Victory Boogie Woogie Tunnel
The Netherlands

Presented by:
Paul P.M.K. Janssen, MSc
The Hague
- City by the Sea
- Home of the Dutch Government and Parliament
- International City of Peace and Justice
- Home of the Peace Palace and the International Criminal Court
- Home of the Dutch Royal Family
- Home of the Victory Boogie Woogie painting by Piet Mondriaan
Due to its coastal location, The Hague has no closed traffic circle.
Accessibility in the direction of the city center from Rotterdam with its port is vulnerable.
The solution is a new connection between Rotterdam and The Hague!
This connection passes over the remains of an ancient Roman settlement: Forum Hadriani.

The logical solution is therefore a bored tunnel.

Despite:
- soft subsoil consisting of sand, clay and peat
- groundwater table near to the surface
- presence of a river and a city port
Miami, USA 18th November 2019

Paul P.M.K. Janssen, MSc
Martin M.D. Potter
The combination of residences above the tunnel track and the soft soil poses a further challenge.
Monitoring
An intensive monitoring program combined with the craftsmanship of the TBM team resulted in a settlement of the surface of max 4 mm.

- 38 Robotic Total Stations
- 6000 prisms installed
- 200 million data points
Miami, USA 18th November 2019
Facts and figures

- The 2 tunnel tubes are 1,640 and 1,636 meters in length.
- The deepest point of the tunnel is -31 meters below surface.
- A concrete weight slab in front of the end slab made it possible to bore very close to the surface, creating a longer tunnel.
- After boring the first tunnel tube, the TBM was transported back to the reception shaft through the city and by ship over the river.
- 6 cross connections, constructed with freezing technique.
ITA TUNNELLING AWARDS 2019

BORING THE VICTORY BOOGIE WOOGIE TUNNEL

Miami, USA 18th November 2019

Paul P.M.K. Janssen, MSc
Martin M.D. Potter
Sustainability

- Roof above the entrance is made of solar panels
- 60% less energy consumption
- Fine Dust Reduction System collects 50% of fine dust produced in the tunnel
- Low Energy Asphalt with PA stone
- Transportation of lining elements by battery-operated vehicles, a world scoop (‘Tunnel-Tesla’)
**Fire resistance**
The lining elements contain polypropylene fibers. Test results show that the tunnel meets the highest fire safety standards for traffic.
Safety on site

- Safety awareness training for all employees, also for sub-contractors
- Safety check at the start of each shift
- 645,000 hours worked on building the tunnel
- No fatalities
- 2 incidents with (short) absence, LTIF 3.0
- 16 lost working days, TLWR 24.0
Conclusion
In the summer of 2020, traffic will drive through the tunnel
• Beneath an ancient Roman settlement
• Beneath residences and under a river and port
• Through very weak soil
• In a very safe, beautifully designed and sustainable structure
• Towards the International City of Peace and Justice

• The VICTORY BOOGIE WOOGIE TUNNEL
Project initiated / built by:

- Client: Municipality of The Hague
- Contractor: Combination Rotterdamsebaan joint venture by BAM & VolkerWessels
- Engineer: Movares
- Architect: Benthenm&Crouwel / Paul de Ruiter
- TBM supplier: Herrenknecht AG