



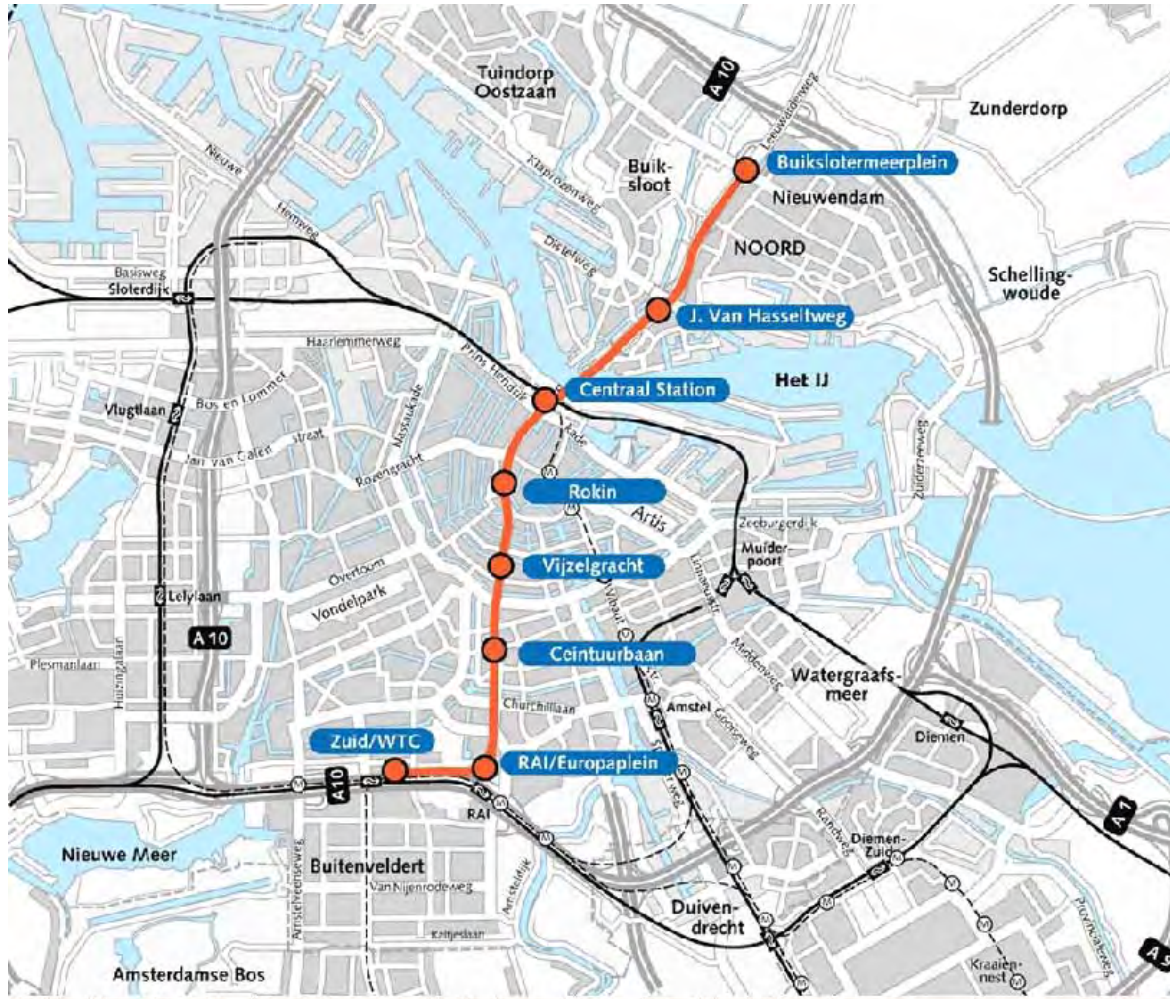
Highlights of the Noord/Zuidlijn

From an insurers point of view

Rémy Wiggers and Freek Schipper



Highlights of the Noord/Zuidlijn

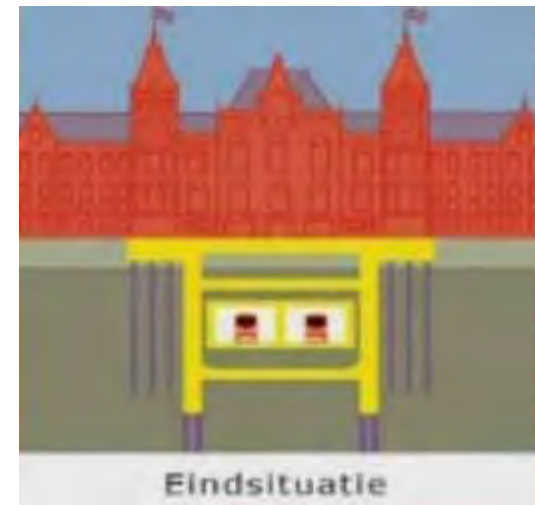
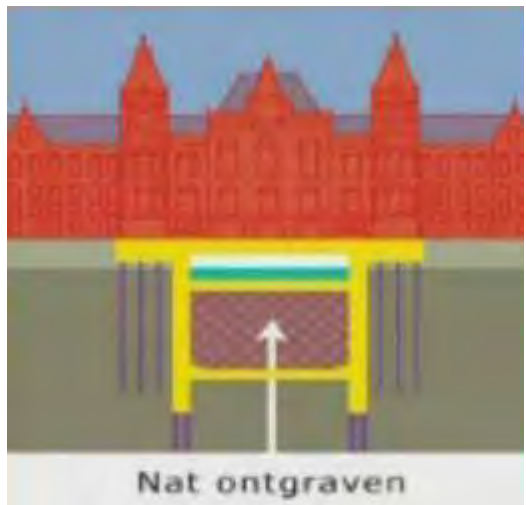
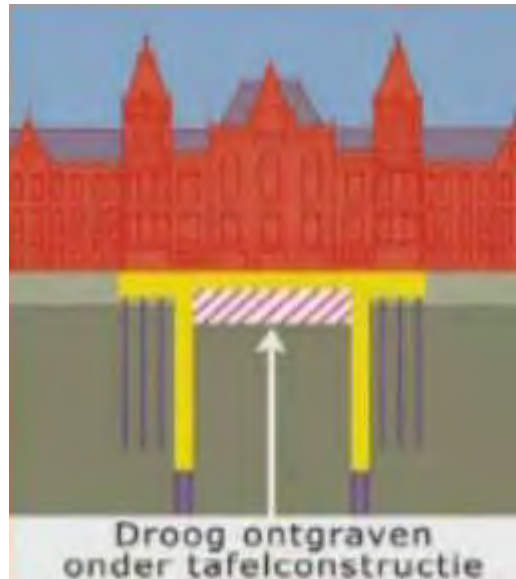
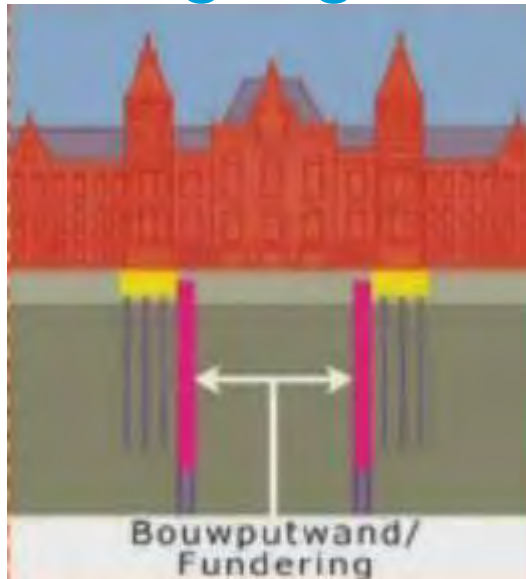


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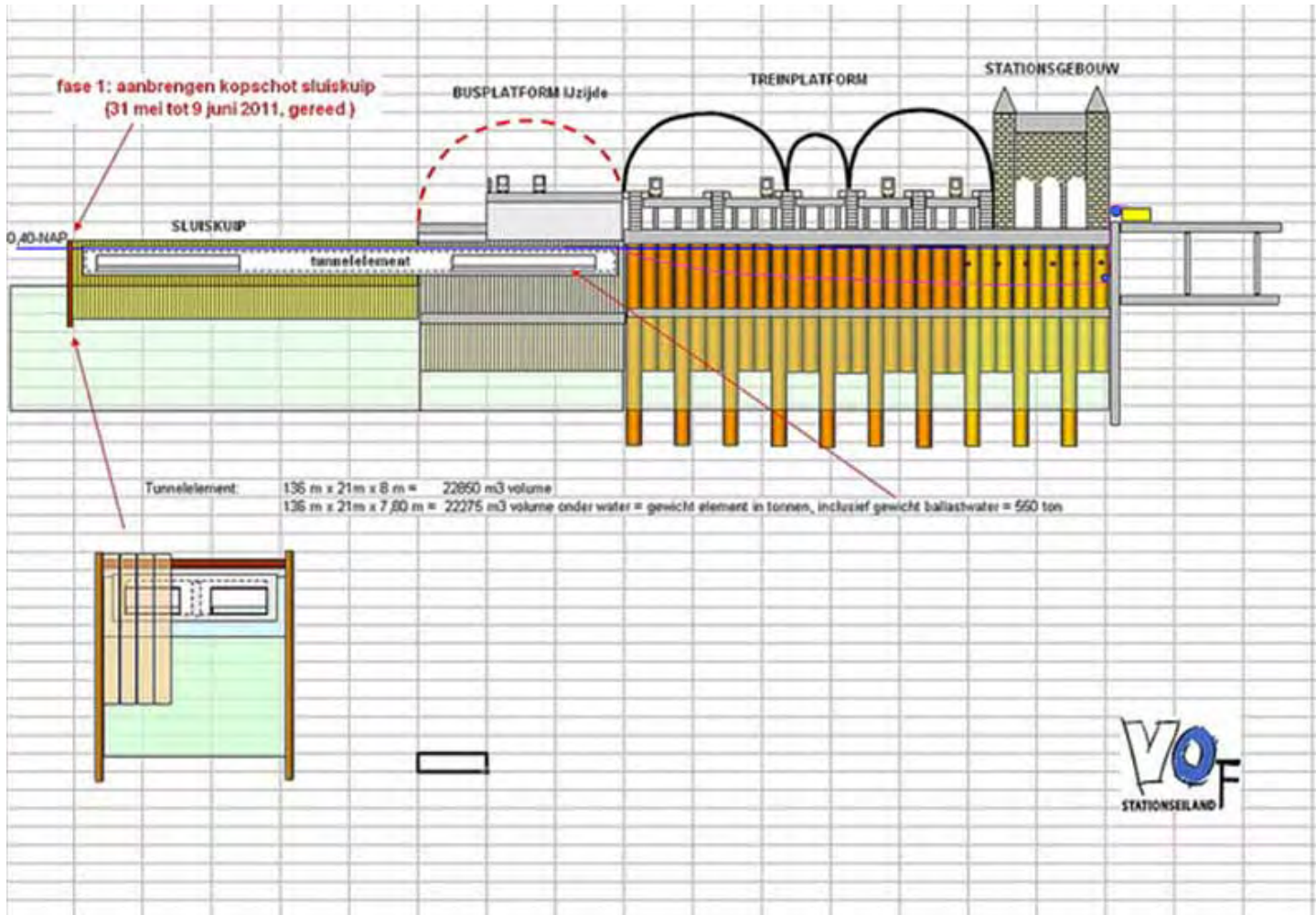




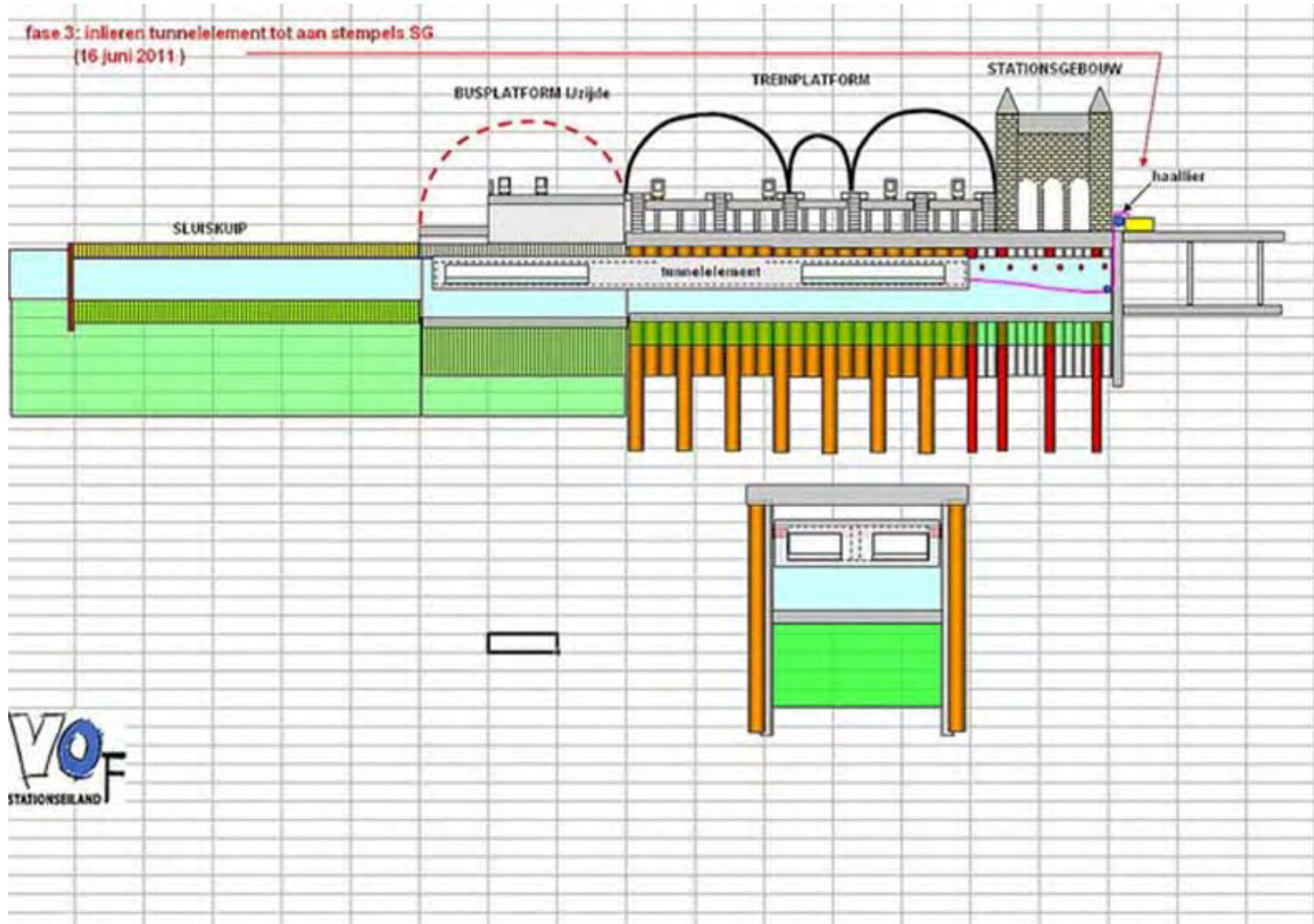
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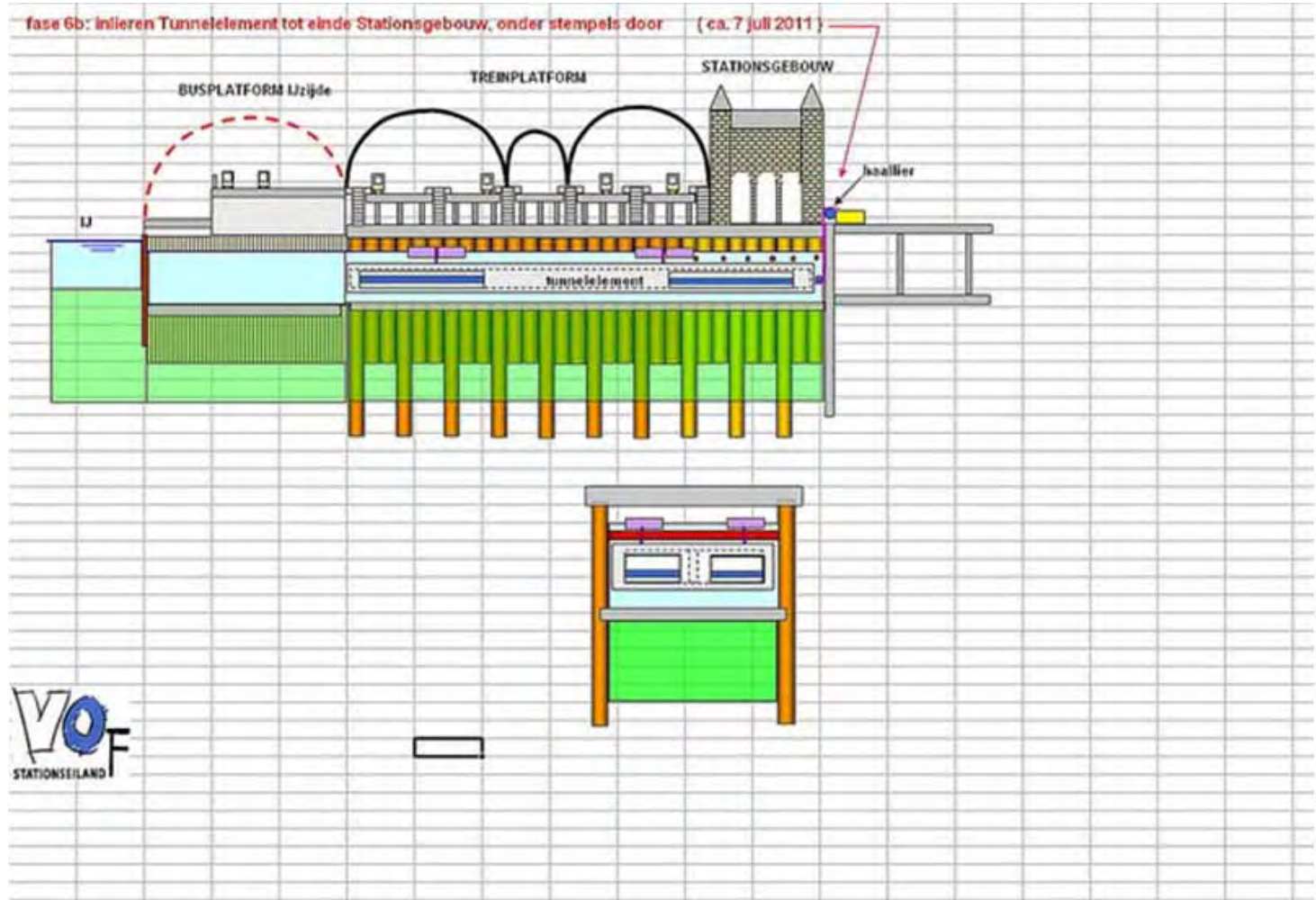
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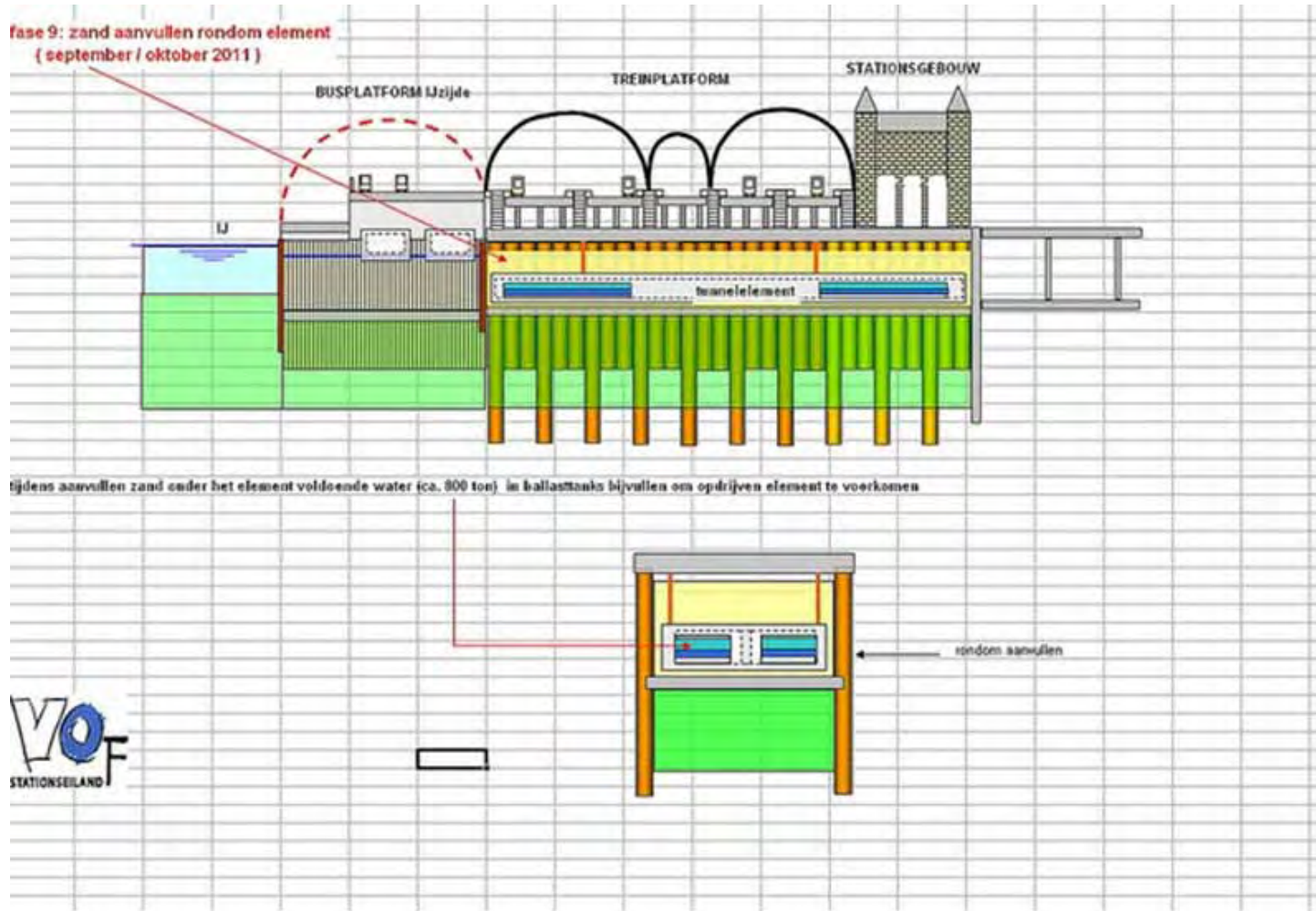
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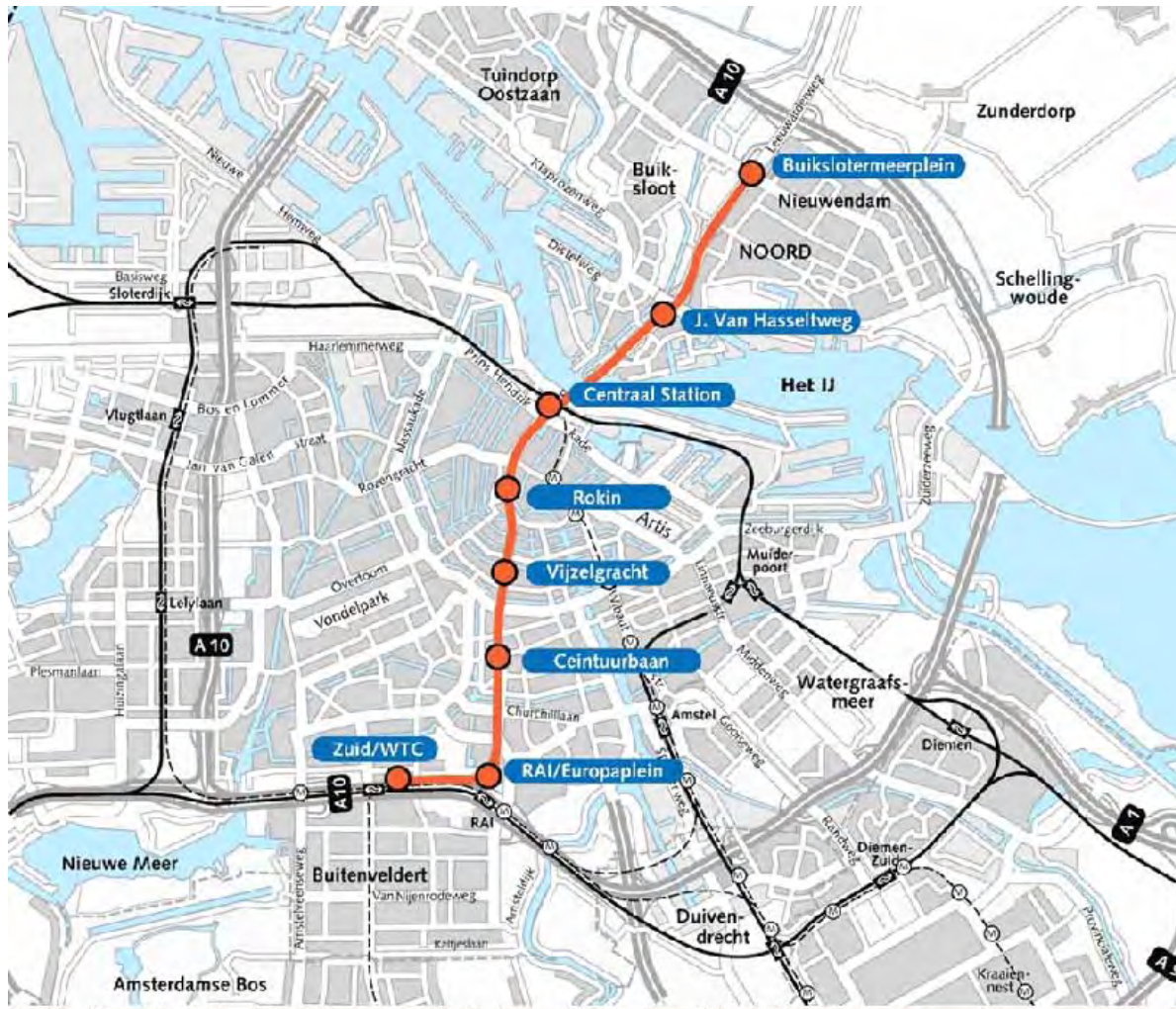




Highlights of the Noord/Zuidlijn



Highlights of the Noord/Zuidlijn





Highlights of the Noord/Zuidlijn



Ge Dubbelman/Hollandse Hoogte 2011





Highlights of the Noord/Zuidlijn





Highlights of the Noord/Zuidlijn





Highlights of the Noord/Zuidlijn



Ge Dubbelman/Hollandse Hoogte 2010





Highlights of the Noord/Zuidlijn





Highlights of the Noord/Zuidlijn



Risk Control Program Noord/Zuidlijn



Implementation of proactive risk control in a complex and challenging metro project in Amsterdam



Content

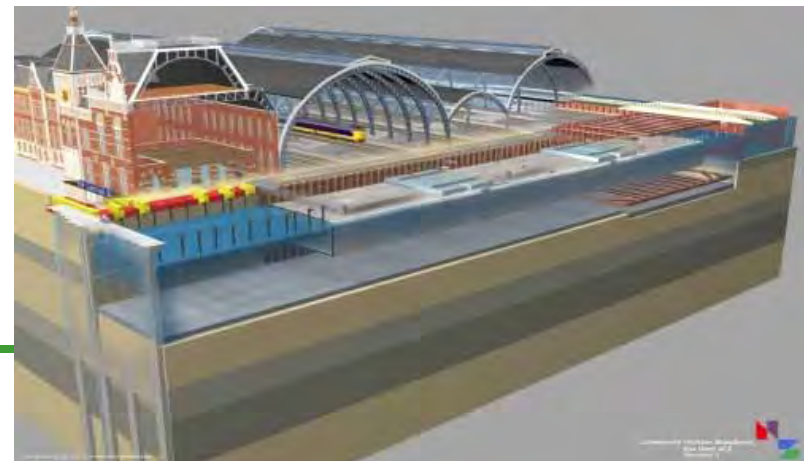
- Introduction
- History of insurance program Noord/Zuidlijn
- Dilemma for insurers
- Dutch insurance law and special clauses in policy
- Setup risk control program
- Examples of change in risk and risk reduction
- Conclusions



Introduction

- Long term and challenging metro project in Amsterdam
- Planned route through vulnerable historical heart of city
- Difficult fluvial soft ground conditions (peat, clay and sands)
- Little experience with new EPB-tunnelling techniques without settlements (short curves, compensation grouting)
- New construction methods necessary (crossing CS)
- Limited space and complex deep stations ever built in the Netherlands
- Construction of first underground metro line in 1970 lead to many protests from citizens

Need for risk management !!!



Introduction (2)

- Integrated risk management
- Qualified engineers and contractors
- State of art design techniques and working methods
- Best practice in construction
- Open communication with all stakeholders
- Monitoring surroundings
- Special claims bureau with proactive claim handling
- Risk control and loss mitigation steered by special claims bureau



**Founding father of Noord/Zuidlijn
Prof. Johan W. Bosch MSc**
Part-time professor at Delft University of Technology.
He combines his work at the university with a job at the Ministry of Transport, Public Works and Water Management, where he works as a top specialist and advisor in the field of subsurface construction.



History of insurance program Noord/Zuidlijn

- In 1997 broker of Municipality of Amsterdam (VGA) started first time to inquire terms and conditions for Noord/Zuidlijn project (soft market)
- Preliminary works policy for separate contracts started in 2002 with the aim to integrate these works in final project policy
- During 2002 negotiations with preselected insurers started on wording of project policy Noord/Zuidlijn including liability section and a risk control program
- January 2003 placement of project policy Noord/Zuidlijn started (hard market with little risk appetite and capacity).
- May 2003 Municipality of Amsterdam decided to insure the project in self retention.
- Problems with contractors and Dutch Insurance Authority
- In 2005 Project Liability (section 2 of CAR policy) was placed in London market
- In 2007 CAR-policy without section liability placed in Dutch market with insured till 7 February 2013
- In April 2010 extension of policy period till 1 January 2016



Dilemma for insurers

- Tender for insurance and presentation of risk when (detailed) design, contractors and working methods are still not final in contract and plans
- Risk assessment by underwriters on limited or preliminary information
- Quotation with provisions and escapes
- Start of project and inception of insurance before everything is clear
- Premium and conditions not in line with new developments in project
- Standard wordings and insurance law are not taking care of actual project developments
- How do we assess the design and working methods that are made after policy inception?
- How can we monitor our project risk developments?
- How do we structure on going communication?
- How do we benchmark loss prevention and mitigation?
- How can we react to changes in risk?



Dutch insurance law and special clauses in policy

Dutch Law

- obligation of the insured to disclose all relevant information to the insurer before inception of risk (sanctioned by law)
- obligation of the insured to notify major change of risk (sanctioned by law and policy)
- obligation of the insured to prevent and mitigate losses (sanctioned by law and policy)
- right of insurers to visit site (policy)
- right of insurers to cancel policy or to change cover for major change of risk (law and policy)
- exclusion for gross negligence or wilful misconduct (law and policy)

Policy

- risk information protocol
- change in insurance conditions a/o deductibles
- review clause after period ofmonths a/o high loss ratio
- arbitration



Dutch insurance law and special clauses in policy (2)

Risk information protocol

- description of aim of risk control program
- communication and reporting lines
- position, task and qualification of risk controller
- exclusion liabilities of leading insurer and risk controller
- availability of all relevant project information, plans and contracts
- regular reports and interim risk mutation form (RFM)
- maximum response time for insurers to comment on non compliance or major change of risk
- arbitration for technical disputes and policy issues
- facilities for risk controller

Clauses

- stipulation in building contract of risk control program / cooperation obligation
- risk information protocol and cancellation clause in policy



Examples of special clauses in policy

15. Alterations to the insurance conditions and/or deductible

The insurance is taken out on the basis of the information issued by, or on behalf of, the policyholder relating to the design, specifications, drawings and other information. The insurers are entitled to adapt deductibles and/or conditions between times if, on the basis of the report by the risk controllers, they can make a reasonable case for the fact that the risk would not be accepted on the basis of the existing conditions if they had had this information at their disposal at the time the insurance was taken out. This is only the case if the procedure for such an alteration has been complied with, as agreed in the **risk information protocol** attached to this policy. Such an alteration by the insurers may only take place with the agreement of the policyholder. If the insurers and the policyholder are unable to reach agreement, the dispute shall be submitted to an independent expert whose decision shall be binding vis-à-vis the parties. If no agreement can be reached on the appointment of an independent expert, the dispute shall be submitted to a committee of three persons in accordance with the provisions of Article 45 of the General Terms and Conditions.

18. Risk Management

The Principals Risks Management (RCPT), carried out under supervision of the Schadebureau Noord Zuidlijn, will provide the Leading Insurers with quarterly technical reports for their review. Should the leading Insurer, or on behalf of Co-insurers, require clarification of any of the information then the Risk Management team will arrange a meeting or site visit with the appropriate personnel to enable such clarification. It is understood that the Risk management team will work within the principles of the ITIG Joint Code of Practice. Insurers may also wish to carry out a site visit for their own purposes the Risk Management team will arrange such a site visit at time convenient to all parties. All reasonable measures and recommendations required by Insurers will be undertaken by the Insured.

22. Review Clause

The Insurers participating in this insurance may exercise their right to review this insurance, after a period of thirty six months or following a major occurrence irrespective of the cause of the damage. If the Insurer requires any of the parties insured to take measures which will prevent or reduce further losses whether from the same or different cause even if the cause(s) are known or not. Provided that the request is considered reasonable, if the insured does not comply with these request underwriters can either cancel or amend the policy forthwith within the normal legal requirements. The Insurers participating in this insurance policy otherwise waive their right to terminate the contract following the occurrence of an event insured against. The right to issue directives itself and any legal consequences thereof are not however affected by the preceding regulation. At the same time the anticipated total sum insured will be updated and the provisional premium recalculated. Any resulting additional premium will be paid as 4th instalment.



Setup risk control program Noord/Zuidlijn (NZL)

- Municipality of Amsterdam established a special bureau (Schadebureau Noord/Zuidlijn) for proactive claims handling and loss mitigation
- Schadebureau NZL acts on behalf of the principal and steers the risk control program which is a condition for CAR and Liability insurers. Schadebureau NZL communicates with the project management of NZL and the insurers
- Engineering company Grontmij BV is appointed for the Risk Control Program (CAR+Liability). They independently check designs, plans and working methods and they inspect the construction sites
- CLARC Risicomanagement BV is appointed by CAR insurers to follow up the reports and to communicate priorities in the risk control program. They can visit meetings and construction sites
- Insurers receive reports and non compliance notifications and they can comment on change of risk and non compliance issues to Schadebureau NZL.



Examples of change in risk and risk reduction



Change of risk during excavation of Station Vijzelgracht. Diaphragm wall showed disproportional leakages and freezing method is introduced.



Examples of change in risk and risk reduction



Insurers demanded strict rules for smoking in protected places in the tunnel and TBM

Fire prevention in TBM has special mention in the risk control program



Examples of change in risk and risk reduction



During excavation station Rokin the risk controllers questioned the stability of the bottom of the building pit



Extra loss mitigation measures were agreed (additional weight load by water basins)



Examples of change in risk and risk reduction

The surroundings of the tunnel are inspected on regular basis. The building of De Bijenkorf needed special attention and was corrected with compensation grouting during the tunneling



FOTO: WIM RUIGROK
BEELDBEWERKING: ERIK THIJSSSEN

Conclusions

- Risk control is inevitable for long-term projects with high risk profile
- Obligation by the insured to notify major change of risk develops into obligation of insurers to actively participate in risk communication
- Risk control program has to be agreed in building contract and policy conditions
- Experiences with risk control program very successful (Sophia tunnel, HSL-project, Hubertus tunnel, Coentunnel, etc.)



Risico control by Grontmij Netherlands for the insurers of the Noord/Zuidlijn

