

The case for urban agriculture as an essential element of sustainable urban infrastructure

Bohn & Viljoen Architects.

André Viljoen: University of Brighton

Katrin Bohn: Technical University of Berlin

Copenhagen House of Food Urban Agriculture Conference

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Urban Agriculture : Essential Infrastructure & Ecological Intensification



image: Bohn&Viljoen . 2002

Urban Agriculture : personal and seasonal productive urban landscape



allotment site in Brighton . image: Antonia Faust, University of Brighton . 2002

background

The Urban Food System

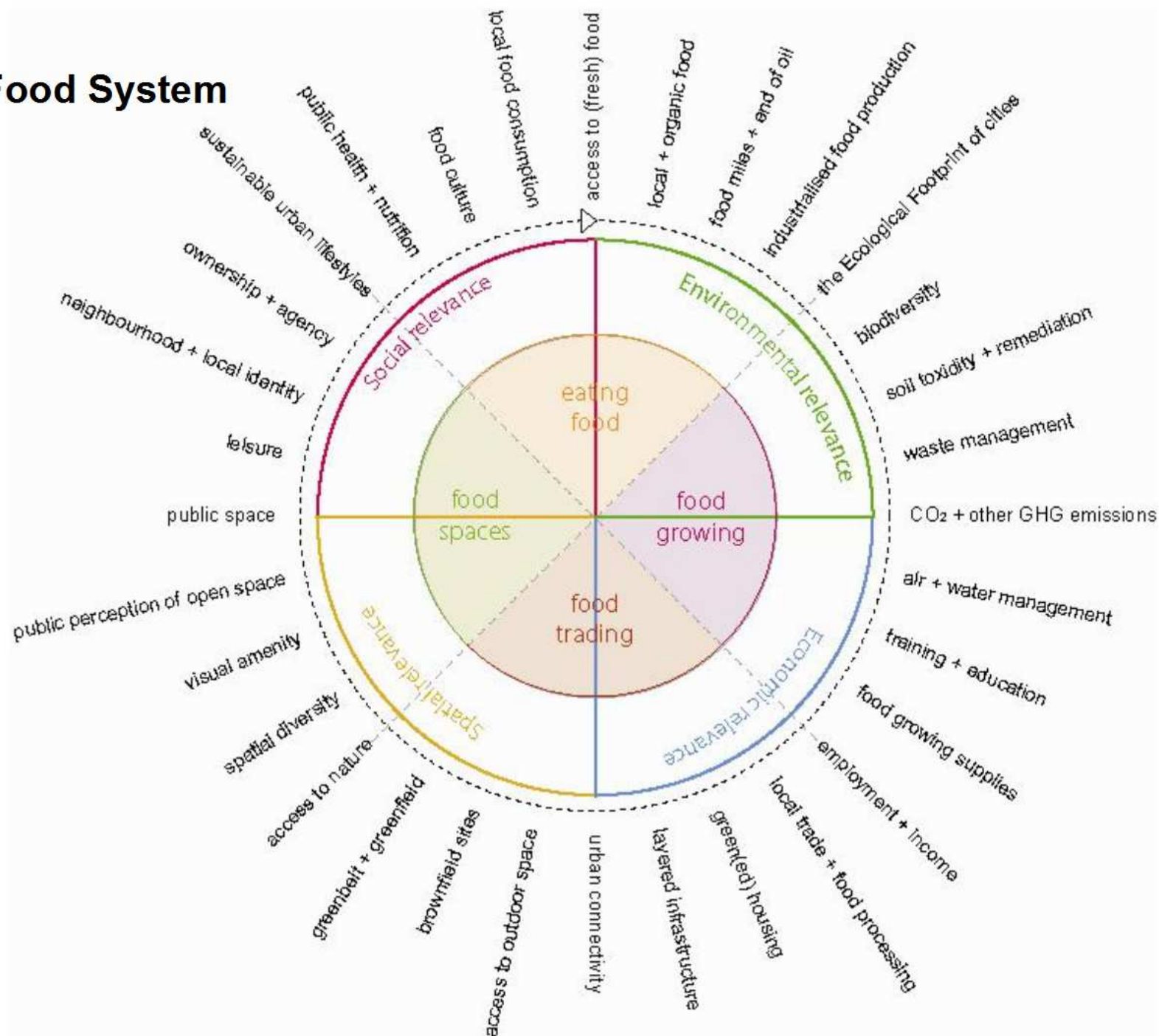


image: Bohn&Viljoen

The CPUL City

**components
and
urban agriculture
as essential
infrastructure**



+

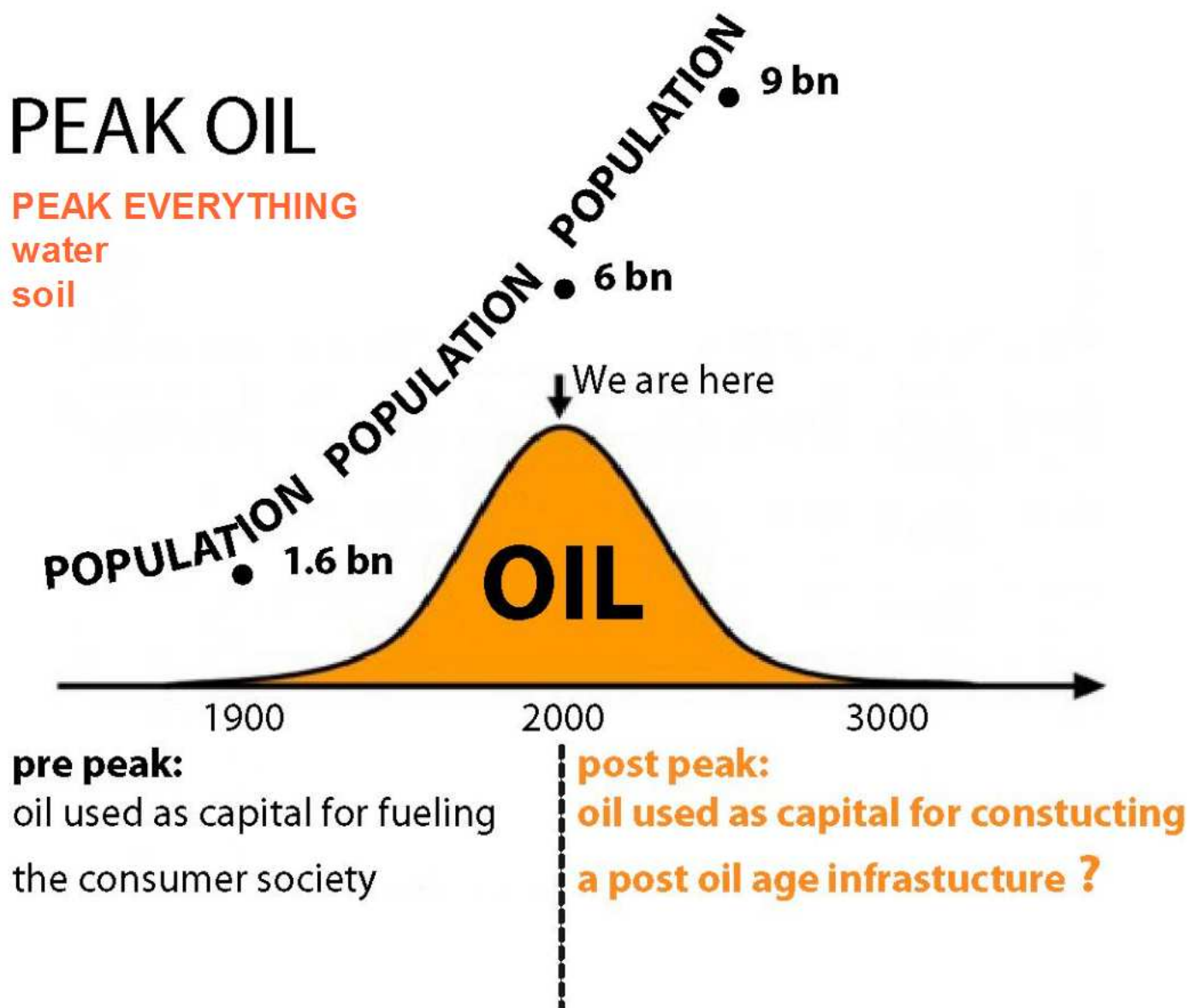


images: Bohn&Viljoen

Context

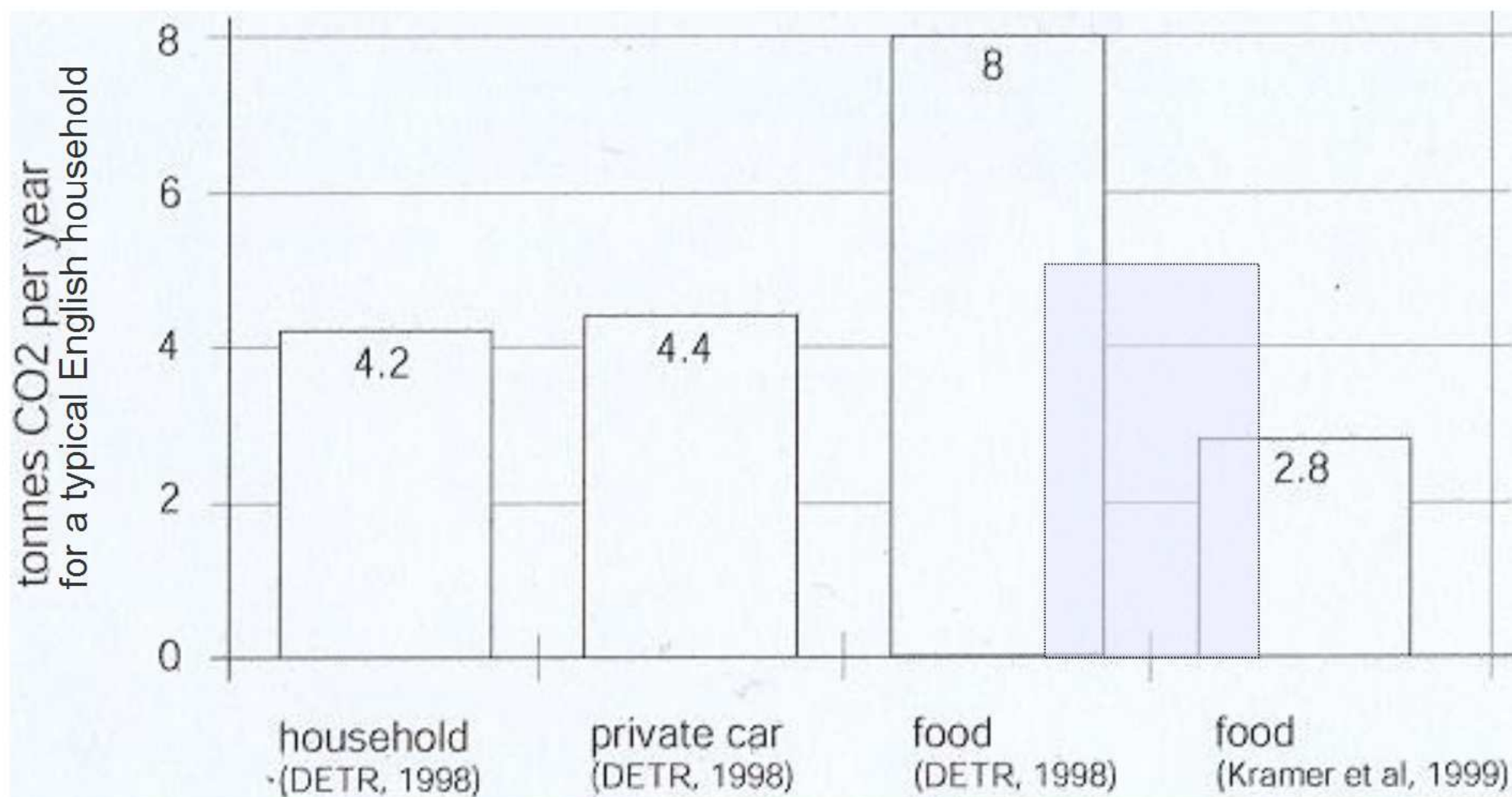
PEAK OIL

PEAK EVERYTHING
water
soil



data: Richard Dowthwaite, 2004

Ecological Footprint : CO2 emission and current urban lifestyles



data: DETR GIR53, 1998

Why CPUL?

Food Production : two future food paradigms

THE LIFE SCIENCES INTEGRATED PARADIGM

THE ECOLOGICALLY INTEGRATED PARADIGM

or

likely to be:

- Energy intensive
- Highly centralized
- Input intensive
- Food retailers who dominate supply
- An industrial scale application of biotechnology
- Geared towards designer foods
- Aimed at global consumer market dominance

likely to be:

- Energy efficient (using natural energy systems)
- Local
- Part of an intensive ecological model
- Producers and local retailers dominate
- Organic production dominant
- Geared towards fresh natural crops
- Citizen-led with goals of equity (public health)

defining the benefits of urban agriculture

Achieving the CPUL City Continuous Productive Urban Landscapes moving from theory to practice

The Town Meal : growing it



images: David Barrie, dott07. 2006

The Urban Farming Project Middlesbrough

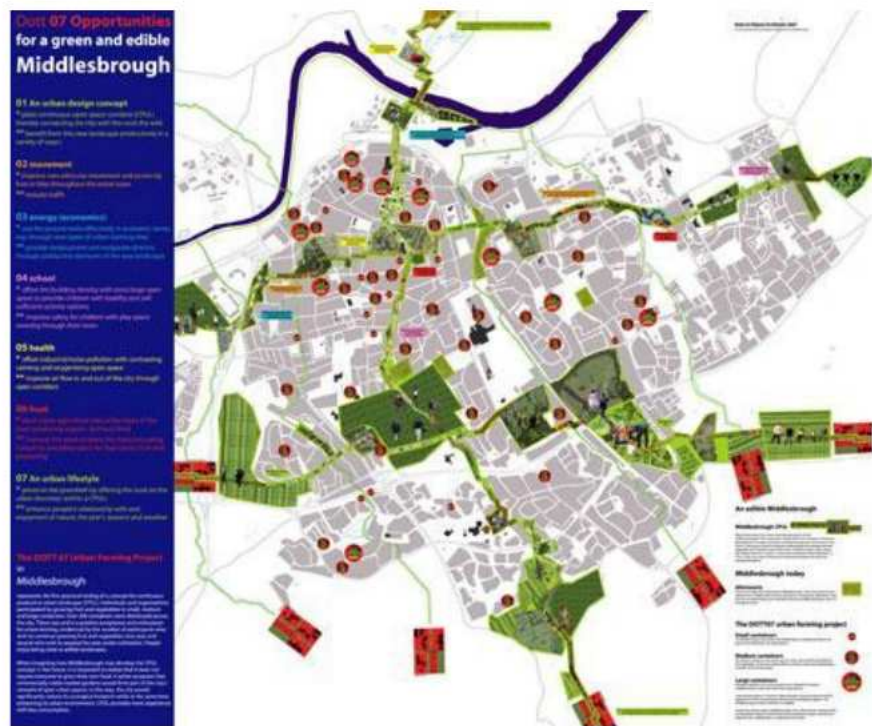
The Town Meal : planting it



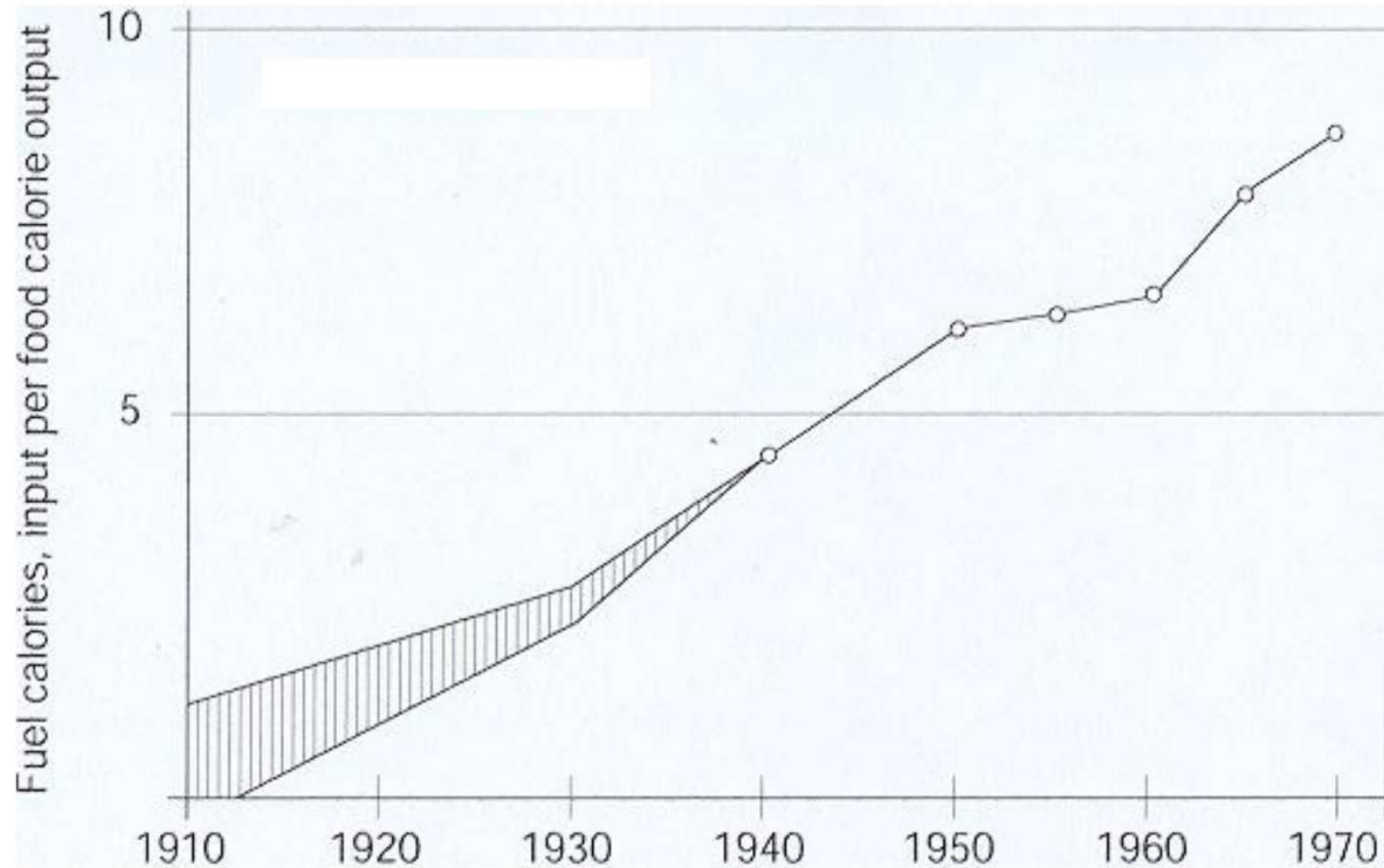
- 1 additional allotment site revitalised
- interest in all participants to “do it again”
- in 2 cases, the city council has been approached with inquiries to convert underused grassy lands in council estates into urban agriculture plots

images: David Barrie, dott07. 2006

Legacy 2007: a CPUL opportunity map for Middlesbrough



Ecological Footprint : environmental impact of industrialised food production



data: Steinhart & Steinhart . 1971

Urban Food Production : income and employment within local food systems

The costs of essential infrastructure 2005



10m wide road



raised beds



uncontaminated fields

Construction costs:

£ 200 / m²

Income:

from road tax

Staff costs:

traffic police, maintenance

£ 50 / m²

from food sales

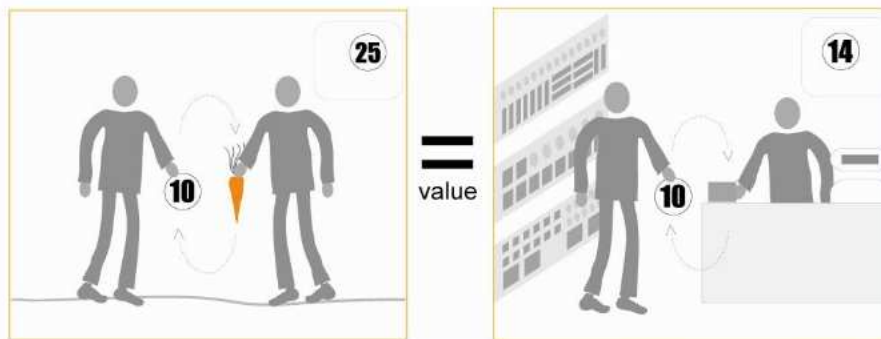
market gardeners

£ 0.5 / m²

from food sales

market gardeners

Local Economies 2008



Every £10 spend with a local food initiative in the UK, is worth £25 for the local area compared with just £14 when the same amount is spent in a supermarket.

What to do? : Design : The Inventory of Urban Capacity

- detailed inventory of open space [incl. ownership, soil quality, desire-in-use]
- securing stakeholder support [agency]
- yield and potential farm management pattern

Various design proposals Density + Yield studies 2000



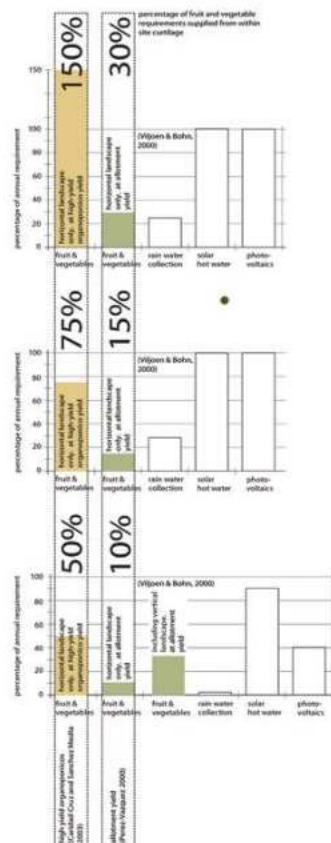
Low-density suburban housing in Sheffield (Bohn&Viljoen architects)



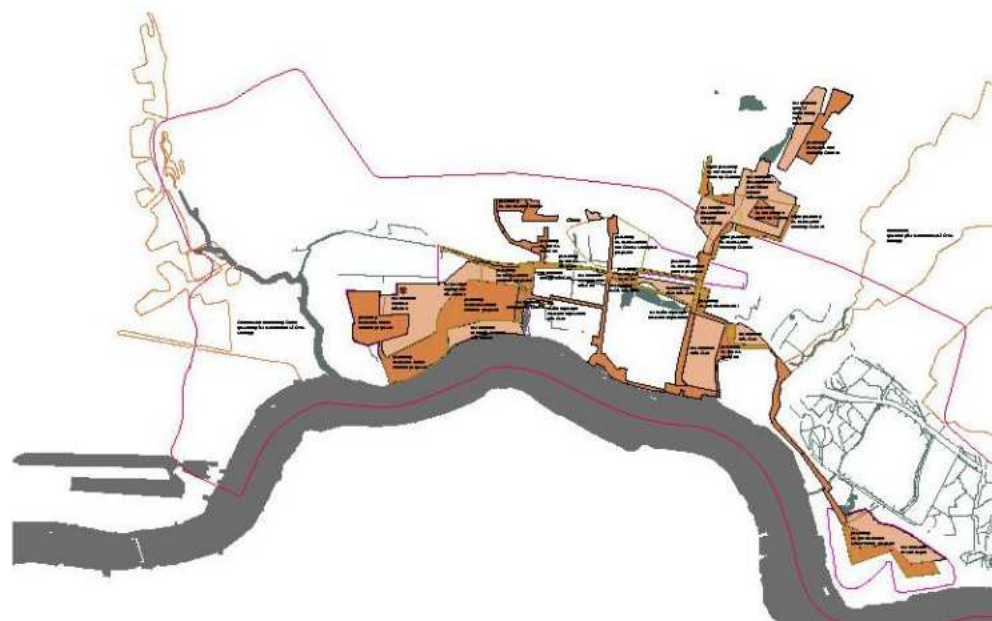
Medium-density zero-energy housing on a brownfield site in Newark (Bohn&Viljoen architects)



High-density live/work proposal for Shoreditch, London (Bohn&Viljoen architects)



London Thames Gateway Feasibility study 2004



images: Bohn&Viljoen . 1999, 2004

How will CPUL look?

Alternative Open Urban Space Uses : qualitative data



Munton Road, London Southwark



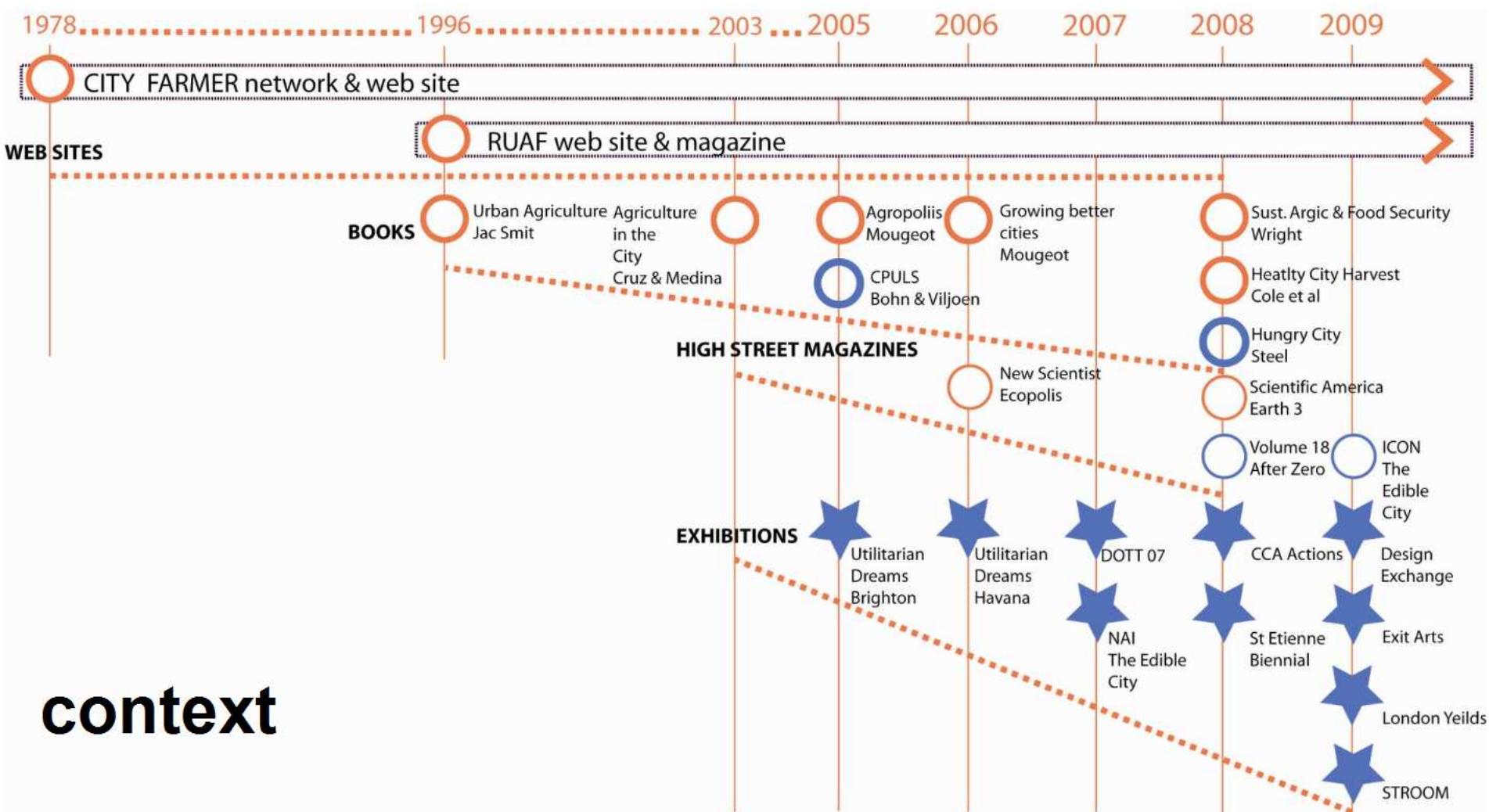
Orb Street, London Southwark

images: Bohn&Viljoen . Leisurescape . 2003

the need for prototypes & policies

Achieving the CPUL City Continuous Productive Urban Landscapes moving from theory to practice

CPUL: urban agriculture, advocacy, design + culture

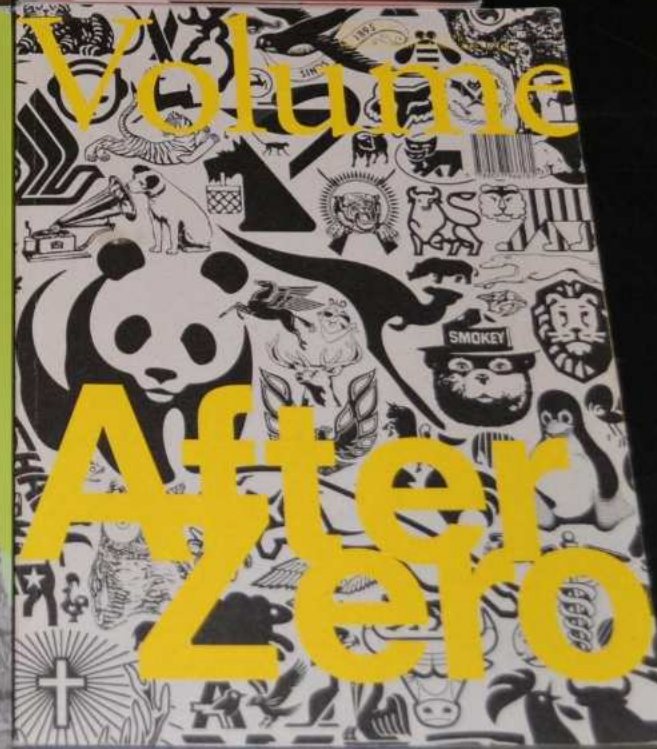


RUSSIA

CANADA
& USA

CHINA

EUROPE





LONDON

East Hale Allotment Haringey



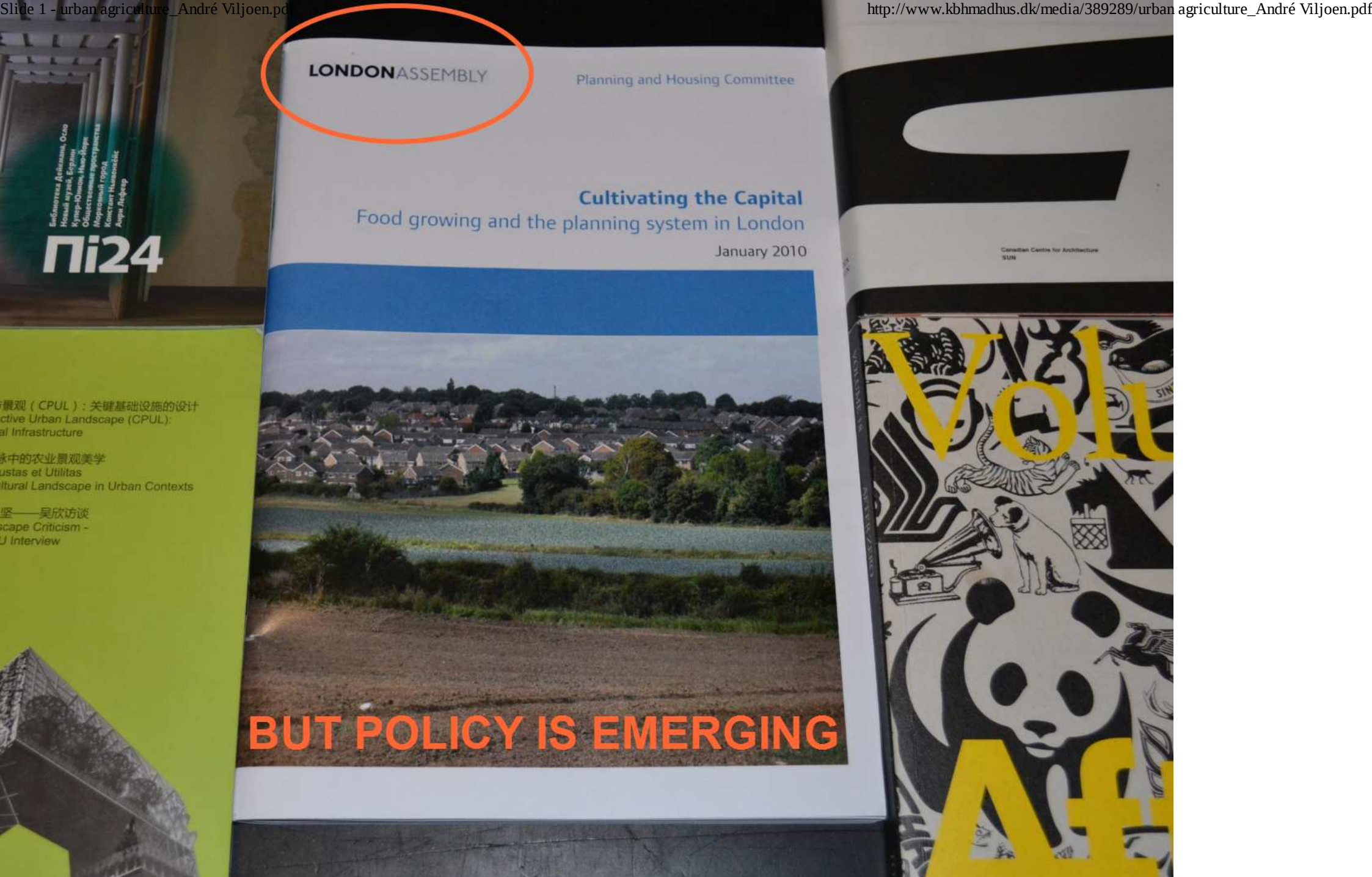
Brockwell Park Surgery

practice is outstripping policy

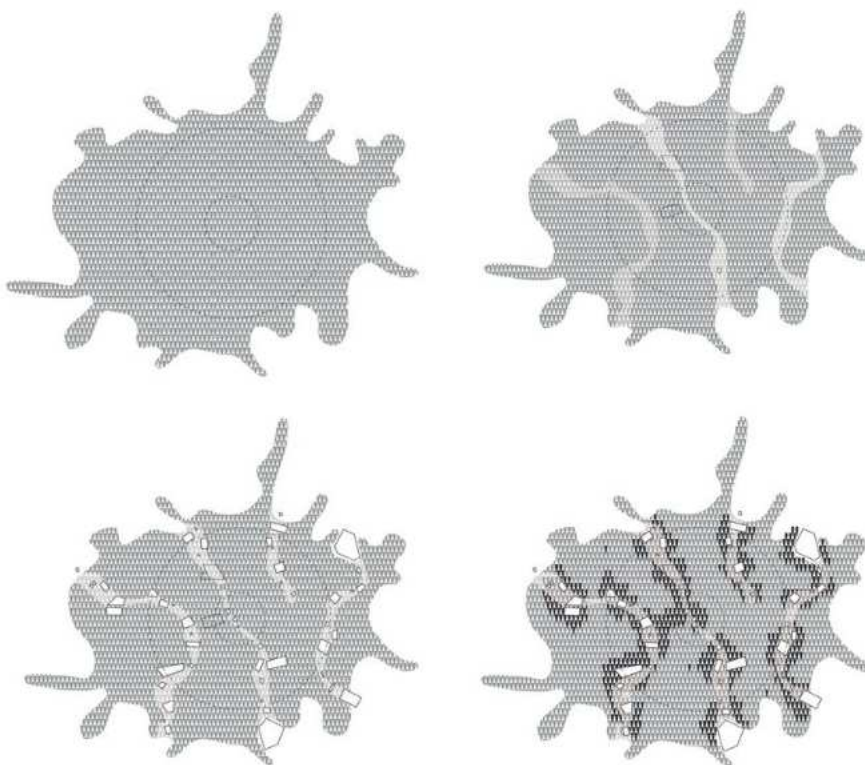


BERLIN

Prinzessinnengarten



Food system activities and space: a new urban planning topic



How to make a CPUL 2002

1.

images: Bohn&Viljoen

Enabling Urban Agriculture: The CPUL City Toolkit

U+D

- + infrastructural projects such as CPUL need parallel top-down and bottom-up initiatives

Vis

- + qualities of CPUL and UA need visualising to influence decision makers and raise public desire

IUC

- + an *Inventory of Urban Capacity* is necessary, esp. of spatial, stakeholder and managerial capacities

R

- + constant research, development and consolidation of the CPUL concept is needed

Urban Habitats : The Desire-in-use of open urban space Unlocking Space in Brighton



image : Jonathan Gales. 2010

Urban Nature Shoreditch : Essential Infrastructure

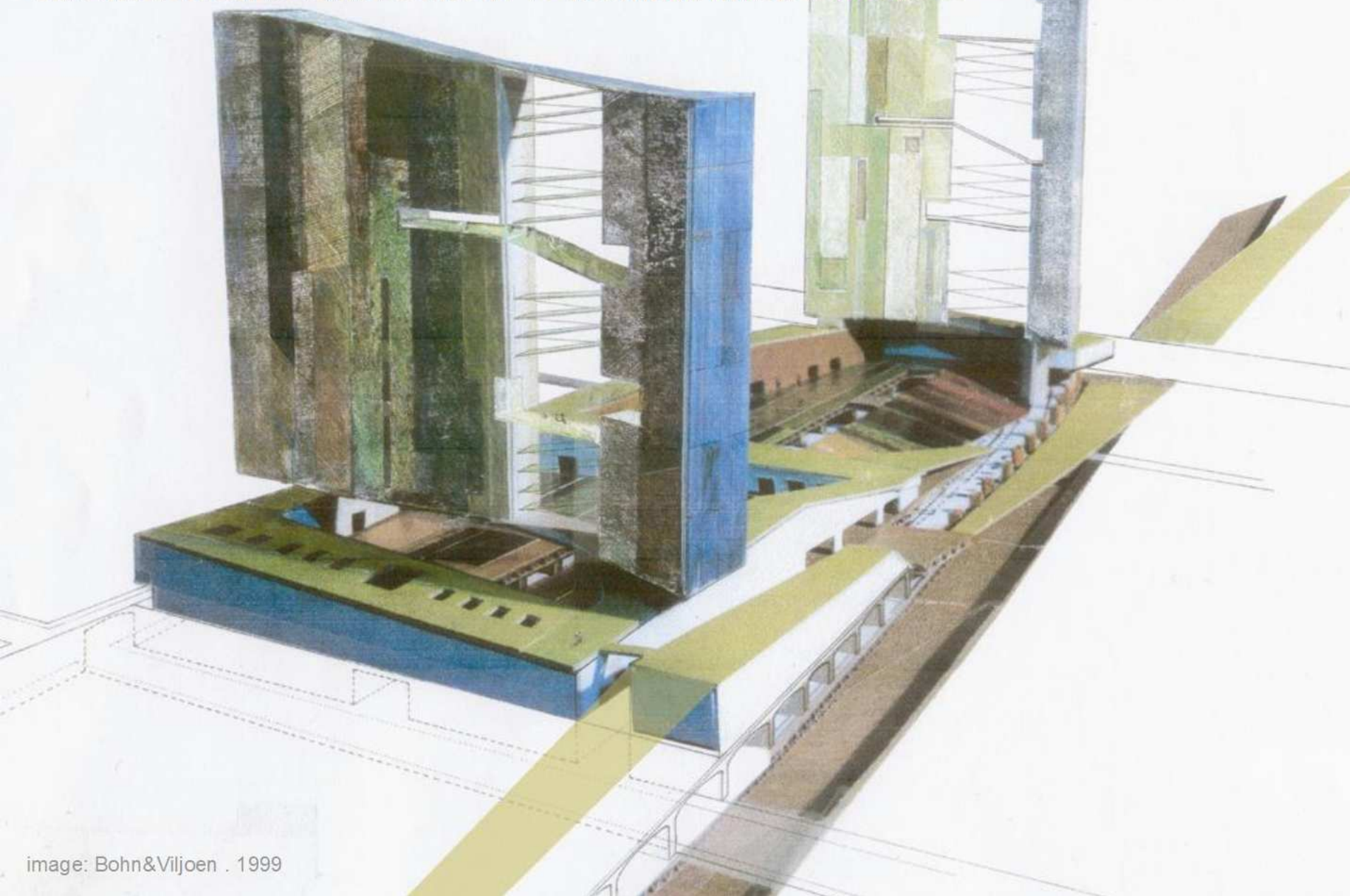


image: Bohn&Viljoen . 1999

Productive-active Lifestyles : Urban Agriculture as spatial generator



image: Bohn&Viljoen . 2009

London Yields exhibition . The Building Centre, London . 2009

The Urban Agriculture Curtain

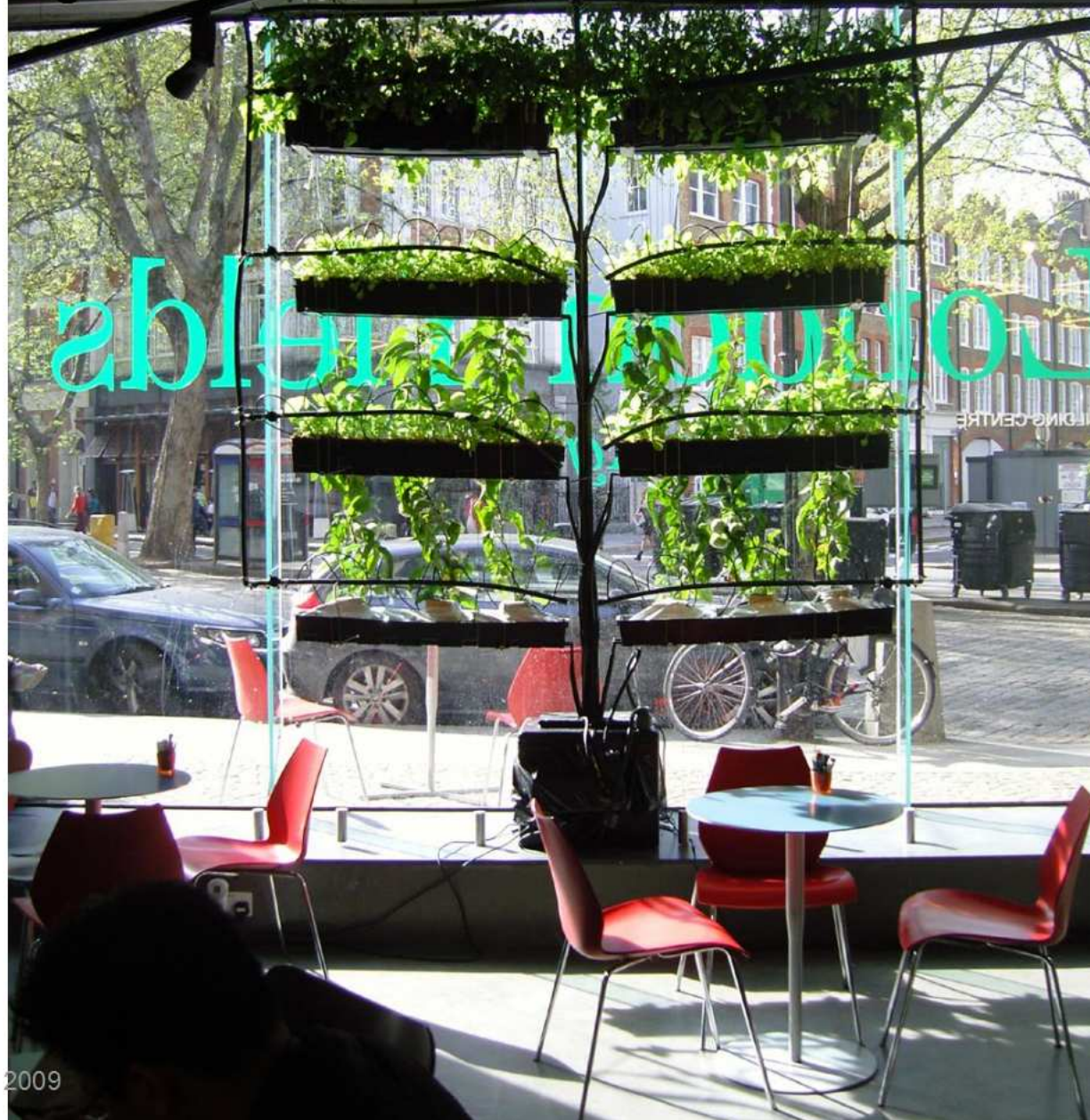


image: Bohn&Viljoen . 2009

The Urban Agriculture Curtain



image: Bohn&Viljoen . 2009



How will CPUL look?

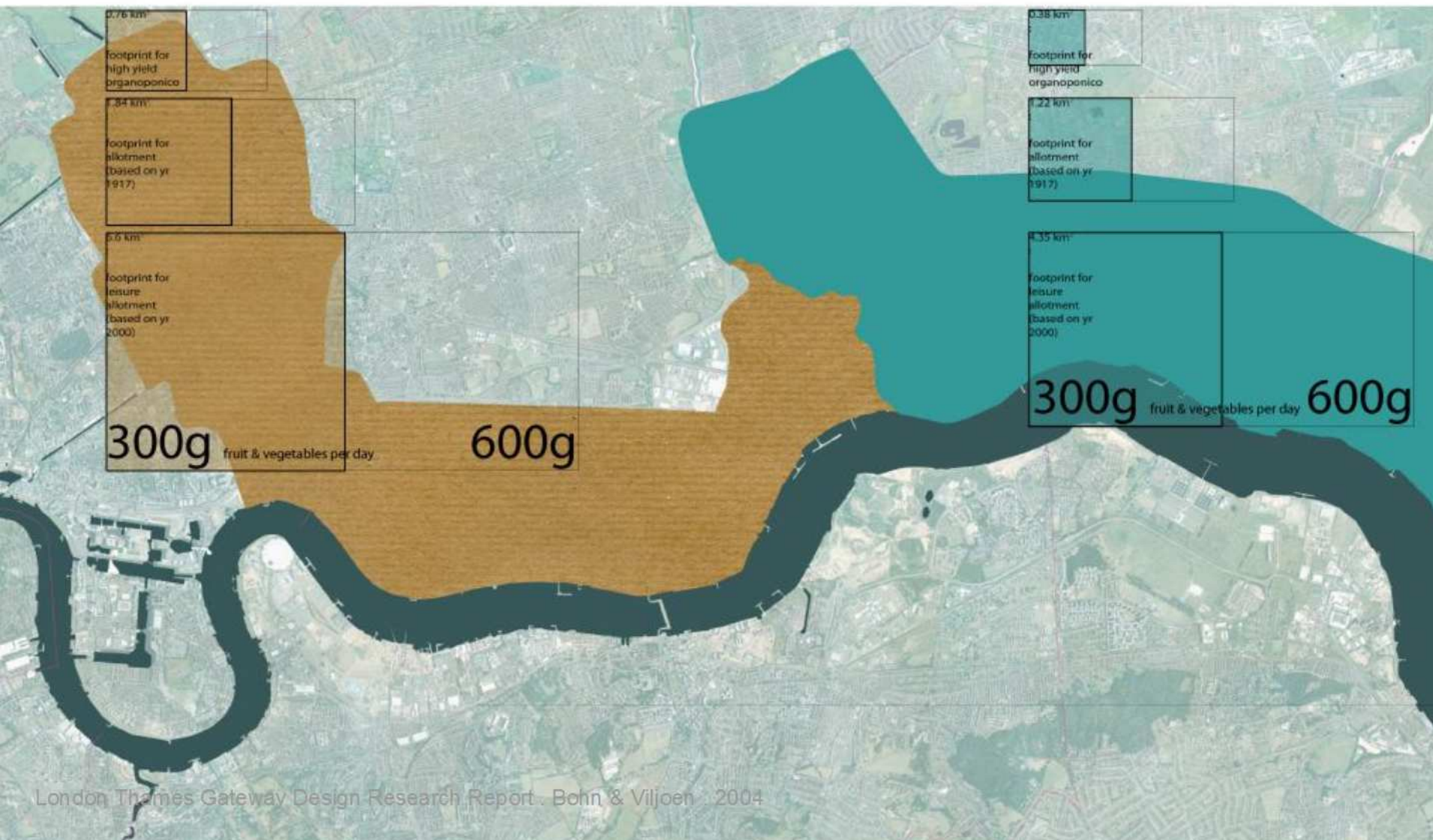
Urban Landscape : Integrated urban design

Thames Gateway proposal for integration of urban agriculture into London's expansion area



London Thames Gateway Design Research Report . Bohn & Viljoen . 2004

Integrated Urban Design



Integrated Urban Design

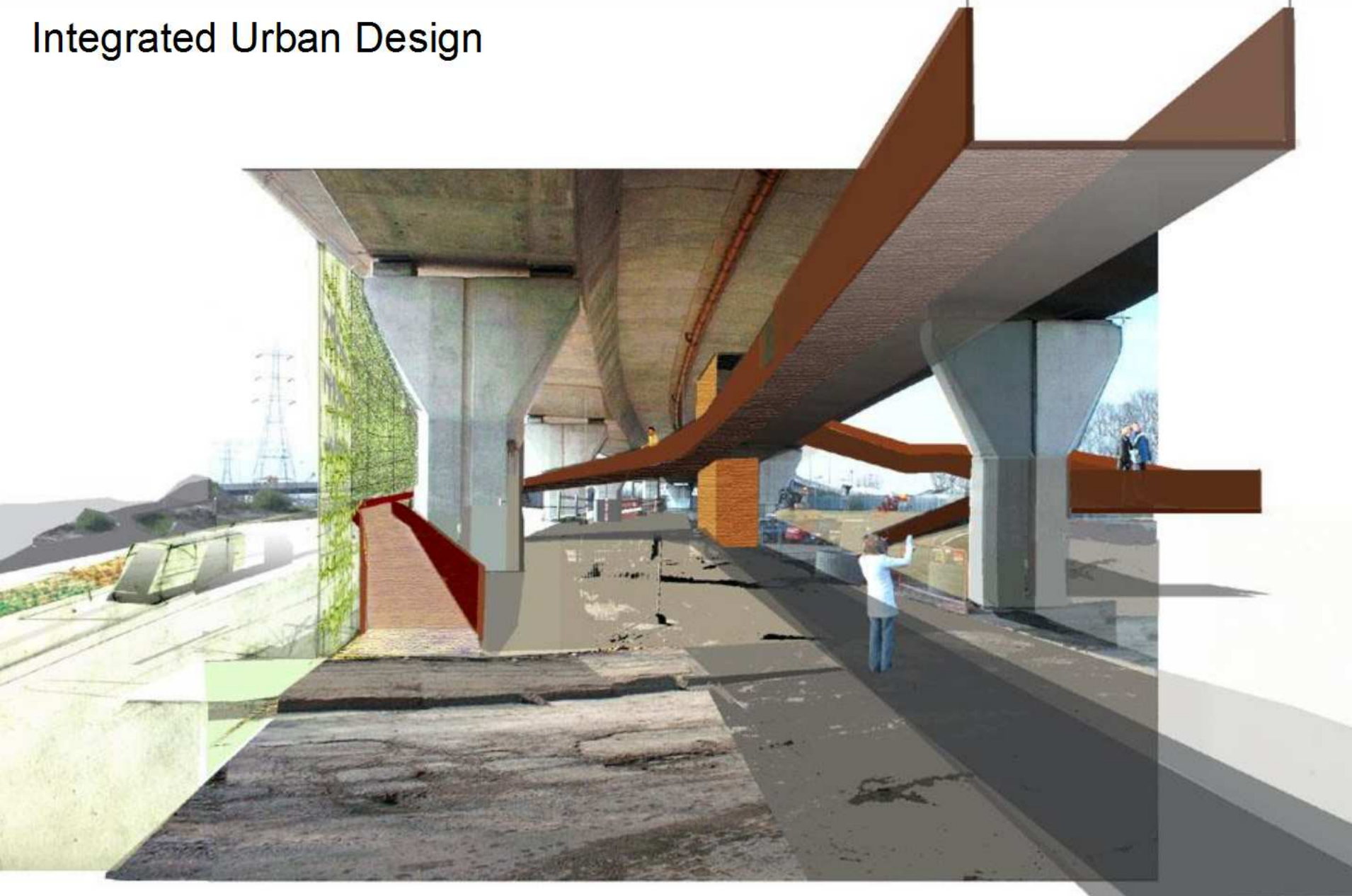


London Riverside : 21754 planned new housing units

London Thames Gateway Design Research Report . Bohn & Viljoen . 2004

How will CPUL look?

Integrated Urban Design



London Thames Gateway Design Research Report . Bohn & Viljoen . 2004

The Growing Balcony



image: Bohn&Viljoen . 2009

The CPUL City Toolkit : Actions, Planning, Elements & Design



1

(1) Work with local food groups



2

(2) Stage events, create meeting occasions



3

(3) Combine top-down and bottom-up strategies



4

(4) Map physical resources, land, water and sun



5

(5) Make no-waste systems: compost, grow, eat, compost



6

(6) Ecological intensification on open urban space



7

(7) New economic models & fair trade for farmers



8

(8) Think 3d: raised beds, walls, roofs, fences

(9) See the potential for urban agriculture as organic ornament

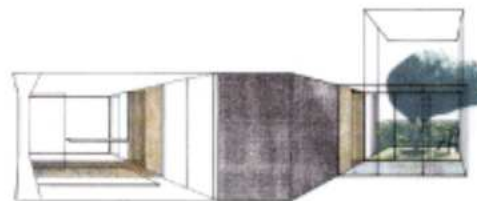
(10) – (12) Develop strategies for different densities



9



10



11



12

images: Bohn&Viljoen

Conclusion:

- THINK ESSENTIAL INFRASTRUCTURE
- MAKE POLICY
- DO DESIGN FOR URBAN AGRICULTURE

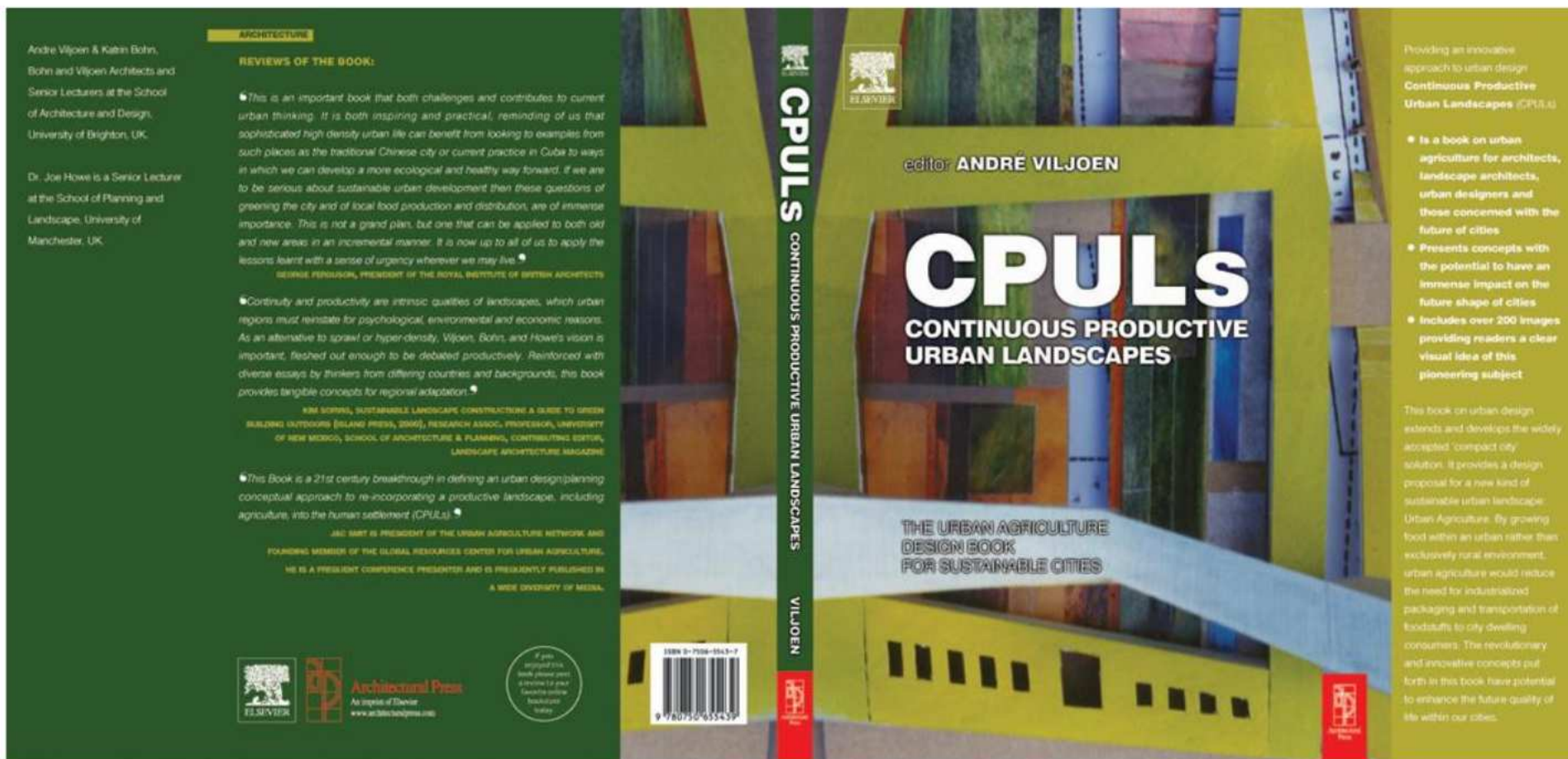


image: Bohn&Viljoen, 2009

CPUL City



images: Bohn&Viljoen



for **more information** see the book: Continuous Productive Urban Landscapes (CPULs)

The urban agriculture design book for sustainable cities.

Editor André Viljoen, Published by the Architectural Press, first printing February 2005

RIBA book of the week, February 2005, and cited as suggested reading by the Royal Commission on Environmental Pollution, for their investigation into Urban Development (2005)

