Green, natural, healthy

(Health) potentials of multifunctional urban (green) spaces

Isle of Vilm, 05.10.2016

Background

Research and development project:

Project partners: Participating municipalities:

- Eckernförde

- Leipzig

- München

- Norderstedt
'Urban green' cannot be absolutely equated with urban biodiversity, even if there are overlaps in many cases.

Human health: already a topic in planning and nature conservation? Legal basis

**Federal Building Code, § 1:**
Land use plans have to consider general requirements of healthy living and working conditions

**EIA-Law, § 2:**
Environmental assessments (EIA, SEA) include the assessment and description of impacts of projects, plans and programmes on inter alia human population, including human health, …

**Federal Nature Conservation Act, § 1**
Nature and landscape are to be protected as the basis of human life and health; The recreational functions of nature and landscape have to be protected and maintained

**Different other regulations**
on the protection from immissions of noise, air pollutants, etc.
Human health: already a topic in planning? Practice

- Current planning practice (Spatial Planning, EIA, SEA): focus on the protection of human health against negative impacts (noise, air pollution) of plans and projects
- Landscape plans* often refer to human health indirectly by ensuring the recreational usability of landscapes + by ensuring the quality of different natural processes
- Only few or almost no consideration of health promotion:
  - maintaining health
  - strengthening of health resources
  - establishing health-promoting environments.

* Landscape Planning: Space related, area-covering instrument of nature conservation on local, regional & federal state level. Deals with biodiversity, soil, water, air, climate, landscape & recreation; has to be integrated into comprehensive spatial and land use planning.

Human Health

„Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity.“ (WHO 1946)

Protection and promotion of health by

1. Behavioral prevention (Verhaltensprävention)
   - Modification of individual behaviour

2. Situational prevention (Verhältnisprävention)
   - Changing the environment of people; establishing a healthy urban environment, esp. by enhancing urban green
Health potentials of urban green

- Health-related ecosystem functions with „direct“ relevance for health, i.e. cold air formation & transport, pollutant filtration by soils and vegetation, etc.
- Physical potentials (effects)
- Psychological potentials (effects)
- Social potentials (effects)
- Aesthetic and symbolic potentials (effects)
- Possibly harmful potentials (allergies, disease transmission …)

Requirements of the participating municipalities

Working materials:

a) Science based arguments for municipal practice regarding health effects of urban green
b) Criteria for identifying health-promoting potentials of urban green spaces
c) Requirements of different user groups
a) Scientific findings on health impacts of urban green

- Green space located nearby positively influences general health, mental well-being and quality of life (dependent on urbanity of location)  
  (Maas et al. 2006, Stigsdotter et al. 2010, Van Dillen et al. 2011)
- Positive effects on people with low income are stronger  
  (Mitchell & Popham 2007, 2008)
- Positive relation between „green and health“ mainly explained by stress reduction and social cohesion – physical activity plays a minor role  
  (Groenewegen et al. 2012)
- …

Findings are sometimes contradictory; e.g. species diversity;  
(Lindemann-Mathies et al. 2010, Fuller et al. 2007 vs. Dallimer et al. 2012)

Causality between „green and health“ is sometimes not clear

b) Criteria for identifying health-promoting potentials of urban green spaces // Our intention …

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b) … instead: criteria checklist

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<th>Health components</th>
<th>Criteria</th>
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<td>Perception and Identification (aesthetic and symbolic component)</td>
<td>Features promoting beauty</td>
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<td>Interaction and Integration (social component)</td>
<td>Social interaction</td>
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<td>Experience and Creativity (psychological component)</td>
<td>„Design for all“ (cultures, ages, etc.)</td>
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<td>Relaxation and Regeneration (psychological component)</td>
<td>Retreats</td>
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<td>Exercise (physical health)</td>
<td>Range of play options</td>
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<td>Freedom from health-impairing features and elements</td>
<td>Features and elements reducing adverse health-effects or risks</td>
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<td>(physical health)</td>
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Conducive elements / attributes:

- Striking visual axes within the green space and surrounding areas
- Light and shadow plays, reflections
- Water in various forms
- Rolling terrain, landscaping
- Combination of different ‘outdoor characteristics’, e.g. woody structures and open (meadow) areas
- Variation of natural vegetation and intensively cultivated planting
- Vegetation with a varied shape, texture and structure, flower size
- Berries for birds, bee pastures, species-rich meadows
Criteria checklist – general quality criteria

Independent from different health components, but decisive for actual use:

- Safety
- Cleanliness
- Equipment
- Information / Orientation
- Paths
- Accessibility

b) Criteria

For single green spaces …

… and the total urban green space system

- „catchment areas“
- Distances and area size
- Spatial-functional networking
c) Requirements of different user groups

- Aims: Determining the needs of current/potential users
- Difficult to find universal conclusions as requirements differ from individual to individual

User groups:
- Elderly persons, workers, parents, carers, children, allergy sufferers
- People with physical disabilities
- People with low income
- People with different cultural backgrounds
- People with mental impediments
- Stressed people
- „Non-movers“

Integration of human health issues into landscape planning

3 Possibilities

1. Health as a subject of protection of the SEA of landscape planning: Avoidance of negative health impacts
2. Health as a justification related to landscape planning objectives: Explicit denotation of positive effects of the aims and measures of landscape planning on human health
3. Health as an independent subject of protection of landscape planning: Independent contribution of landscape planning to promote human health
Integration of human health issues into Landscape Planning

Example Ad 1 / 2

7.1.3 Maintenance or new creation of reed beds and wet meadows

Impacts on the subjects of protection „humans and health“, „landscape“, „culture and other assets“

Linear structures along water bodies, depending on their area and type of vegetation, can buffer nitrate immissions and can therefore contribute to minimising these immissions into the groundwater. Thus, they contribute positively towards the subject of protection „health“. The potential richness of native plants, generates different flowering aspects depending on the vegetation period, and therefore enhances the aesthetical landscape value and increases the recreational quality for local people.

Example: SEA landscape plan Liebenwerda
Approaches to an „Recreation and Exercise Network“
A greenway for sustainable mobility, Oranienburg (L. Bloß)

http://www.landschaft.tu-berlin.de/menue/studium_und_lehre/abschlussarbeiten/

Literature

Katrin Rittel, Laura Brodow, Bri Regina Wanka, Dorothea Heitkemper, Denise Schupke, Torsten Wilke, Dennis Moreak, and Stefan Hålland
Grün, natürlich, gesund: Die Potenziale multifunktionaler städtischer Räume

http://www.bfn.de/0502_skriptliste.html
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