



Production Landscapes Workshop 'grow your own'

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ARNARP, Sweden

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Foodprints & the city

Project - Foodprints

Inspired by SYSTEMS

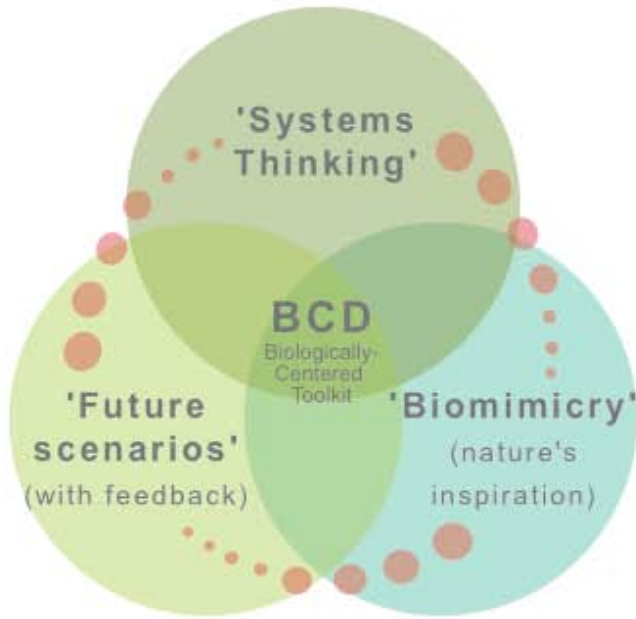
Stockholm, SE

Project aims look through a 'food system' lens:

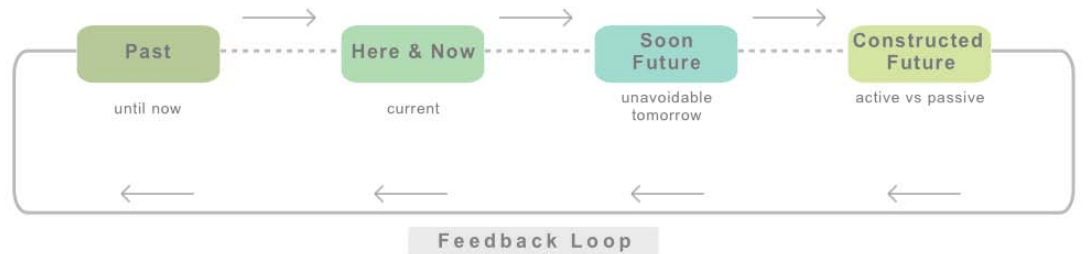
- promoting biodiversity links in the built environment
- Model a 'resilient' city – mimicking natural ecosystems

Biologically-Centered Design Toolkit (BCD)

Toolkit Components



BCD; 3 lenses of perspective



© Orru / Zetterquist

Future scenario building with feedback loops



Drivers of Change



© Arup

Active research



Garden of connections

NL - Stroom
- Wietske Maas
- Debra Solomon
- Proef
- Cafe Noorderlicht
- BOSKOI
- Avalon Foundation
BE - Rasa Alksnyte
- Nadine
JP - Maki Ueda
UK - Galen Wilford
- Carolyn Steel
- Tamara Horbacka
SE - Martin Avila
- Erik Sjödin
- Andrea Hvistendahl
- Stadsjord
NO - Pushak

artistic
interventions

NL - Bioneers
- design boost
BE - Food Loop at FoAM
- luminous green 2010
IT - Arch Venice Biennale
UK - AESOP sust. food
SE - Swefair
- Borås
- bioinspired forum

conferences /
workshops

NL - FoAM
- Premsela (agri-cultuur)
- Biomimicry NL
- EOSTA
- RUAF foundation
BE - Sense of taste
- Biomimicry EU
USA - Biomimicry Institute
UK - Tasting the future
- the design embasssy
- Loop ph
- Futerra
- CAT (wales)
SE - Stockholm resilience centre
- Albaeco
- Kultivator
- Gastronomic society
- Tällberg foundation
- KTH; industrial ecology
- NIRAS (soil remediation)
- Konstfack
- urban farmers
- centre for sust. agriculture
DK - Cultures / futures
- kultura 21
NO - Fab Lab

organisations /
institutions

NL - gezonde gronden
- De Kaas
- Gaston Remmers
BE - Eco-innovation
- Kobi permaculture
- Nadine (wasteland)
- Cressana
UK - Hackney city farm
- sidewalk farms
- 2012 community gardens
- Life line (ireland)
- CAT (wales)
USA - Detroit (Will Allen)
- High line (nyc)
- NYC com. gardens
- Mangroves (Key west)
IT - Spazi Verde
- window farming Milano
- community farming Pescara
DE - Prinzess innengarten
SE - vinterviken / tanto lunden
- rosendahls trädgardar
- Järna nibble

farms / urban growing
garden interventions

Mapping food behaviors

visualizing innovation

communicating

collaborating



Mapping food behaviors

stakeholders



what

where

who

how

why

when

Mapping food behaviors opportunities



what

where

who

how

why

when

Mapping food behaviors parameters



what

where

who

how

why

when

Mapping food behaviors

Future scenario building & paradigm shifting



what

where

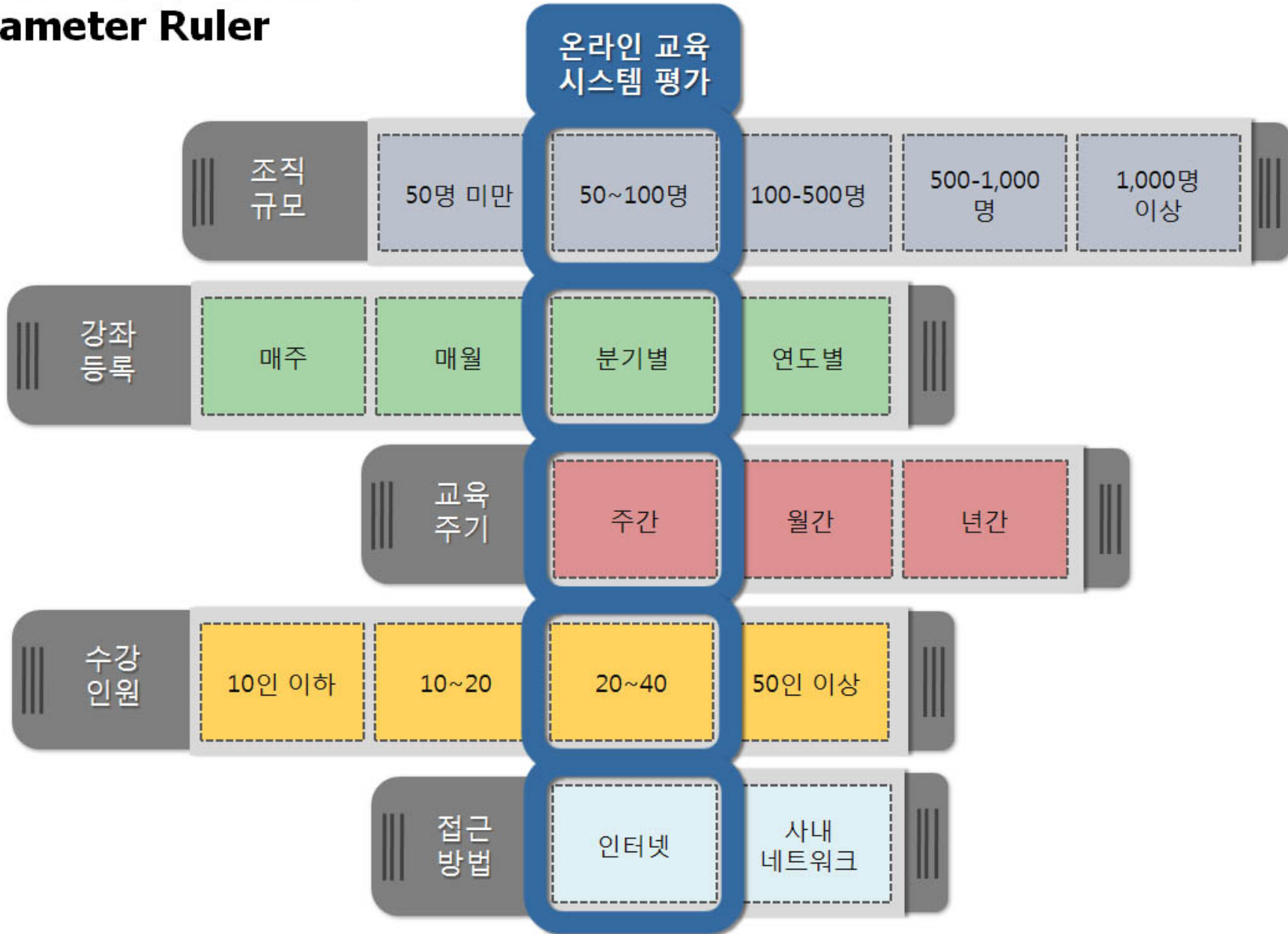
who

how

why

when

온라인교육 시스템 평가 Parameter Ruler



FOOD LOGISTICS Expiration dates Packaging Animal welfare Farming technology Food technology Waste system Food Legislation / micro climate Costs / Accessibility Land use Land ownership Trade & distribution Stake-holders map

CULTURAL TYPOLOGIES Diet Food Relationship (wasted) Inequality Accessibility Health Healthcare costs Urbanisation Growing population Localised Production Mass Production

ECOSYSTEM TYPOLOGIES Species (incl. homo sapiens) Marine Land Coastal development Bio-diversity/ Monoculture Feedback loops (metabolism) Resilience

ENVIRONMENTAL TYPOLOGIES Soil quality Food quality/ nutritional value Meat consumption Energy Water Air Fossil fuels Resource depletion Climate change Micro-climate Peak oil

GROWING INFRASTRUCTURE TYPOLOGIES Window farming Green roofs Vertical gardens Greenhouses Food markets Street level gardens Community gardens Allotments City-Farms (edge¢re) Wild edibles

FARMING TYPOLOGIES Aeroponic Aquaponics Hydroponics Permaculture Laboratory farming Conventional farming Organic farming Biodynamic farming Agro forestry

URBAN TYPOLOGIES Facade Roofs Building (int/ext) Waste centre Street Market Places Parks Open spaces Water (in / on / by over)

FOOD MANDALA Kilojoules Soil factor Place factor Food typologies Seasonal food

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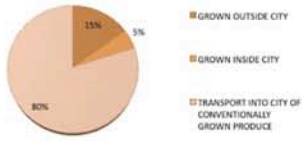
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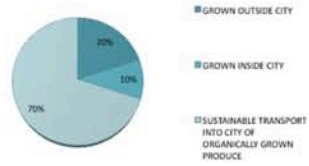
5 Eco-systematic scenarios

Winter Strawberries



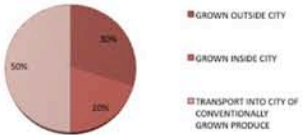
Winter strawberries

Winter Parsnips



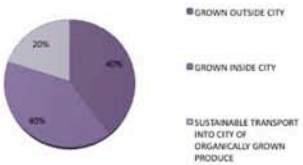
Winter parsnips

Not-Ripe-Enough Strawberries



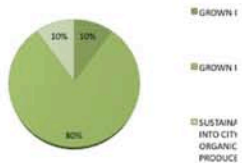
Not-ripe-enough Strawberries

Rurban Strawberries



Rurban strawberries

Wild Strawberries



Wild strawberries

Parameters used:

- % Grown outside city
- % Grown inside city
- % Transported into city

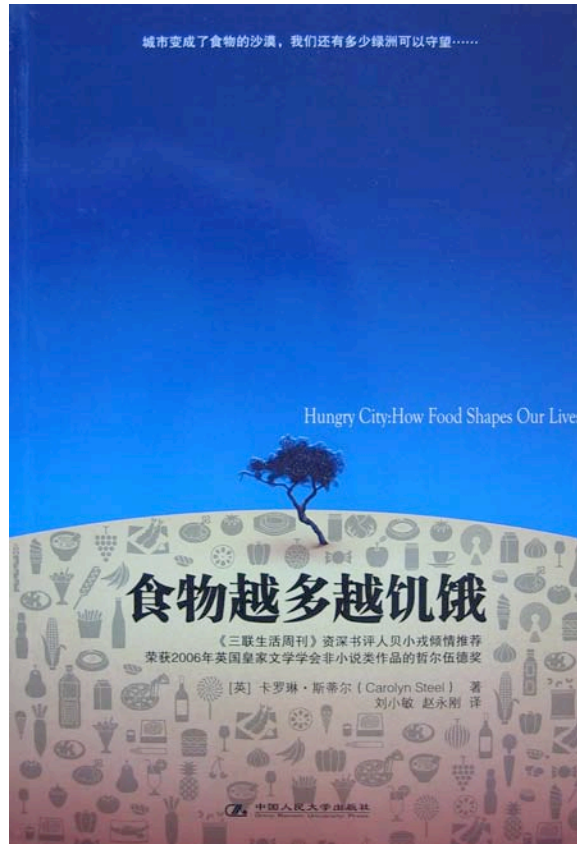
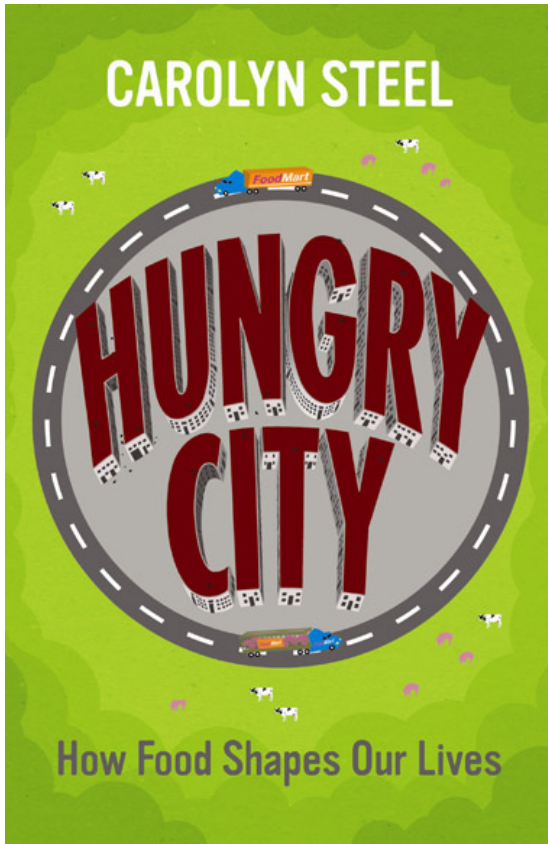
the meal - 'Måltid'

"Architecture is the art of reconciliation between ourselves and the world, and this mediation takes place through the senses" *Juhani Pallasmaa*



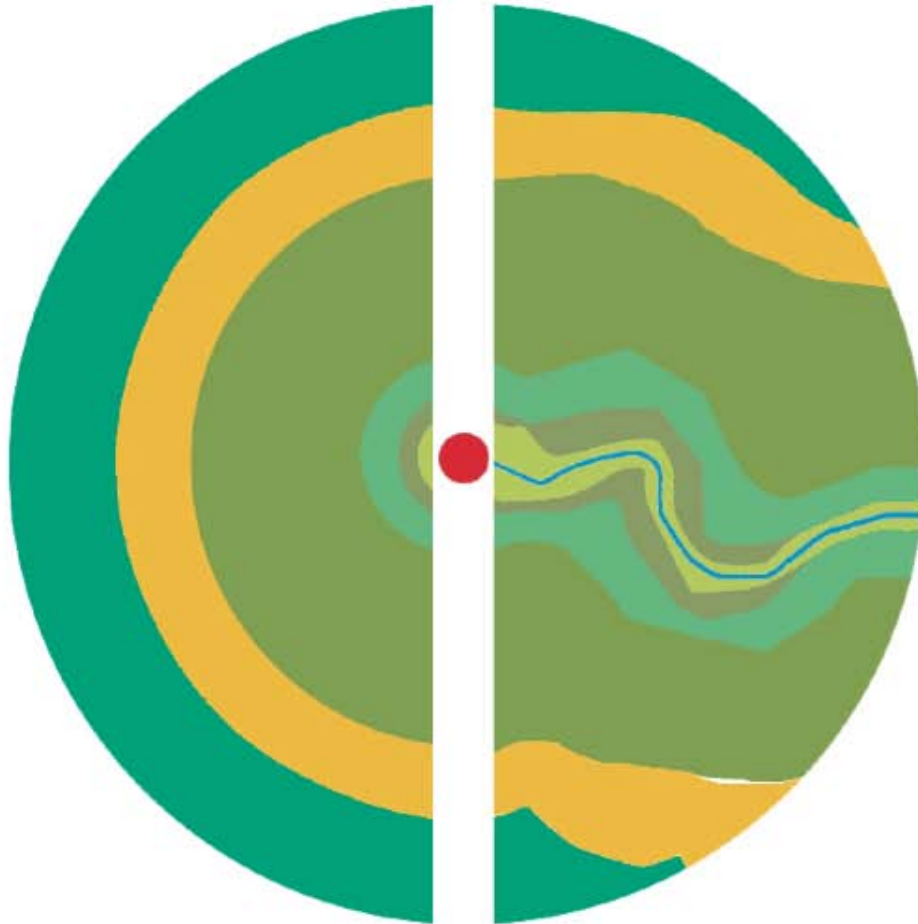
Hungry City

how food shapes our lives?



The Isolated State

Johan van thunen 1826



Isolated States

CITY WITH RIVER

-  **City**
-  **River**
-  **Market Gardens & Dairy**
-  **Firewood**
-  **Intense Crops**
-  **Crops & Pastures**
-  **Three-field System**
-  **Livestock (animals)**

Source:

Johann Von Thünen *Isolated States* 1826

Carolyn Steel 'Hungry City'

Some Facts – global

- Agriculture & forestry account for 1/3 of all GHG emissions
- 20 million hectares of existing arable land is degraded
- 19 million hectares of rainforest are lost each year
- Peak Phosphate reached peak in 1989 globally

Some Facts - individual

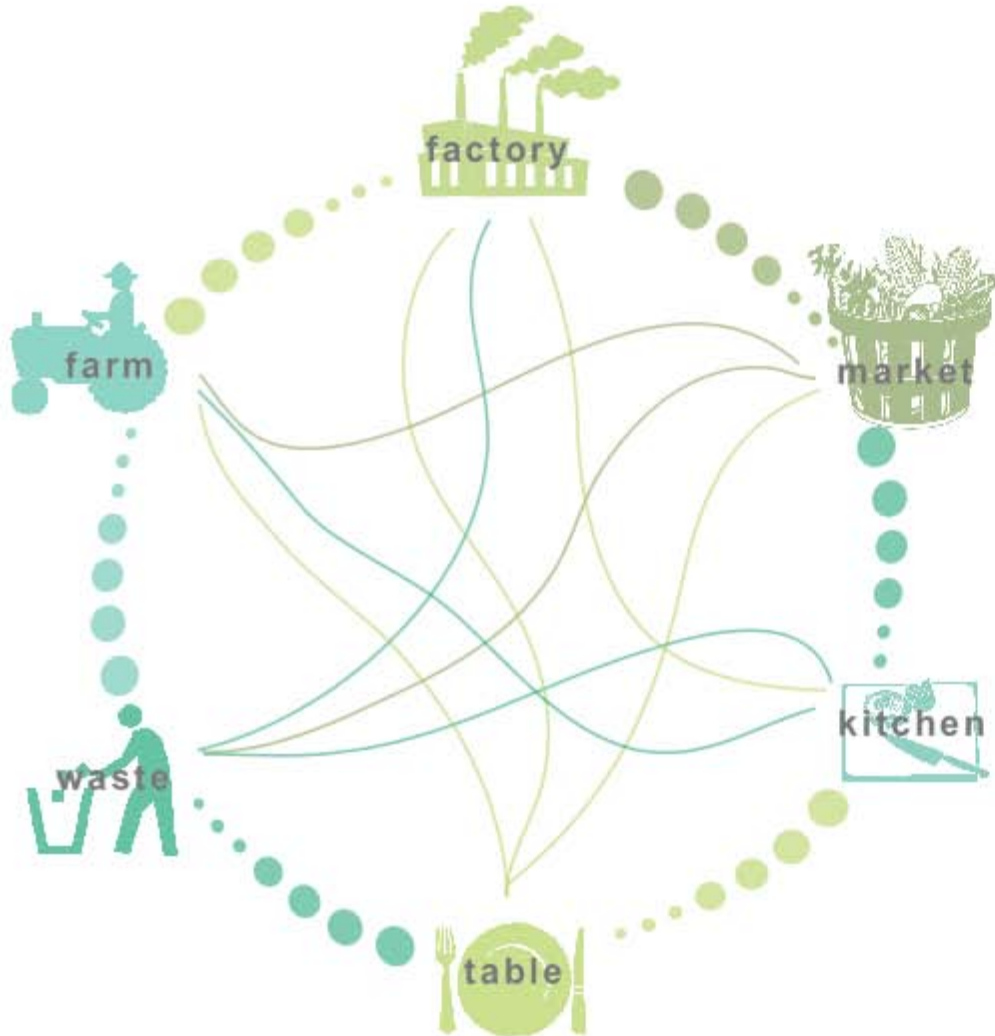
- It takes 10 calories of fossil-fuel energy to produce 1 calorie of modern supermarket food
- About 30-50% of food produced in rich countries is wasted
- Over 1 billion people worldwide are overweight & 1 billion are hungry
- Meat consumption-one century ago at 25kg/head; Now at 80 kg/head

Some Facts – food monopoly's

- 30 companies handle 30% of ALL global food trade
- 5 companies hold control of bananas
- 3 companies hold control on tea (85% of tea market)
- 5 companies hold 90% control of grain

Urban Food Cycles

Our complex social food networks



Food Connections

Social Connections
(social food networks)

Food Cycle
(closed-loop)

Source:

Carolyn Steel 'Hungry City'



Lina Kusaite

Plant guilds & urban environments



name ground-elder
Pegopodium-pollense



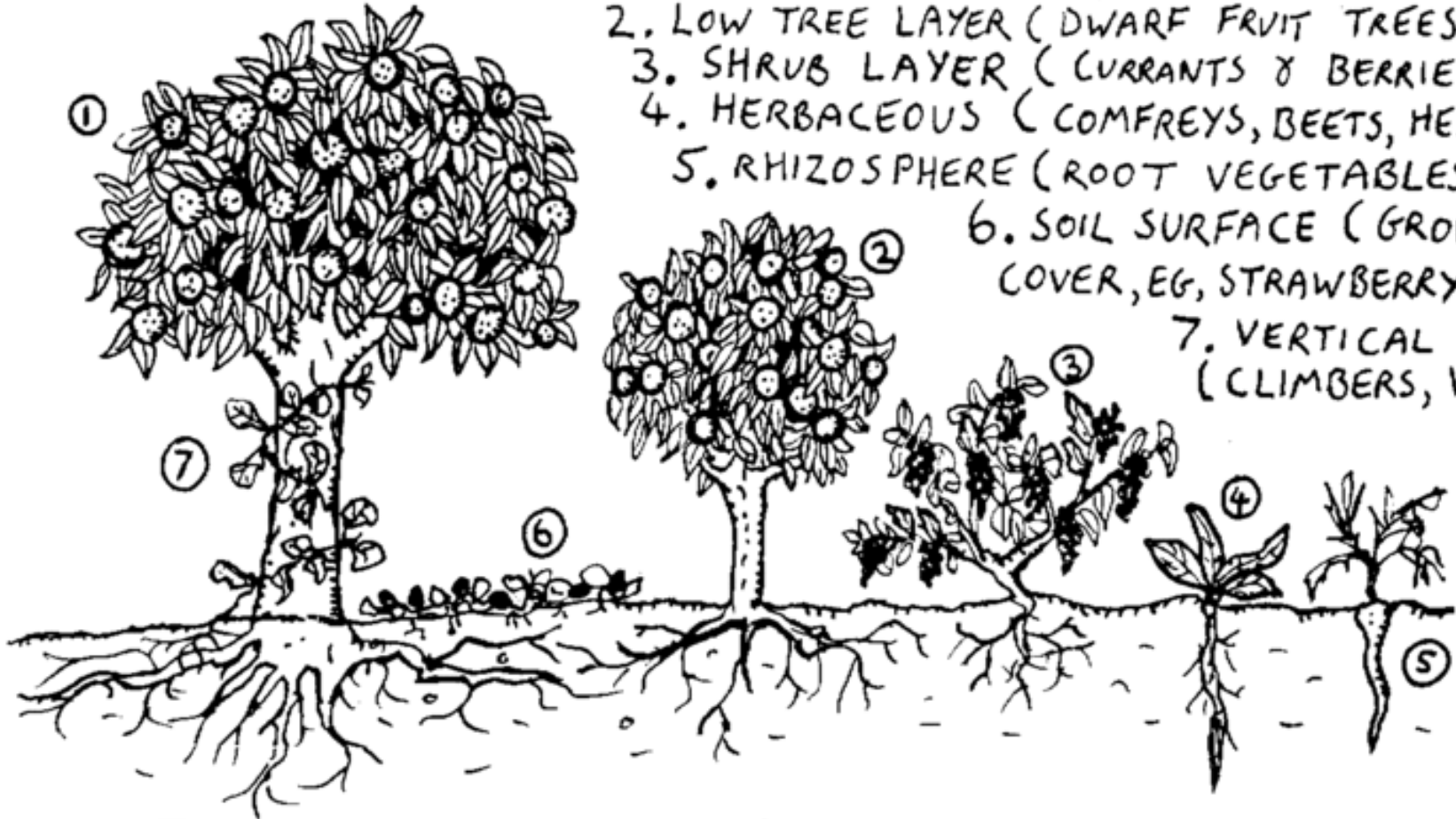


ME
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1. CANOPY (LARGE FRUIT & NUT TREES)
2. LOW TREE LAYER (DWARF FRUIT TREES)
3. SHRUB LAYER (CURRANTS & BERRIES)
4. HERBACEOUS (COMFREYS, BEETS, HERBS)
5. RHIZOSPHERE (ROOT VEGETABLES)
6. SOIL SURFACE (GROUND COVER, EG, STRAWBERRY, ETC)
7. VERTICAL LAYER (CLIMBERS, VINES)



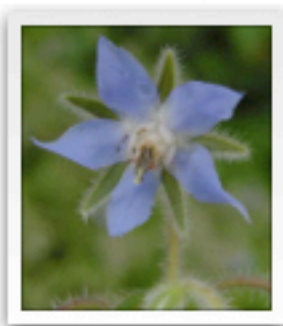
THE FOREST GARDEN: A SEVEN LEVEL BENEFICIAL GUILD



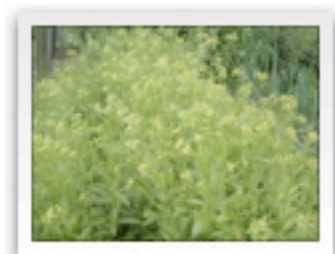




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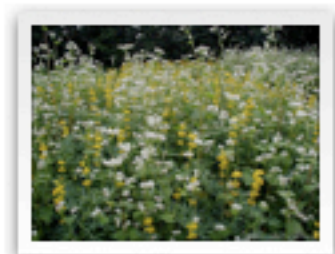
blauwe lupinen.JPG



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mosterdzaad.jpg



boekweit en gel lupinen.JPG



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Phacelia 2-1.jpg



wikken.jpg















Johan Zetterquist

Growing infrastructures



21/07/2010



















spice • versa

Hanging Herb Growing System

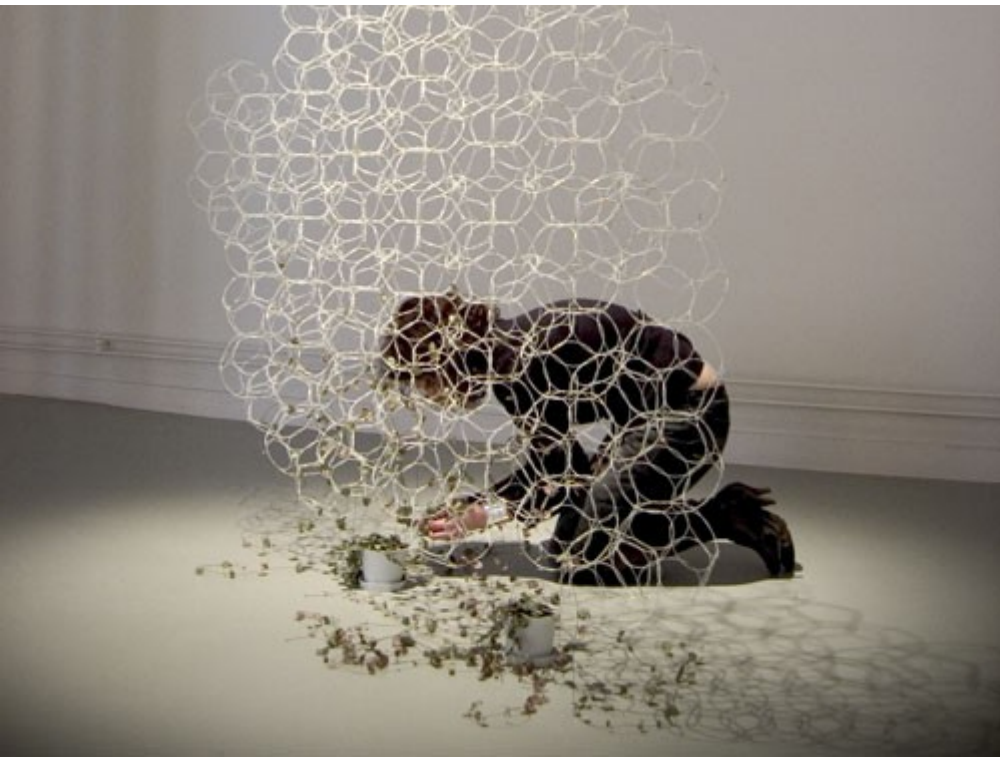






Future Growing, LLC. May 2010 Commercial Aeroponic Tower Farm Producing Locally Grown and Pesticide Free Lettuces, Herbs, Edible Flowers, Vegetables, and Tilapia Fish. This Off Grid Amish Farm Utilizes Rainwater Collection, Geothermal Energy, and Many Other Sustainable Practices to Maintain the Greenhouse Facility.





















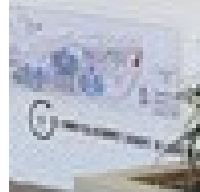




ANCE DE L'EAU EN VILLE ?

in the city?

- 1. L'EAU EN VILLE ?
- 2. L'EAU EN VILLE ?
- 3. L'EAU EN VILLE ?
- 4. L'EAU EN VILLE ?















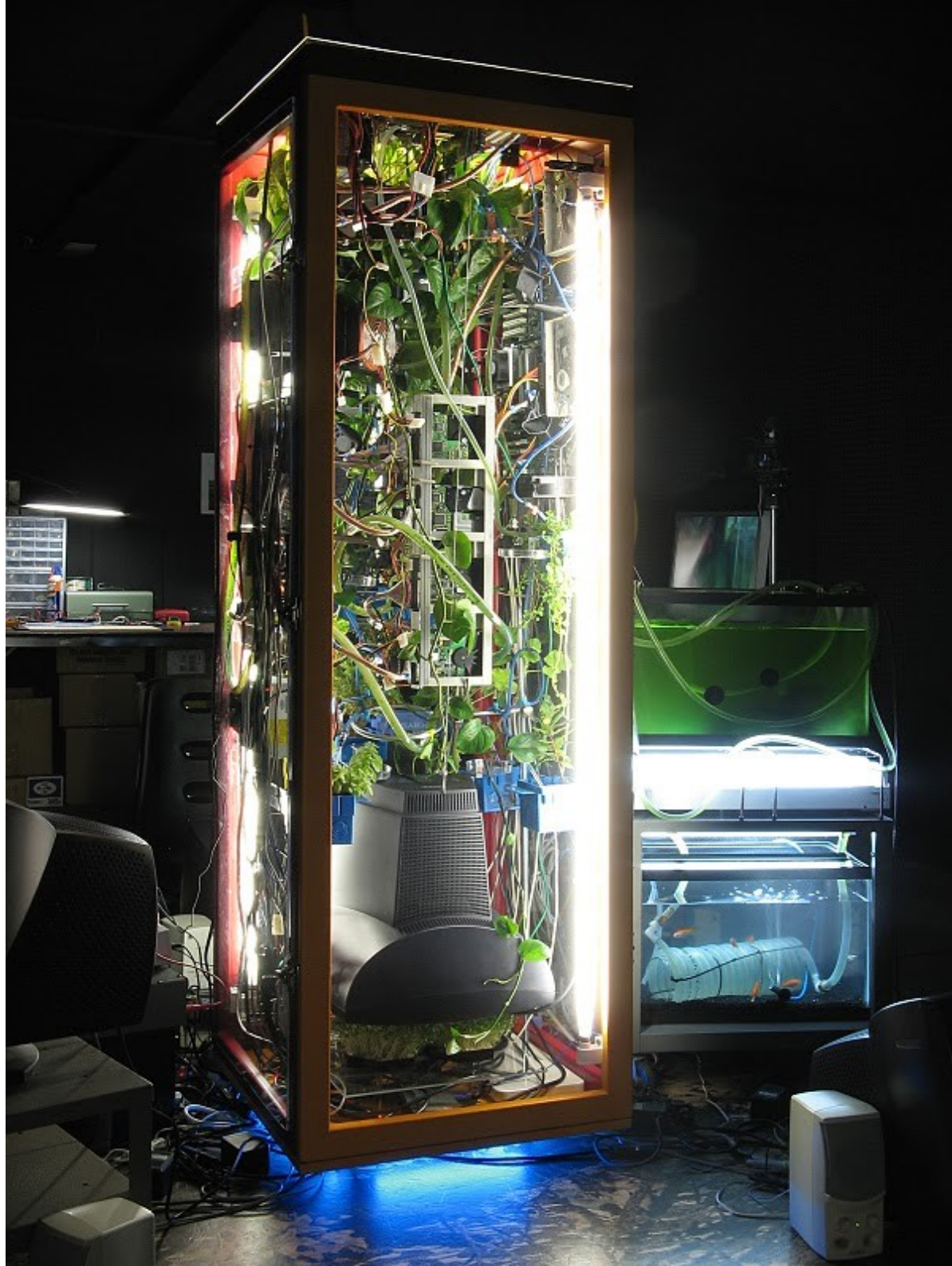










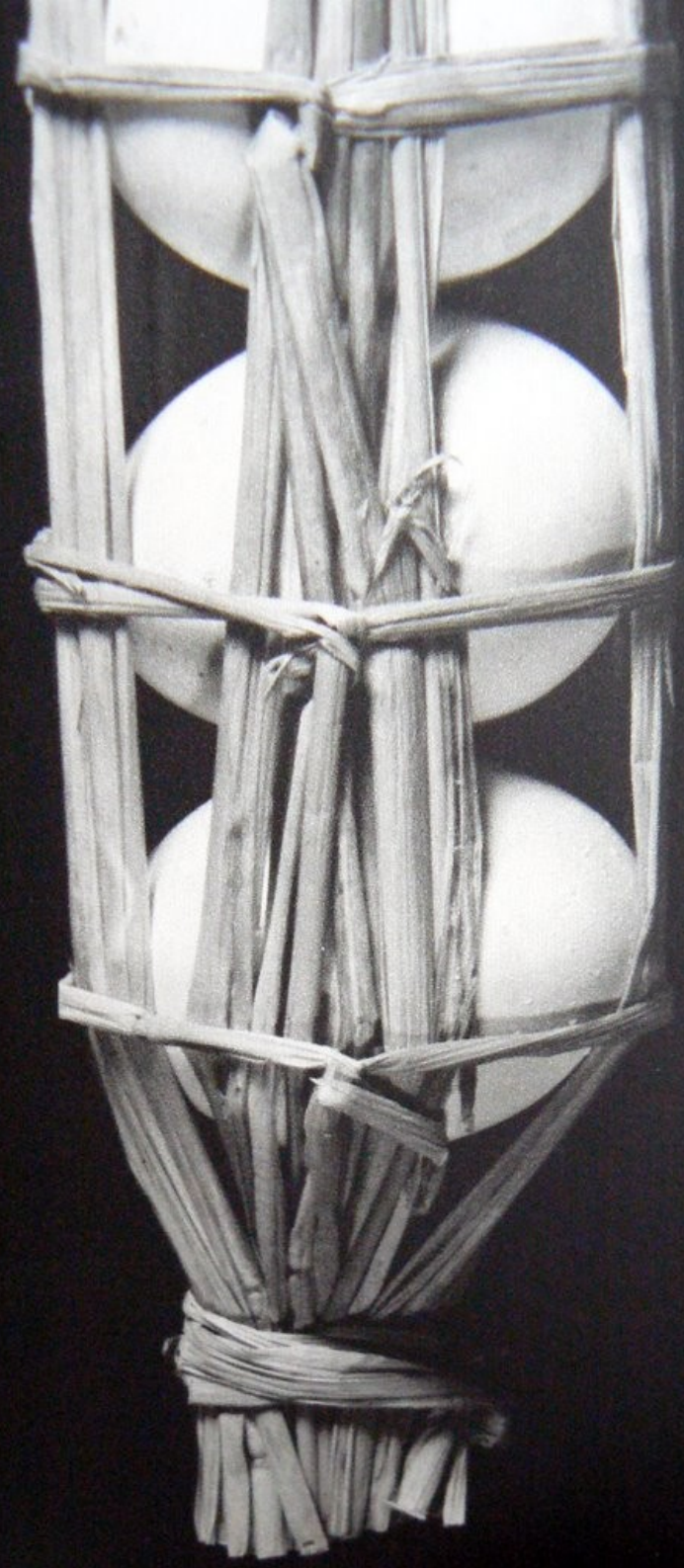


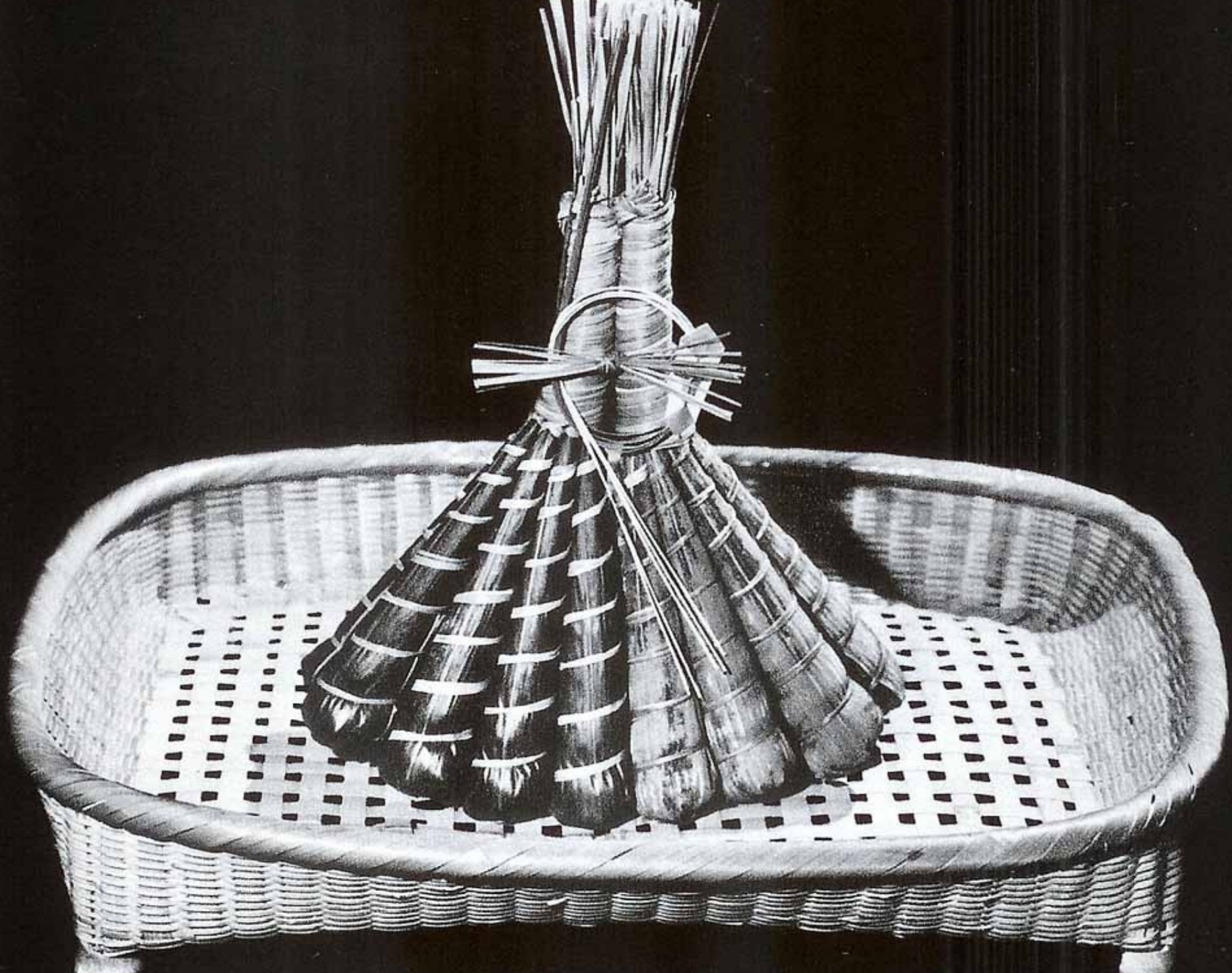


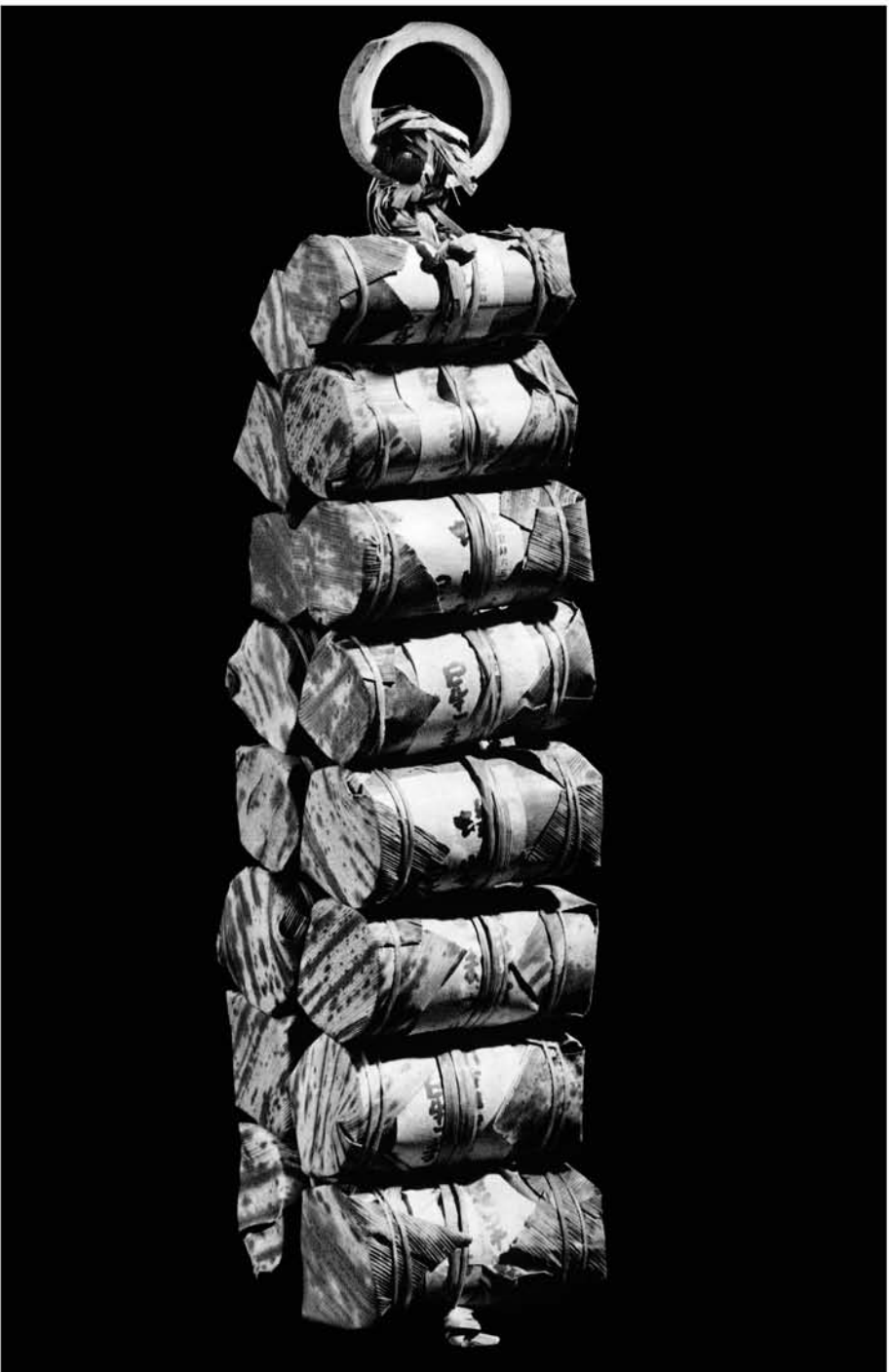


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WINDOW GARDEN.—INTERIOR.