Cold-heat storage

Status	Study
Location	The Netherlands, Gelderland, Tiel, Tiel East
Spatial info	Urban quarter
Measure type(s)	Water retention, water drainage; Renewable energy
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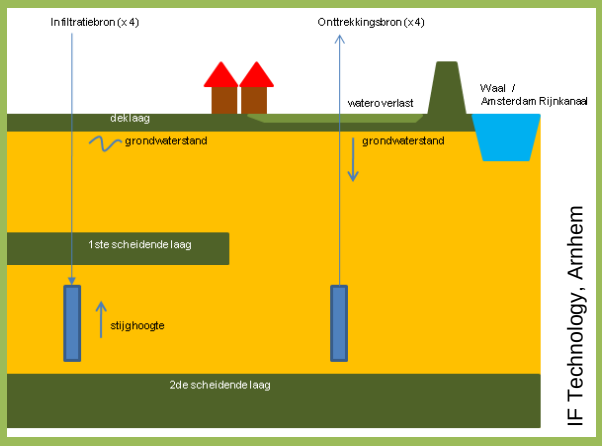

Description and Aim

The possibilities for the combination of cold and heat storage for new development with tackling local groundwater problems were investigated. There are good possibilities to combine this form of sustainable energy with lowering groundwater levels locally and furthermore decontaminate a local groundwater pollution. A business case points out which techniques are available and if implementation is financially possible. The business cases focus on 2 options: the area for new development on the so-called “climate dike” of Tiel (approximately 400 houses) and the development of a retail park in the industrial area of Latenstein.

Adaptation to climate change

Cold and heat storages can be used to lower groundwater levels locally, thus combining a sustainable measure for new development with the improvement of the liveability in the existing neighbourhood.

Problems addressed:

Heat wave, extreme cold, other: high ground water levels

Receptor(s):

Built environment, population, natural resources

Experiences

Functionality:

Implementing energy aspects in tackling of water problems in Tiel East. Groundwater levels can be lowered by 60 cm locally, preventing water nuisance now and in the future. A groundwater pollution can be decontaminated, making new development possible. The inside temperature in houses can be kept at a comfortable level using cold and heat storage and helps to limit the monthly costs of inhabitants.

Further synergies/benefits:

Link to mitigation: Cold and heat storage and the possible use of residual heat contribute to lowering CO_2 levels. Furthermore this measure can solve water problems in the existing neighbourhoods, improving the liveability. Expecting warmer summers due to climate change, the demand for cooling will increase. The cold and heat storage system will keep houses comfortable and will prevent the use of air-conditioning systems.

Funding:

International (INTERREG IV B-programme) and local.

Stakeholder involvement:

Local industries, project developers, municipality, water board, province.

Acceptance:

Project developers are/will be actively involved by the municipality. The national interest for this project helps to get project developers involved (publicity).

Obstacles/restrictions:

This combination of sustainable energy and water problems is innovative, concerns many stakeholders and is therefore not easy to achieve.