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A review of Dutch experiences with including sustainability in Design-Build contracts

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Sustainable procurement in the Netherlands

- Many definitions + each organization own ambitions and goals
- Procurement strategy as instrument, 2 important steps:
 - Ambitions to functional specifications
 - Economic incentives → cooperative behavior for realization
- This presentation:
 - Dutch initiative/ Ministry of Transport, Public Works and Water Management → sustainable procurement of roads
 - New method: Ecodynamic Development and Design (EDD)



From ambitions to standard purchasing criteria

- Goal: stimulate market sustainable products → good example
 - Dutch central government: From 1st of January 2010, purchasing 100% of their products and services
 - Municipalities: 75% in 2010 and 100% in 2015
 - Provincial governments and water boards: min 50% in 2010 and 100% by 2010
- Goal of 100% sustainable procurement =
 - at least purchasing criteria Agentschap NL (Ministry of Infrastructure and Environment)
 - applied to all tendering procedures
- Government purchases > 50 billion Euro / year



Agentschap NL purchasing criteria

- Agentschap NL commissioned by Ministry of Infrastructure & Environment – in cooperation with other governments
- To be considered as standard instrument for wide variety of governments:
 - Low level ambition – conscious choice
 - Criticism from pioneers: chance only for proven technology
 - Standards derived from a collective ambition: location specific opportunities are therefore difficult to be captured



Development of procurement instruments for RWS

- Program RWS Sustainable (2009) ambitions are formulated as follows:
 - Energy: objects are self-sufficient → national ambition of 20% from renewable sources.
 - Sustainable use of materials and production methods → to reduce CO2 emissions by 20%.
 - Spatial quality of the infrastructure
- Development of instruments to integrate these goals in their procurement process:
 - DuBoCalc (LCA for assessment of sustainability of materials)
 - More ambitious set of purchasing criteria –Agentschap NL
 - Awarding criteria → Most Economically Advantageous Tender



Market incentives in the context of innovative contracts

- Lump-sum versus cost-plus-fixed-fee
 - Higher share of risks to contractor
 - “Product” → “service” and its availability
 - Long term
- Challenges:
 - Agreeing up-front on a fair price
 - Managing contractors through incentives
 - More aspects to be decided up-front
 - To arrive at a balanced and acceptable sharing of responsibilities, risks and rewards together with the private sector



Eco-Dynamic Design (EDD)1

- EDD : approach proposed by Building with Nature (BwN), EcoShape foundation
- Building with Nature: initiative of
 - Dutch industry, engineering consultants, research institutes and universities.
 - Together implement research projects & pilot projects.
- A design where:
 - nature and infrastructure integrate and combine from the very beginning to strengthen and reinforce each other.



Eco-Dynamic Design (EDD)2

- “Capitalize on the dynamics of natural ecosystems in the design of hydraulic engineering projects in fresh, brackish and salt water zones”
- Insight into natural dynamics → more valuable contributions to sustainable, and socially responsible, physical development



Eco-Dynamic Design (EDD)3

- Example from water works: dike at Steurgat in Noordwaard, with wave breaking willow plantation



Eco-Dynamic Design (EDD) for roads

- Design roadsides and sound barriers → attractive migration routes are created along the road
- Design roadsides → new habitats can develop in the area; in this way, biodiversity is promoted.
 - E.g. the creation of a stream on the roadside



Roadside stream (left) en spawning ground for pikes (right)



EDD principles for roads

- Make functional use of vegetation. E.g.:
 - to catch fine particles
 - to keep drivers “awake”.
- Design tunnels and crossovers → people & animals can profit from them.
- Strengthen the recreational value that originates from the increase in biodiversity.
 - E.g. the creation of spawning grounds for pikes
- Develop balances for construction materials (natural, concrete, asphalt) and aim at closing the balances for the project.



Success factors and positive incentives

- Interdisciplinary approach with the public client as expert counterpart
- Involvement of the whole network of stakeholders
- Efficient management of uncertainties and risks, proper distribution between principal and agent
- Small adjustments and design adaptations with significant added value are possible
- Start early in Reconnaissance project phase to keep options open



Experiences with EDD in the Road Sector

- Design freedom in de Right of Way and Environmental Impact Report; added value, not only mitigation
- Identify the opportunities for market players to differentiate themselves → market consultation
- Standard procurement instruments & purchasing criteria:
 - offer few opportunities for differentiation
 - Detrimental for innovation
- Opportunities for sustainability:
 - combination of functions and cooperation with local stakeholders
 - Current contracting schemes are limiting
- Monitoring of sustainable solutions → insight on their performance and total LCC



Conclusions and recommendations

- Key: the right incentives in contracts
 - Return of Investment for sustainable solutions
 - Design freedom granted
 - Contract term
- Standard criteria result in standard solutions = minimum level of sustainability
- How could public clients better evaluate distinguishing alternatives like EDD?
- Experiences with EDD:
 - Cooperation between authority and private contractors is key
 - Possible: Building with Nature



Thanks for your attention

- Questions?

