



The SludgeMattress

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 **Koninklijke
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The SludgeMattress

How to use river sludge as a road construction material.....

.....and clean the contaminated sludge at the same time?





Dutch context

- **Large amounts of river sludge**
- **Shortage of disposal facilities**
- **Expensive management of facilities**
- **Huge spaces taken by road infrastructure**
- **Soft soil delta**

The Remediating Road



- **Design contest by Dutch Highway Agency**
- **Functional use of road infrastructure**
- **Decrease of sludge storage and remediation of contaminated sludge**

provide ideas for a method by which contaminated dredged material can be used and cleaned under or next to road infrastructure

The Remediating Road

- **January 2004** **Announcement**
- **April 2004** **End of idea phase**
- **October 2004** **End of design phase**
- **September 2005** **End of construction**
- **December 2006** **End of monitoring phase**

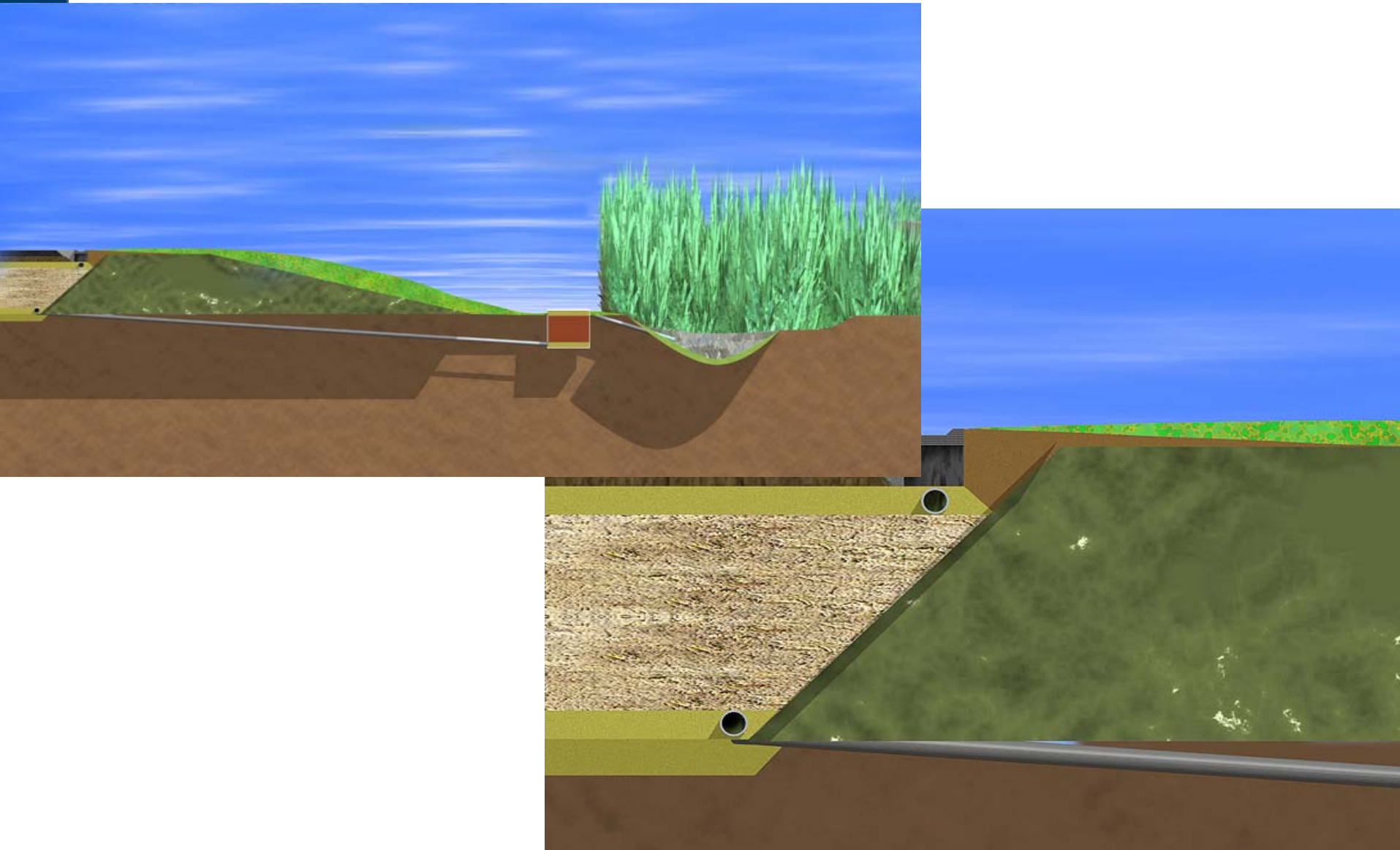
Award winning design by GeoDelft and Boskalis Westminster with the SludgeMattress

Production principle

- **Dredging of (contaminated) sludge**
- **Partition of coarse materials**
- **Mixture with**
 1. Binder
 2. Foam
 3. Organic fibres
 4. Decelerator
 5. Initiator



The Principle







v.d. LEE B.V.

CELBETON

Schuim
(verwa
... van verzakt betonvloeren
... Vullagen Funderingen
... Werkvloeren
... Fontoepompen

CELBETON

GUNDY

641 7357
46 777
17 4444

MANITOU
Gundy
010-5001600







Rotterdam
010-2882800

Boskalis Dolman B.V.

HERAS

HERAS



HERAS



Benefits

- **Reuse of secondary materials**
- **Saving of primary construction materials**
- **Functional use of road infrastructure**
- **Treatment of run-off water**



Results and further steps

- **Positive engineering specs**
- **Leaching and diffusion process slower than expected**

- **Controlled application on small road**
- **Broadening of the concept**
- **International cooperation**