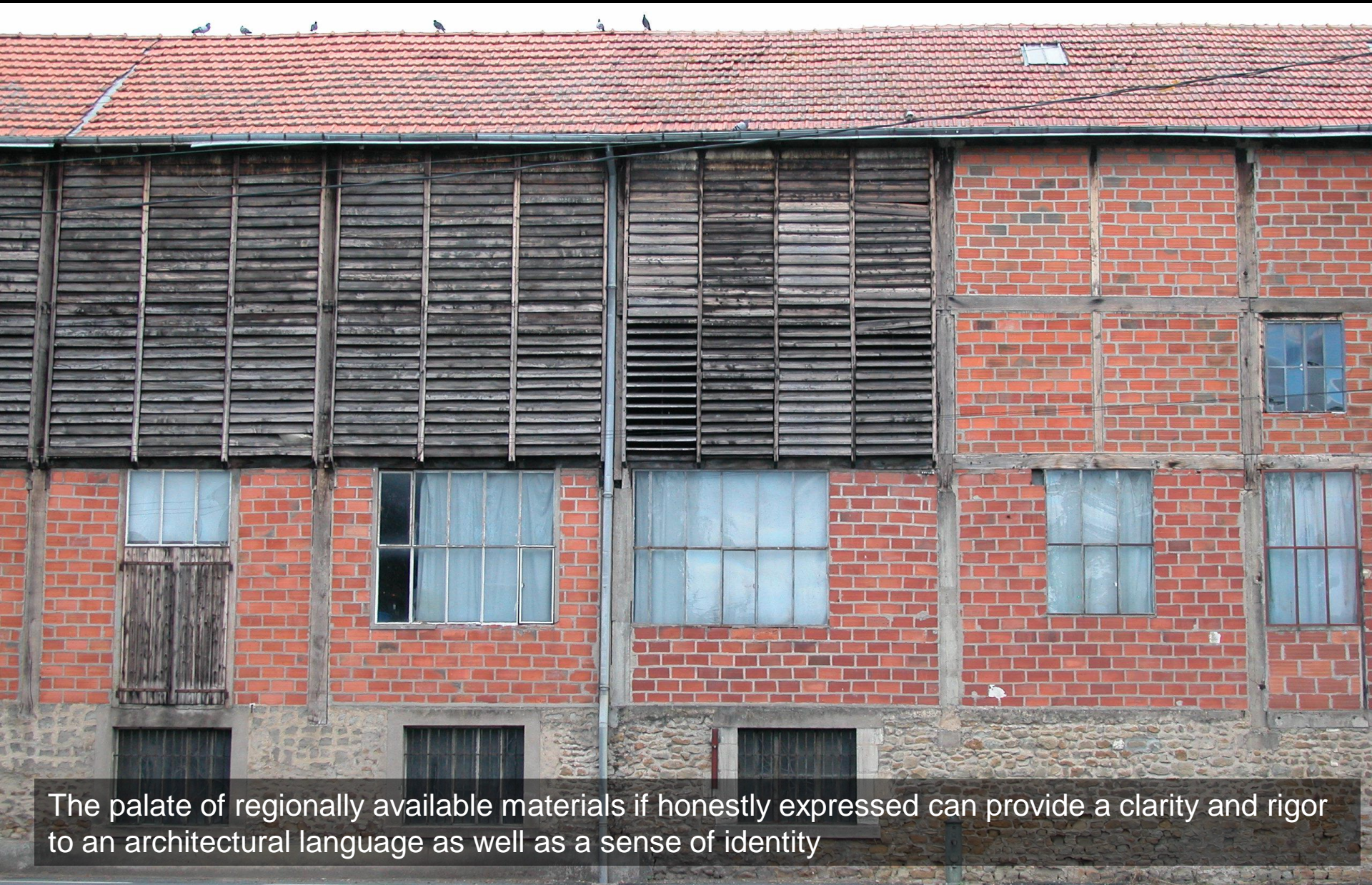


Vernacular styles of architecture were derived from the materials found close to the site - regional differences of geology and vegetation resulted in logical variations in constructional language

a material consideration



Materials Pertaining to Place



The palate of regionally available materials if honestly expressed can provide a clarity and rigor to an architectural language as well as a sense of identity

So How Did Pre-Industrial Society Cope?



“...man has from age to age translated the manuscript of the earth into the terms of his own thought and use...To realize the differences between place and place; to observe the varieties in expression of the genius locci by noting the correspondences between the raw material below and the finished structure above the ground”

H.J. Massingham. Cotswold Country. Batsford Press. London. 1937. P.3

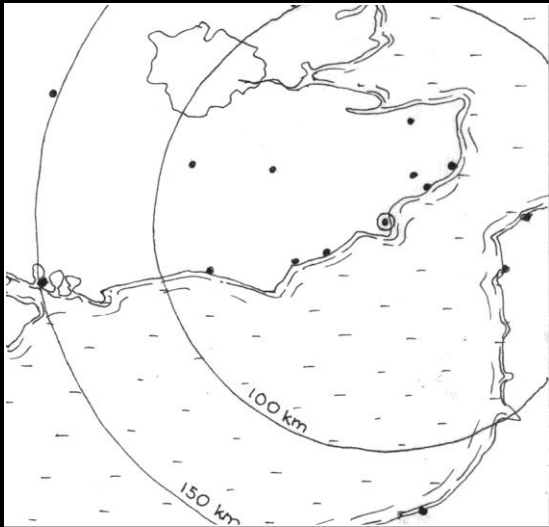
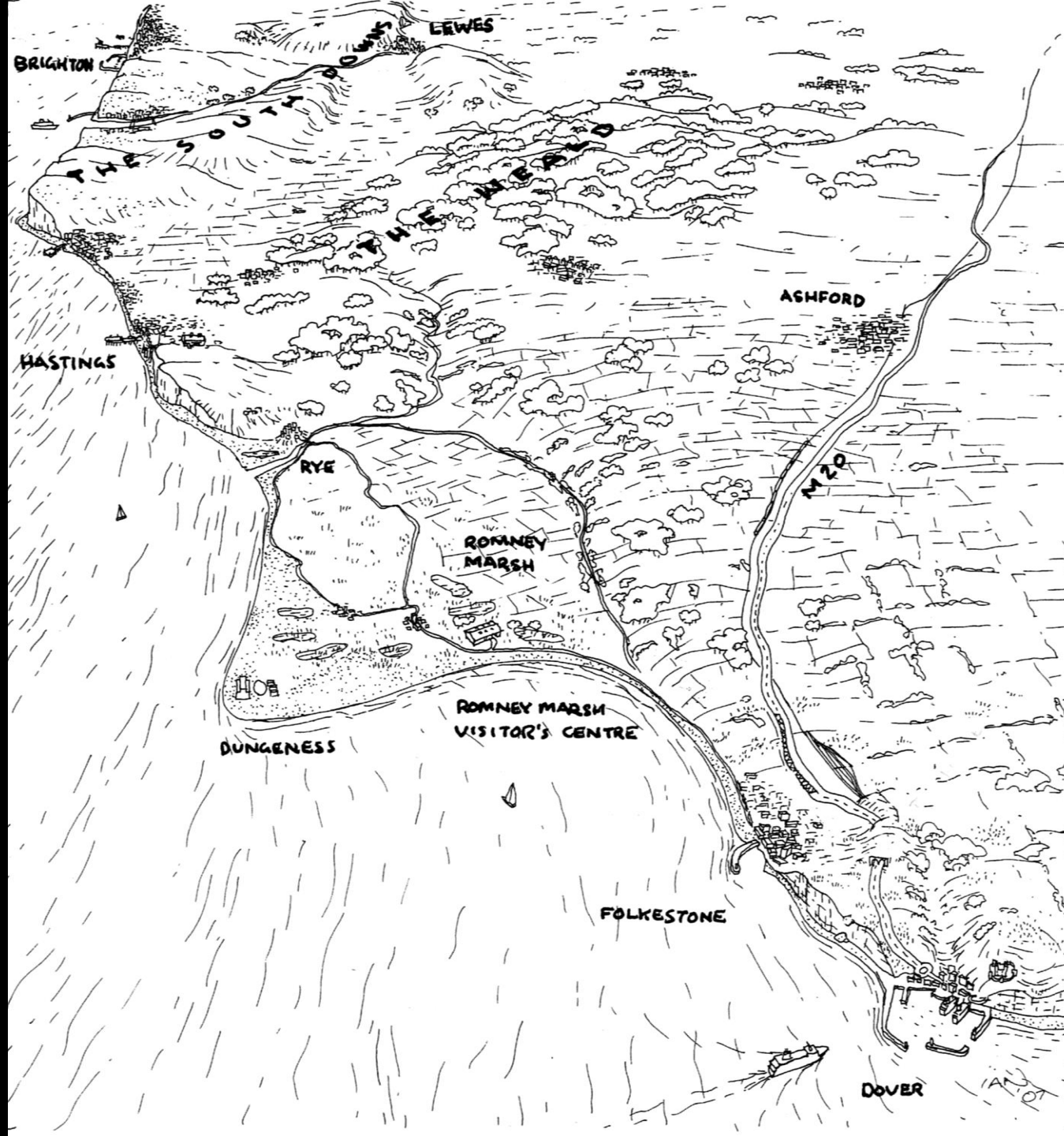
Romney Marsh

Visitor's Centre

Site Analysis

Location

- Available Building Materials



SEASCAPE Romney Marsh Visitor's Centre



SEASCAPE Romney Marsh Visitor's Centre



SEASCAPE Romney Marsh Visitor's Centre



- **Location**

- The Dungeness peninsular is one of the largest on-shore drift beaches in the world, stretching for miles in all directions
- The agglomerated beach shingle was once locked into the south coast chalk cliffs of East Sussex and Kent
- Farming land to the north of the site makes straw readily available

SEASCAPE Romney Marsh Visitor's Centre

On Site



SEASCAPE Romney Marsh Visitor's Centre

On Site





SEASCAPE

Romney Marsh

Visitor's Centre

On Site



On Site

On Site



On Site



On Site



On Site



On Site



SEASCAPE Romney Marsh Visitor's Centre



SEASCAPE Romney Marsh Visitor's Centre









“If your design team are telling you that their green design will cost more than the norm ask them to try harder. If they can’t get a team who can”

..... Neil B. Chambers ‘Urban Green’

Self Build: Small & Cheap!

Sparrowhouse Lewes



Project Type: Self Build three bedroom house

Total Project Value: £147,000

Gross Internal Floor Area: 95m²

Average Cost/ m²: £1,442/m²(inc. renewables))

Duration on site: 5 months

Prize: Downland Prize 2004

**Renewables:
4m² solar thermal panel £3.0k**

'U' Values :

Walls - 0.18

Roof - 0.23

Floor - 0.23

Annual Utility Bills:

Gas - 400

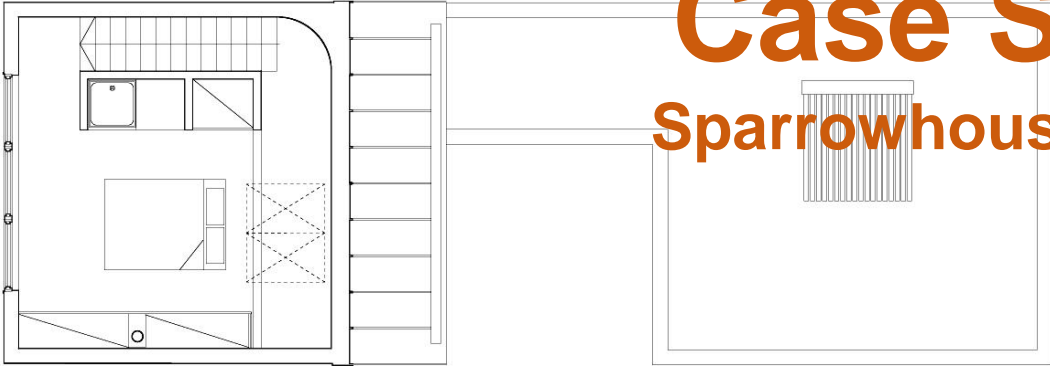
Electricity - £350

Water - £200

**Code For
Sustainable Homes:
Level 4 equivalent**

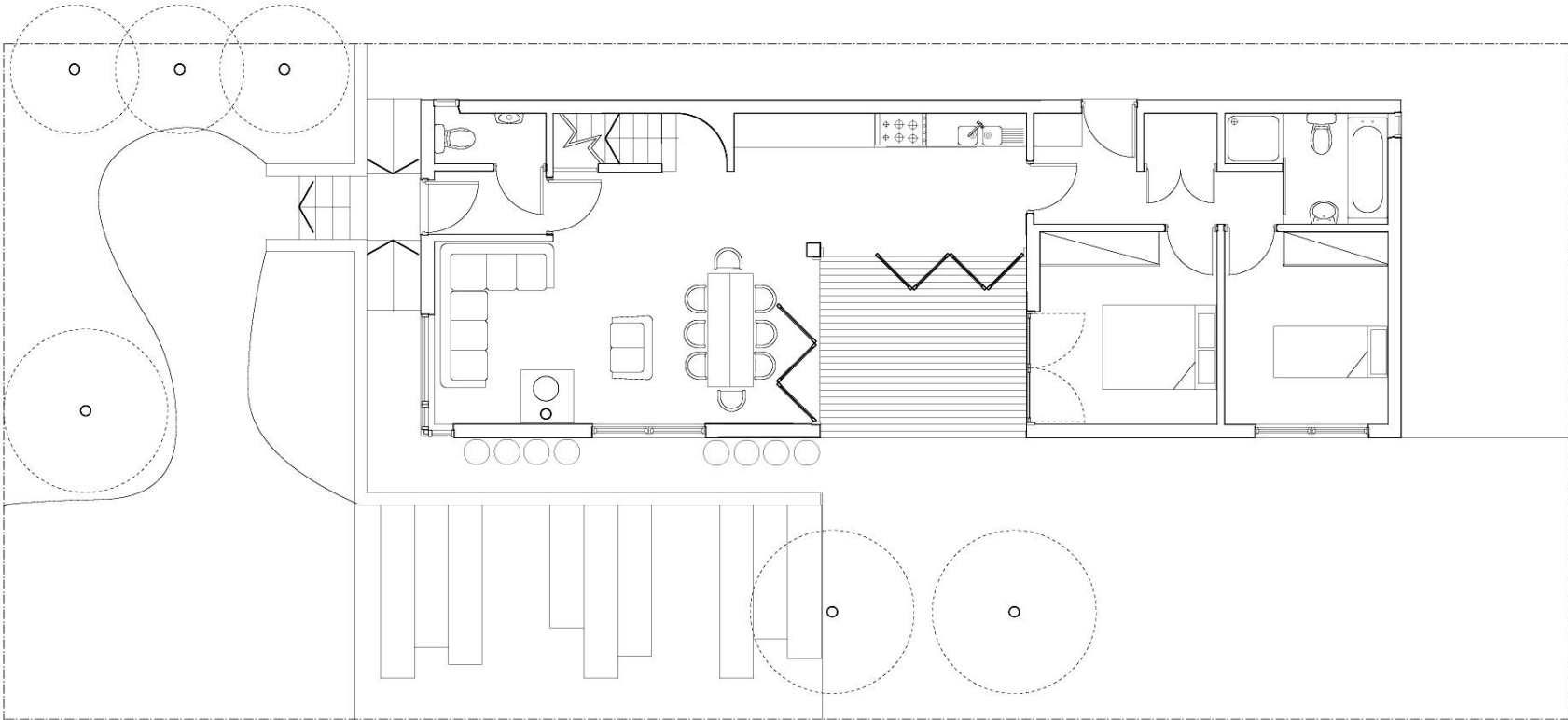
Case Study

Sparrowhouse Lewes



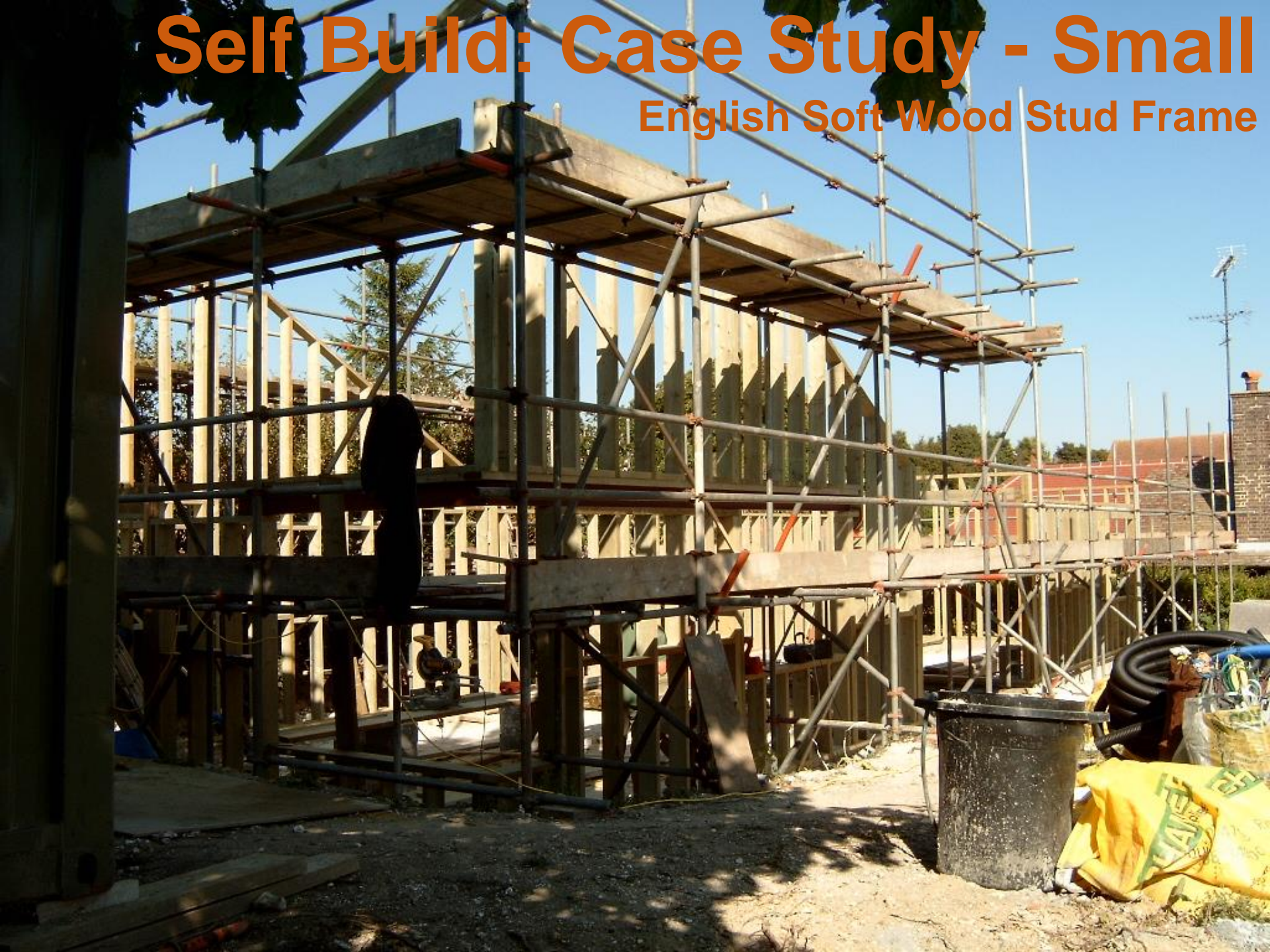
FIRST FLOOR PLAN

Windover Crescent



Self Build: Case Study - Small

English Soft Wood Stud Frame



Self Build: Case Study - Small

OSB



Self Build: Case Study - Small Sparrowhouse Lewes



Floor Insulation made from Waste Timber Fibres



Power Floated 'heat sink' Screed finish with integral under floor heating

Self Build: Case Study - Small Sparrowhouse Lewes



Sheep's Wool Insulation & English Softwood with non-toxic treatment

NEW BUILD: Case Study - Small Sparrowhouse Lewes



Breather Paper made from waste plastic & paper



Sweet Chestnut Cladding from local coppiced woodlands within 10 miles of site

Self Build: Case Study - Small Sparrowhouse Lewes



Clay Plaster Walls absorb airborne toxins

Exposed Polished Screed acts as 'heat sink' and moderates the internal environment

Self Build: Case Study - Small Sparrowhouse Lewes



Kitchen uses Ply with Formaldehyde-free glue
Bedroom uses similar Oak Block-board

Self Build: Case Study - Small Sparrowhouse Lewes



Atmos Condensing boiler with integral 80ltr tank & 110ltr solar store



Atmos drain back solar thermal panel - N.B. spare one to rhs given away

*“for every five houses built in UK
the
equivalent of one house worth
of waste is sent to landfill”*

source WRAP



REDUCE

before you REUSE

before you RECYCLE

and

Design

for Demolition



SUPERUSE

STUDIOS

RESEARCH
DESIGN
ARCHITECTURE
MATERIALS
INTERVENTIONS
URBANISM
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VILLA WELPELOO



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“THERE IS NO SUCH
THING AS WASTE
ONLY STUFF IN THE
WRONG PLACE”

..... Someone blogging on Treehugger

SOME ISSUES TO CONSIDER

Mining Raw Materials is Costing More

UK, Europe, even USA don't own the resources they use to.

Throwing Stuff 'Away' is Costing More

The price of skips doubled/trebled last year

Smart individuals with avoid doing both

The Waste House

2012-13























EARS

C15

MT FLOOR

FLOOR









MICHAEL WHITE
BRIGHTON CITY COLLEGE
JOINERY & CARPENTRY STUDENT























MEARS
Making People *Smile*

SCAFFOLDING BY
AUSTINS
CRANLEY LTD.
8 TON 734744

SCAFFOLDING BY
AUSTINS
CRANLEY LTD.
8 TON 734744

WASTE





1 July 2013
Manchester Hall
www.mif.co.uk

14 - 19 July 2013

4 - 21 July 2013

mif.co.uk

OFFICIAL PARTNER



The co-operative



14 - 19 July 2013

Manchester Hall

www.mif.co.uk













ecobuild

SHARE AND REUSE, USE AND REUSE,
CYCLE AND RECYCLE,
MEND AND BEFRIEND,
REDUCE AND VAMOOSH.
@chriscant

WASTE IS NOW. @zowark
THROW @








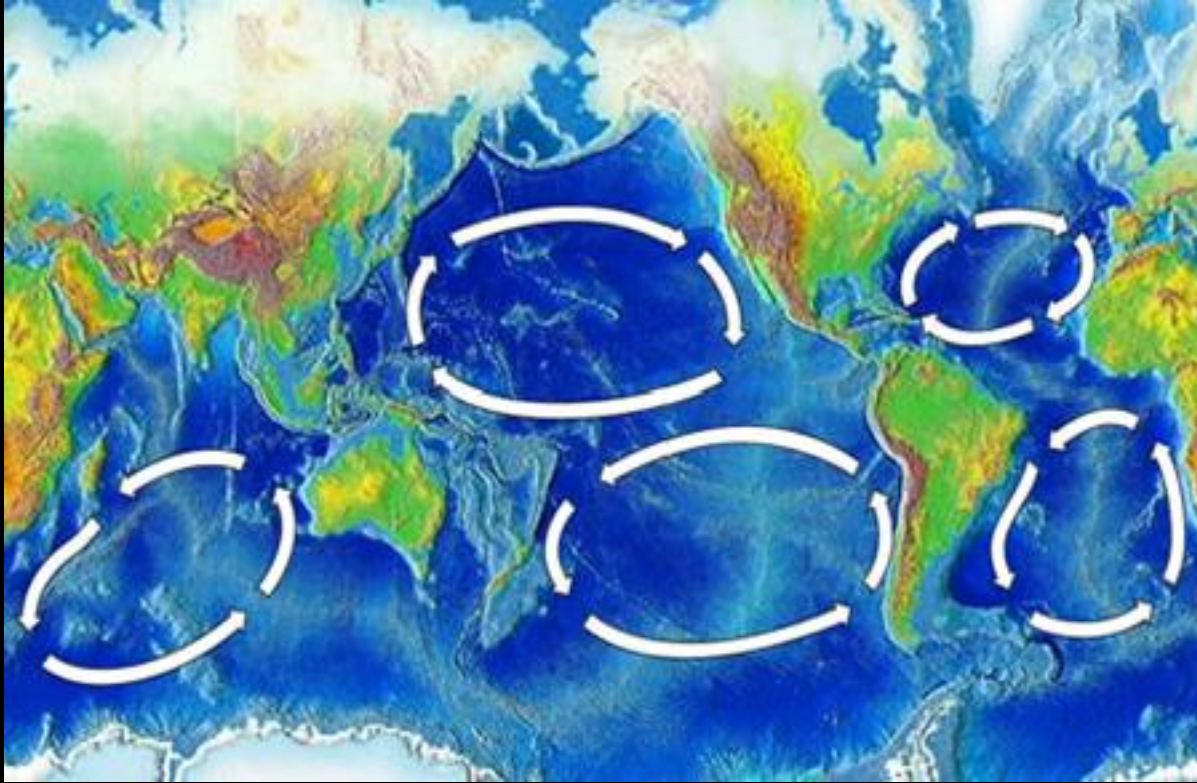




LOCKING TOXIC
PLASTIC WASTE



Chris Jordan's (US) work "Gyre" depicts 2.4 million pieces of plastic, equal to the estimated number of pounds of plastic pollution that enter the world's oceans every hour. All of the plastic in his image was collected from the Pacific Ocean.





© nozzling



©Stuart Paine

Working with Existing Places

Lacaton & Vassal - Paris 17, Tour Bois le Petre - Druot



©Lacaton Vassal

BEFORE

AFTER



©Lacaton Vassal









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..... Neil B. Chambers ‘Urban Green’