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Eco-Industrial Parks
(sustainable business sites)

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Om de datum in te stellen:
* >Invoegen >Datum en tijd
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The agenda for today:

- Changing locational tendencies
- Segmentation and typology of business sites
- Environmental aspects: sustainable business sites
- The ‘area’ and the ‘streams’ option
- Parkmanagement as a tool for careful ind. land use
- Conclusions

Background: a changing demand for industrial and business sites

- In Europe, 100 years ago, *transport costs* and *labour costs* were the dominant location factors, because they varied so much in space
- Later, transport and labour cost became more even between different locations. In Europe and the US, 50 years ago, *agglomeration advantages* became a dominant location factor
- Today, in large parts of Europe and the US, the dominant factors of the past are available at the same cost at many locations, and have less influence on firm location choice *('level playing field')*
- New, formerly trivial location factors come to the fore

New location factors

- Many of the 'new' location factors can be labelled as '*soft* location factors':

  Presence of knowledge centres,
  good housing quality, leisure facilities,
  good quality of factory/office buildings
  and of their surroundings,
  government regulations,
  environmental issues

- Firms are *different* in their demand for such factors
- More and more firms prefer a site that is *dedicated* to *their* type of business and conforms *their* special location demands. *Special labels for sites* are an answer to this

Changing location tendencies

DOMINANT LOCATION FACTORS

1900/1950/2000

› *100 years ago:*
- transport costs
- labour costs

› *in the nineteen fities:*
- agglomeration factors

› *anno 2000:*
- knowledge and technology
- living climate
- environmental issues
- government rules
- image & representation

from : economic and technical

to : social and economic

Theories:

Weber's least cost theory

Growth pole Theory

Behavioral, institutional and evolutionary theories

› (Pellenbarg 1999)

More present location tendencies, especially for high quality production and service firms:

- Continuity is important (sustainability)
- Local and regional networks are important
- Regional factors are becoming more crucial
- Many firms are footloose, but also:
- Managers are becoming more demanding
- Quality is important, in all respects
- Firms demand special sector-related conditions
- *Result: segmentation of the location market*

SEGMENTS OF THE LOCATION MARKET (*Labels for locations*)

- Business parks
- Office parks
- Logistic centres
- Distribution parks
- VAL-locations
- Multimodal centres
- Technological centres
- Agro-centres
- Science parks
- Research parks
- Brain parks
- Teleports
- Agro-centres
- Medical parks
- Air parks
- Eco-parks

Environmental conditions and firm location

- *Old planning paradigm:*

  >> Polluting firms can settle on selected sites that allow a higher category of environmental damage
  RESULT:
  >> 'dirty sites' continue their existence

- *New planning paradigm:*

  >> Firms are encouraged to settle on sites where all firms agree to conform to certain evironmental standards
  RESULT:
  >> more and more business sites are 'sustainable sites'

What is a SUSTAINABLE BUSINESS SITE ???

- *Definition:*
  Sustainable business sites are a *cooperation* on business sites between *firms*, and between firms and *governments*, aiming at
  1) an *improved firm performance*,
  2) a *reduction of environmental damage*, and
  3) a more *efficient use of space*
  (Ministry Econ. Affairs, 1998 Memorandum Sustainable Business Sites)

How do you create a sustainable business site?

Two options:

- Try to reach your goals by a more efficient and sustainable *use of space* on the site (the AREAS option)

- Try to reach your goals by a more efficient and sustainable *organisation of the production processes* on the site (the STREAMS option)

STREAMS *

exchange of energy raw materials and water	joint use of utilities and firm functions
collective gathering and removal of waste materials	combining transport of goods and people

AREAS

more intensive use of space	high-yielding public utilities
joint commercial firm facilities	multimodal transport and high quality publ.transport

* Corresponds to 'industrial ecology')

SUSTAINABILITY AND UNCERTAINTY

STREAMS

sustainable ways of combining and attuning production processes

level of sustaina-bility

carrying plans for sustainable site arrangement into effect

AREAS

planning for sustainable site arrangement

level of uncertainty

Activities (top-10) on sustainable sites in the Netherlands

activity	*frequency*	*("streams")*	*("areas")*
Joint parking facilities	23		x
Joint safety systems	22		x
Joint maintenance systems	18		x
Separating sewer systems	18		x
Collective waste removal contracts	15	x	
Heat/power combinations	14		x
Use of rest warmth/cold	14	x	
Collective car wash installations	13	x	
Joint energy systems	12	x	
Joint facilities for telematics	12		x
Hotel, restaurants, gas stations	12		x

Succes factors for eco-industrial parks

- Build trust among potential participants
- Respect each other's interests
- Participants should cooperate out of free will
- Centre discussions on the ideas of stakeholders
- Create an association of participants
- Don't start too soon with the implementation
- Process registration for monitoring ecological targets

Recommendations

- Make sure there will be short time successes (participants want to see results/profits)
- Make sure there will be sufficient financial means for the project
- Make use of the existing management capacity of the firms that participate
- Participating firms should not be located to far away from each other
- Participating firms best are rather different in nature
- Take care of good public relations

From sustainability to continuity

- Sustainability usually is understood as an environmental value. BUT:
- Environment and Business should BOTH survive !!
- Not only nature and landscape, but also *investments* should retain their value
- Sustainability: ecology AND economy
- Future value on eco-industrial parks
  = lasting profitability for the firms on the site

Organisation

- Who is *responsible* for the realisation of the *various goals* that are envisaged for eco-industrial parks/sustainable business sites?
  - *1) an improved firm performance,*
  - *2) a reduction of environmental damage, and*
  - *3) a more efficient use of space*
- The entrepreneurs?
  The site developers?
  Or the local government?
  Or all of them together?
- *Park management* as a new tool for careful industrial and business land use

Park Management: Definitions

process

a way of organizing the management of a business site (Hoogzaad 2001)

a method to manage the entire process of design, development, distribution and management of both site and buildings of business locations (van Engelenburg et al 1998)

partners

a method to induce different actors to organize the management and maintenance of public space (Van Leeuwen et al 2002)

profit

is a process dealing with the arrangement and management of both built and unbuilt spaces and the development and exploitation of both collective and individual facilities and services on business sites. Park management furthers cooperation between firms on such sites. The ultimate goal is a higher quality level of both public and private space (Ecorys 2002)

Partners and Profits of Park Management

GOVERNMENT *Lower cost of site maintenance* *Positive image effects* *Improved competitive position* *Increase in number of jobs* *Decrease of pollution* *More (property) tax revenues* *Strategic instrument environmental policy*	**FIRMS** *Focus on core activities* *Influence on working climate* *Safe and pleasant work conditions* *Employees satisfied* *Improved competitive position* *Improved image* *Cost reductions by collective purchasing*
INVESTORS / DEVELOPERS *Higher value of real estate* *Real estate retains value* *New&remunerative independent activity* *Improved image*	**SOCIETY / ENVIRONMENT** *Positive environmental effects* *Careful (economic) land use* *Joint use of facilities* *Increase of spatial quality*

Source: Ecorys 2002 (adaptation)

Park Management: Dilemma's

- Who is the principal actor?
  Whose interest comes first?
- Rules for admission: strict or loose?
- Categories of participants:
  "park management packages"

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The Ladder of Park Management Activity

simple

- *Arrangement of public spaces*
- *Facility sharing*
- *Space sharing*
- *Utility sharing*
- *Production process sym-bioses*

complex

radical

Maintenance of roads/greens/plantations Signposting on the site Security provisions Cleaning services Telecommunication facilities
Nursery Sport facilities Restaurative facilities, catering, cafe's Bank, post office
Parking facilities Public transport facilities Car pooling, transferia Combined transport facilities
Intensive/careful land use (multi storey, flexible design) Collective buildings Sustainable building materials
Waste management Water supply Water purification Energy supply, heat/power installations
Exchange of energy and water between individual firms Connecting the material flows of production processes

Economic targets
(individual interest, firm profits central)

Ecologic targets
(collective interest, environmental profits central)

Park Management (PM): Conclusions

- PM includes a broad range of activities
- PM is a nice new tool for careful industrial land use
- PM ladder: logical sequence of possible activities, related to complexity and nature of interest
- PM ladder: a good basis for selling PM'packages'
- PM shouldn't be dominated by local government, and *shouldn't be used as a tool for regulatory planning*
- PM is a tool of cooperation between public&private partners
- PM is a *tool for consensus planning*, and relates to collaboration, negotiation, persuasion, not regulation

Conclusions for eco-industrial parks/sustainable business sites

- A *strong concept* that is there to stay
- More and more industrial/business sites in the Netherlands are developed as sustainable sites
- *Firm interest* is the crucial success factor
- Ecoparks should stay industrial/business parks in the first place, not nature developing areas
- Broaden the concept of sustainability to *future value*, for businesses *and* environment

Thank you for your attention!