Multi-Dynamics and Time aspects in spatial planning and design
Conference Deltas in Times of Climate Change
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Developments (over 150 Years)
Low-lying areas → build up areas
Most vulnerable areas and multi-functional
Plans for the future (speculation)
incorporating past (recollection) & present (description)

Creating a plan is step 1

But what’s involved?

Cyclic processes
In early days people were strongly connected to seasons for everyday life (food and culture)
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29/30 September 2010

Changes in environment and use (sudden or gradually)

1850 heathland - "purple landscape"

1920 coal mining - "black landscape"

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Changes in environment and use (sudden or gradually)

1980 Sand pit – "white" landscape

1990 lakes – "Blue" landscape
Changes in meaning (gradually or sudden)

Sagrada Familia

Business area

Temporary Water Inconvenience ✔

Incorporating Water
“Long-term and short-term”

Time space compression

April 2010

1956

2010

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Bureaucracy
People / Inhabitants – Users --

Political decision-making / Quick results

Attitude: Get tangible results before election time

But how about long-term projects?
Dealing with different time frame

Time Differences and Uncertainties
Different moments involvement

Planning = Dealing with Past+Present+Future

How to deal with time and time diversity in planning & design

Time embedded through
- Procedures
- Maturity / Growth
  - incubation and changes
  - carrying capacity & resilience
  - collaboration
Differentiation in dynamics

**Procedures:**
- length, sequence of activities, frequencies of actions, moment in history

**Maturity**
- **Capability:** Hägerstrand constraint theory (1960’s)
  - layout and carrying capacity for each separate land use and its development rhythm
- **Coupling:** contextual aspects, combining land uses (multifunctional in space and time)
- **Authority:** rules and laws determine possibilities and development (include procedures)

Legibility of a landscape

**Coherence in the landscape:**
- Horizontal (spatial layout and organisations)
- Vertical (soil/water and land use)
- Cyclic (eg season)
- Historical

(Hendriks & Stobbelaar, 2006)
From design delivery to life cycle approach

Spatial task changes from focus on spatial quantity to spatial quality.

Combining costs and profits:

Costs: €€ + €€ = €€€
Profits: € + € = €€€

Resilience interpretation

Move with (sudden) (extreme) events and recover (quickly) to “normal” after a (short) period

But what is “normal” after the event? And what if it has changed more permanently?
Cases

- Temporary housing in future water storage areas (Davidse 2009)
- Biomass energy production in a housing development area (Zwartkruis 2009)
Context: heavy rainfall due to climate change

- Take into account future vulnerability
- Take into account the uncertainties about climate change
- Increase adaptability
- In practice it's difficult to deal with the long-term
- On local scale: insufficient knowledge, governmental power and ‘know how’

- Offer action perspective on short term; take into account interests on the long term

Temporary housing

Temporary housing in areas reserved for future water storage

- Action perspective on short term
- More flexibility in space
- Multifunctional land use, with temporal dimension
- Secure space for water storage

- Answer to changing housing requirements (qualitative as well as quantitative)
- Reduce costs (on long term)
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Temporary housing

- Protection against wind, rain, cold, heat: HOUSING
- Max 30 to 40 years
- Materials: apply life-cycle approach
- Link to local infrastructure (water, energy, data, communication)
- Renewable energy on local scale

Temporary landuses: Functions that come and go

(Zwartkruis, 2009)

Temporary functions

Why not much applied?
- Ownership: investing, responsibility, development, maintenance and profit
- Afraid for delays because of the flora and fauna law for example
- Attachment to temporary functions, protest to replace them, communication
- What functions could be applied

Possible temporary functions

- Organise events
- Store products and materials
- Use for agriculture or cattle
- Temporary nature
- Temporary buildings
- Travelling gardens
- Water storage
- Allotment gardens
- Biomass production
- Other energy sources

Schuytgraaf
- South - East of Arnhem
- VINEX city extension
- Urban design by Kees Christiaan
- 25 neighbourhoods
- 6250 houses
- 1 greenstructure
- Should be finished 2014 - 2015
Possible planning

Scenario 1: planning
GEM, every phase
takes 1 year (2015)

Scenario 2: delayed
planning, 3 years per
phase (2027)

Scenario 3: very
delayed, 5 years per
phase (2039)

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Concluding Statements

Grab opportunities to increase the adaptability of space towards changing conditions in the future and the ability to respond to growing dynamics in society.

Resilient planning process contains *Multi-dynamics* (short-term and long-term) combined with *Multi-functional* approaches in a *dynamic collaboration* process.

Identify for the environment “temporary” functions, depending on its separate dynamics, use, combination options and applicability.

Apply the life cycle approach for a project based design, planning, realisation and restructure approach.

Include ALL the relevant stakeholders at their specific moments in the life cycle.