

# TILLEGGSTREDNING TUNNEL

Radisson Blu Royal Bergen, 16.04.2024, Christoffer Taule

HERRENKNECHT



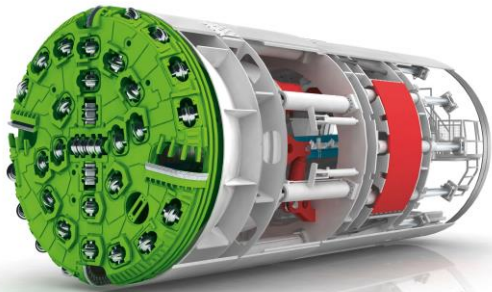
Tunnelling Systems



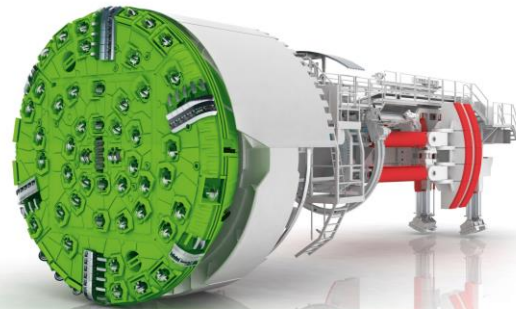
Tilleggsutredning tunnel

# HVA MENER DU/DERE BØR UTREDES?

Kombinasjon av ulike tunneldrivemetoder - hovedtunneler



**TBM – Dobbelt skjold**



**TBM – Gripper**

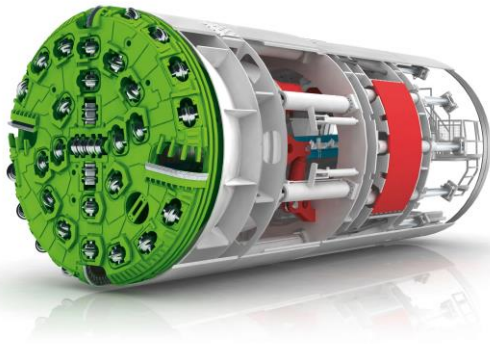


**Boring og sprengning**

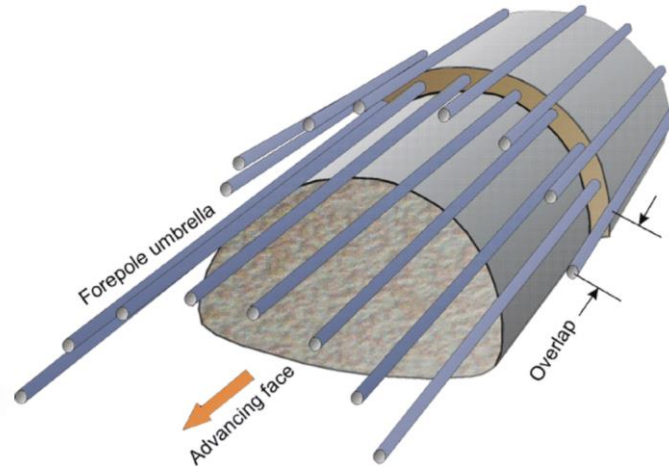
## Tilleggsutredning tunnel

# HVA MENER DU/DERE BØR UTREDES?

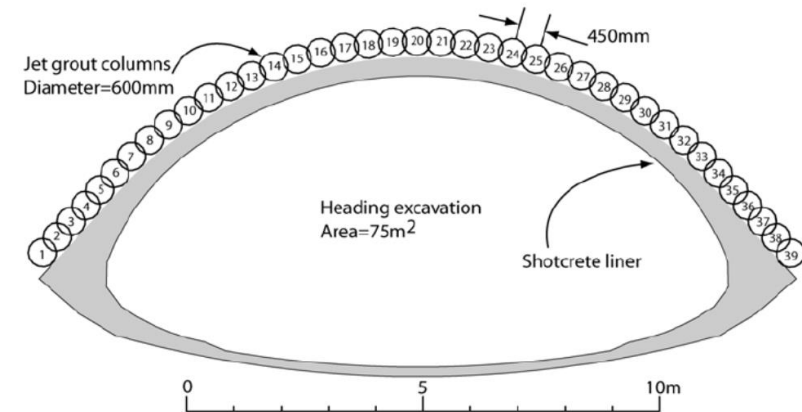
Ulike tunneldrivemetoder – løsmassesone Vågsbunnen



TBM – Dobbelt skjold



Rørparaply



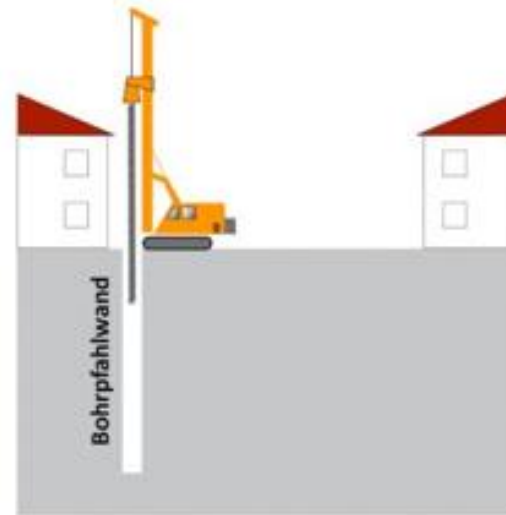
Horisontale jetpeler

## Tilleggsutredning tunnel

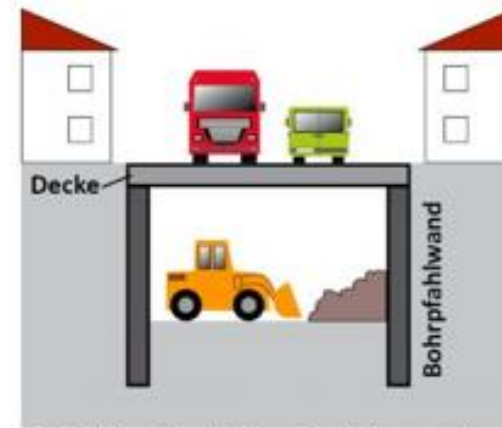
# HVA MENER DU/DERE BØR UTREDES?

## Top-down method / Deckelbauweise

- Løsmassesone  
Vågsbunnen
- Grunntliggende  
stasjon under  
Torgallmenningen
- Gangtunneler



1. Betonieren der Bohrpfahlwände



2. Befahrbare Oberfläche während des eigentlichen Tunnelbaus



3. Verkehrsberuhigung an der Oberfläche, Durchgangsverkehr im Untergrund

Tilleggsutredning tunnel

# HVA MENER DU/DERE BØR UTREDES?

Gangtunneler – AVN-maskin (Ø 4m)



Tilleggsutredning tunnel

# HVA MENER DU/DERE BØR UTREDES?

Sjakt



Vertikal sjaktjumbo



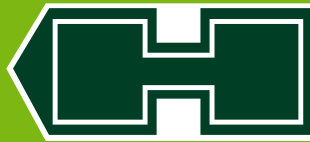
Stigortsboring

## Tilleggsutredning tunnel

# NØKKELKOMPETANSE

- Kjennskap til geologien i Bergen
- Global anleggsteknisk erfaring
- Stasjonshallens bergoverdekning – bergmekanisk modellering i 3DEC eller FLAC3D
- Involver maskinprodusenter – vi utvikler kontinuerlig ny teknologi

**HERRENKNECHT**



**Tunnelling Systems**