Advies- en ingenieursbureau

Soil remediation of the “Oostergasfabriek”

A challenge within an urban area!!

Marieke Nonhebel

October 30 2006

Gateway to solutions

Advies- en ingenieursbureau

Oostergasfabriek/Polderweggebied

- Location previously a gasfactory producing gas from coals.
- Soil heavenly contaminated with aromatic volatiles oil, metals and cyanide
- last 50 years: area neglected
- Citycounsil: re-development of the area
- But first remediation!

Gateway to solutions

Method of remediation

Remediation period 2004-2008

Participants?

- Client PBB
- Surveyor DHV
- Contractor Heijmans

How?

- Removing contamination in pit
- Re-using less contaminated soil
- Heavily contaminated soil transported elsewhere
- Draining soil water during remediation
- Replenishing area prior to start construction
- Recently: in situ remediation (test face chemical oxidation)

Advies- en ingenieursbureau

Complicating factors

The remediation is affected by different complicating factors

- Replacement of cables
- Removal of buildings and foundations
- Integration remediation with re-development
- Monies and subsidies (deadlines)
- Neighbouring areas remediation site

Gateway to solutions

What can go wrong……

- Licenses not on time
- Replacement of cables too late (function free)
- Unexpected objects in the soil
- Emission
- Inconvenience leads to stagnation work

How does the remediation proceed more efficiently?

- Designing and preparation team→ riskanalysis
- Quality system remediation → administration and responsibility
- Management surroundings→ peace with the neighbours

Advies- en ingenieursbureau

Quality System Remediation

Procedures in flowcharts

Contents:

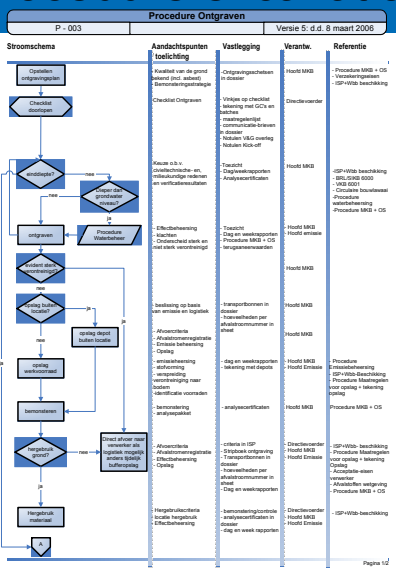
- Phase of the remediation (deconstruction of buildings, sheet piling, excavation etc)
- Risks
- Manner of control/administration of risks
- Responsible workforce

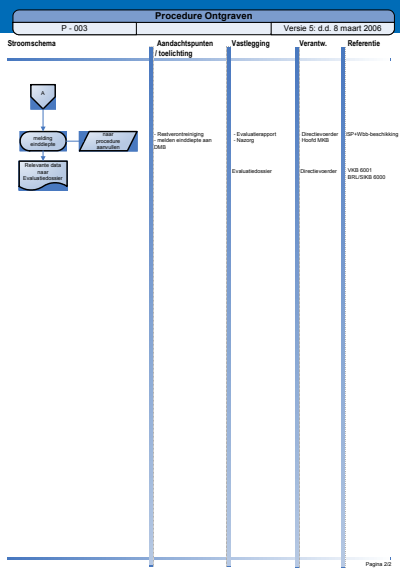
Both internal system of administration as well as instrument for the municipality to control the remediation!

Gateway to solutions

Advies- en ingenieursbureau

Procedure excavation





Gateway to solutions

Inconveniences caused by remediation and redevelopment

Why?
Urban area!

- Companies
- Linnaeuskade
- Tuinwijck
- Dog and cat kennels

What happens during remediating and redeveloping?

Deconstruction of buildings and foundations

After deconstruction?

- Sheet probing
- Pile driving

Pit complete and then what?

- Excavating soil
- Stockpiling of soil

Inconveniences!!!

Various risk factors:

- Dust
- Noise
- Vibrations
- Vertical movement surrounding areas
- Stench/health consequences
- Accessibility
- Safety
- Etc.

Advies- en ingenieursbureau

What can we do? (1)

Dust control?
- Spraying water
- Relocating activities

Noise/vibrations?
- Adapting methods
- Decibel measurement, vibration measurement

Vertical movement?
- Monitoring levelling points
- Adapting methods

Gateway to solutions

What can we do? (2)

Emission and stench?

Based on emission GC and PID-measurements + complaints

- diminishing excavation face
- Covering stocks of soils
- Fence around site
- Test with organic substance with sweet scent spreaded in pit while remediating

Summer 2005

- Pit 8
- Petition Tuinwijck
- Summer break and excavating with regime
- High emission and stench proceeds
- Little remediation, still angry neighbourhood!!
- Mistrust! People believe work will continue anyway!

That had to change!!!

Communication drive

- Central complaints office
- Passive to pro-active
- Problem solving including representation from surrounding neighbourhood
- Regaining trust

Advies- en ingenieursbureau

What did we do?

- Workshops
- Consultation with neighbourhood every two weeks
- Central spokesperson
- Monthly newsletter
- Website with “stench-expectation”
- Teaching at the MCO
- Titbits in local newspaper “De Tuinwijcker
- Contributing factors
- And a lot more…

Gateway to solutions

And did it work?

YES!!!

- Good contact with the neighbourhood
- Less complaints
- Trust is back
- Discussion, understanding and respect between project organisation and neigbourhood!