

# HandHeld LiDAR

Netwerk Dijkmonitoring  
Workshop LiDAR

26 september  
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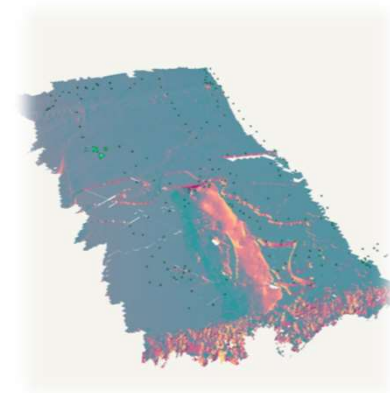
# Inhoud

- Techniek
- Meettoepassingen
- Meetomstandigheden
- Visie en behoefte vanuit Waterschap Noorderzijlvest



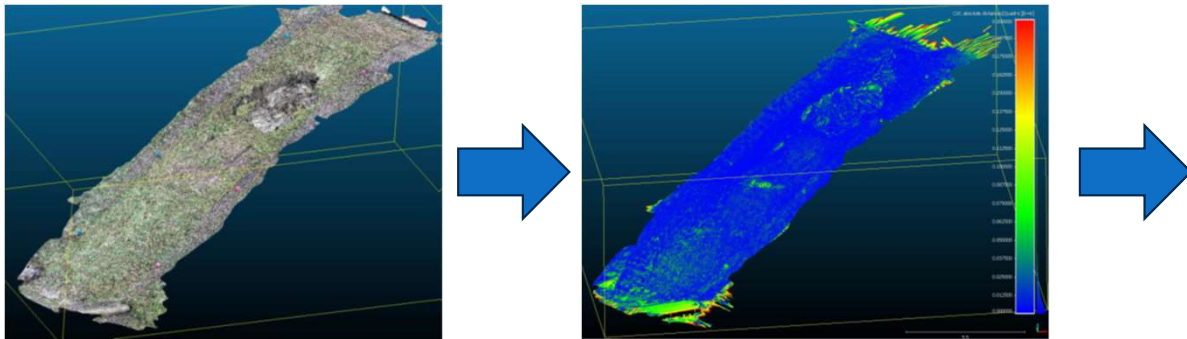
# Techniek

- Handheld LiDAR
  - *“je kan er ook mee bellen”*
- Smartphone met LiDAR sensor
  - *LiDAR*
  - *Fotogrammetrie*
  - *SLAM*
- Voorlopig, alleen iPhones
  - *LiDAR maakt de techniek robuust → geen licht nodig*



# Techniek

- Verschil handheld LiDAR met meting Terrestrial Laser Scanner (TLS) van DMOW<sup>1</sup> tijdens Polder2C's<sup>2</sup>.



## Conclusies:

- LiDAR data consistent
- Georeferentie LiDAR met RKT-GPS
- Algemene error 1 cm of kleiner
- Verschaling ongeveer 1%
- Goed te gebruiken voor snelle accurate metingen van terreinoppervlaktes

NB: grote verschillen hebben 2 oorzaken:

- Valt buiten de dataset van DMOW
- Dataset DMOW heeft geen punten

1: [Departement Mobiliteit & Openbare werken](#) (BE)

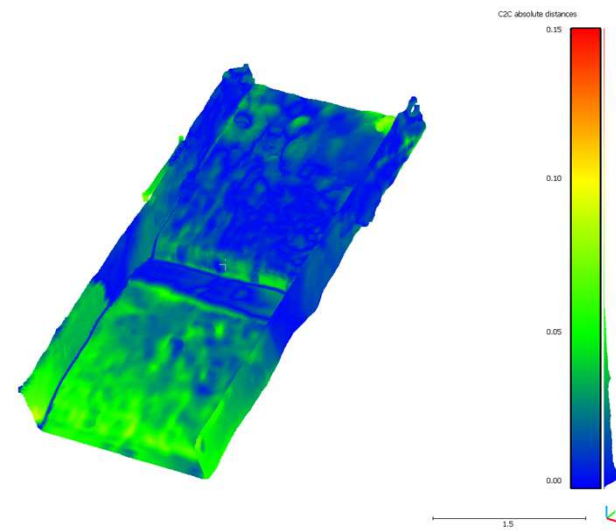
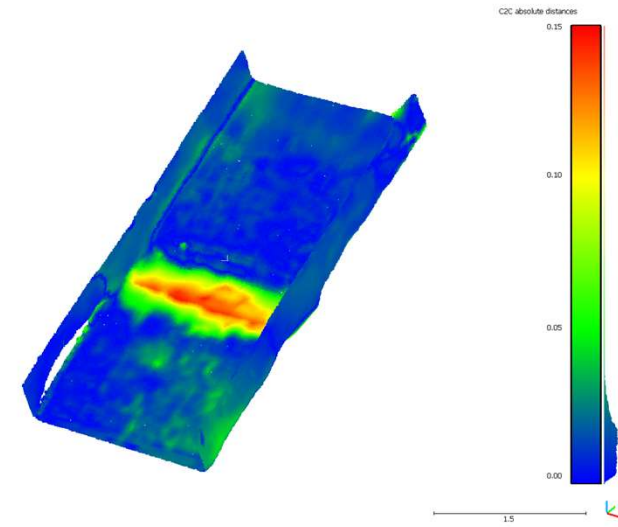
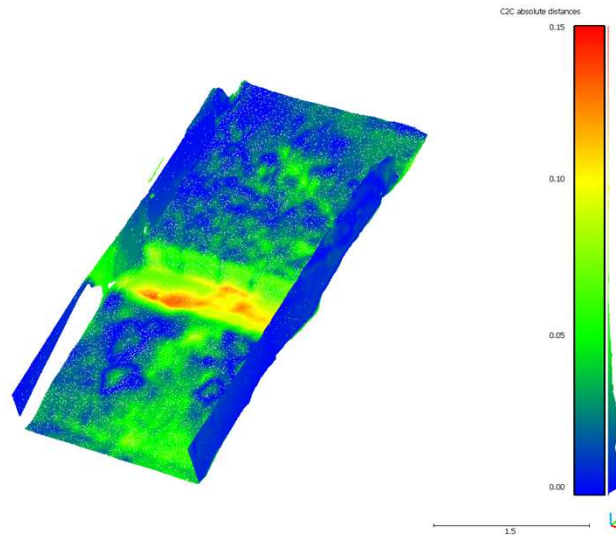
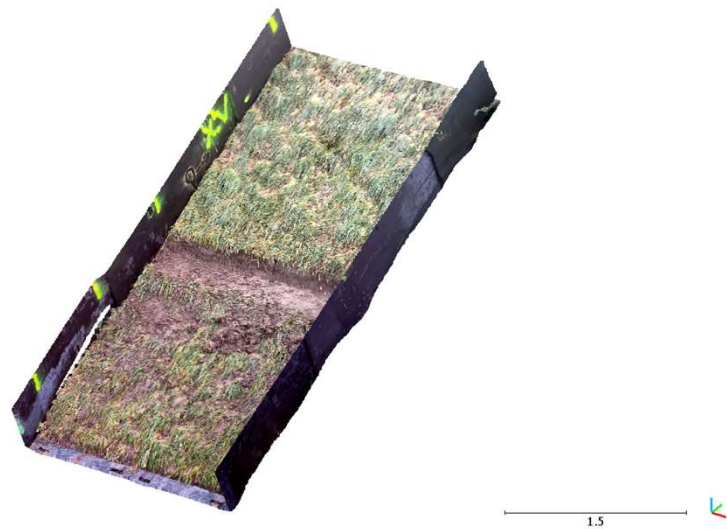
2: <https://polder2cs.eu/>





# Toepassingen

- Erosie



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# Toepassingen

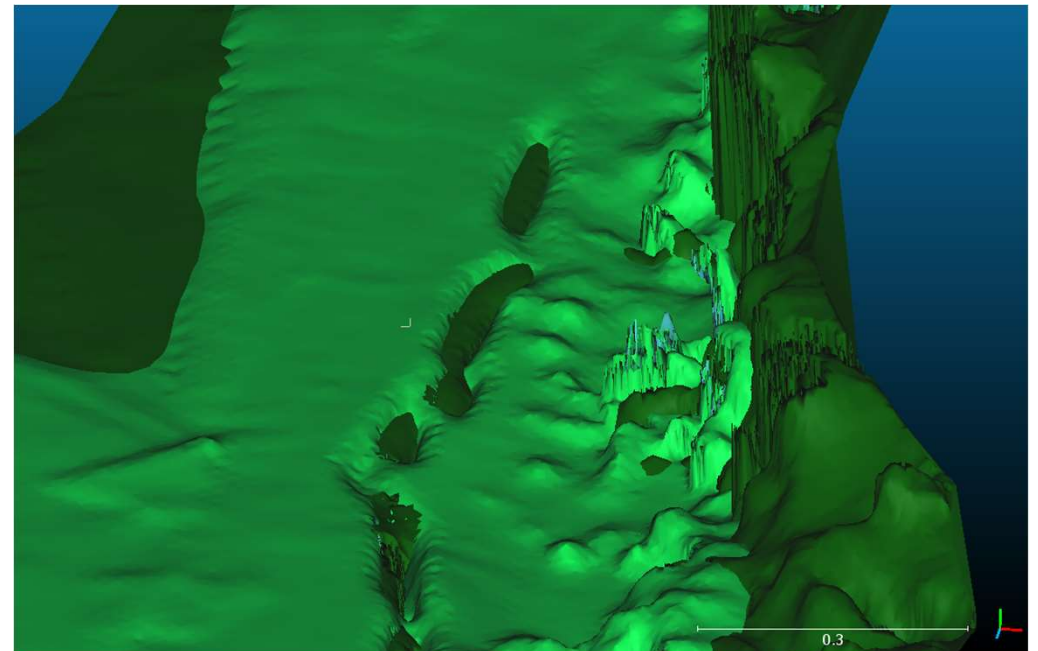
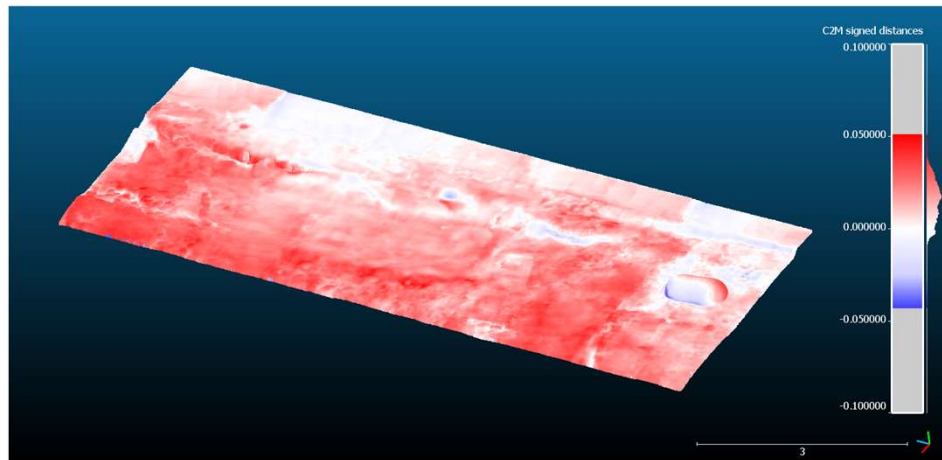
- Vervormingen



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# Toepassingen

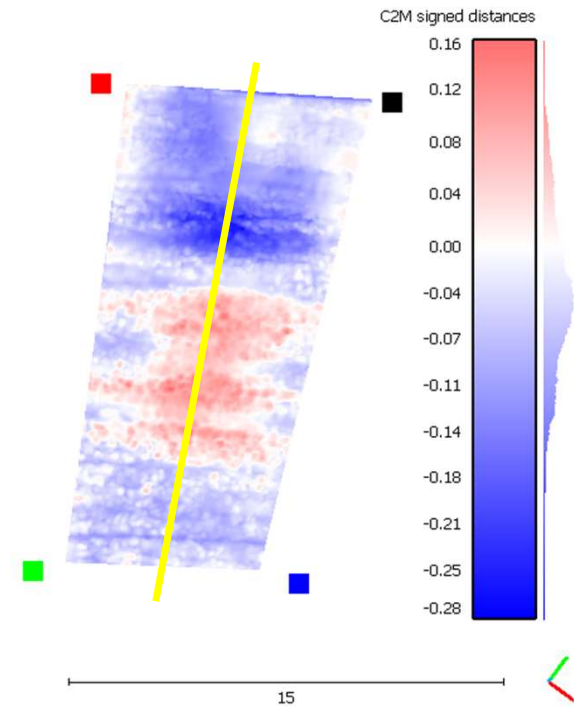
- Vervormingen





# Mogelijkheden

- Talud - Wilpse dijk



# Toepassingen

- Breach defender



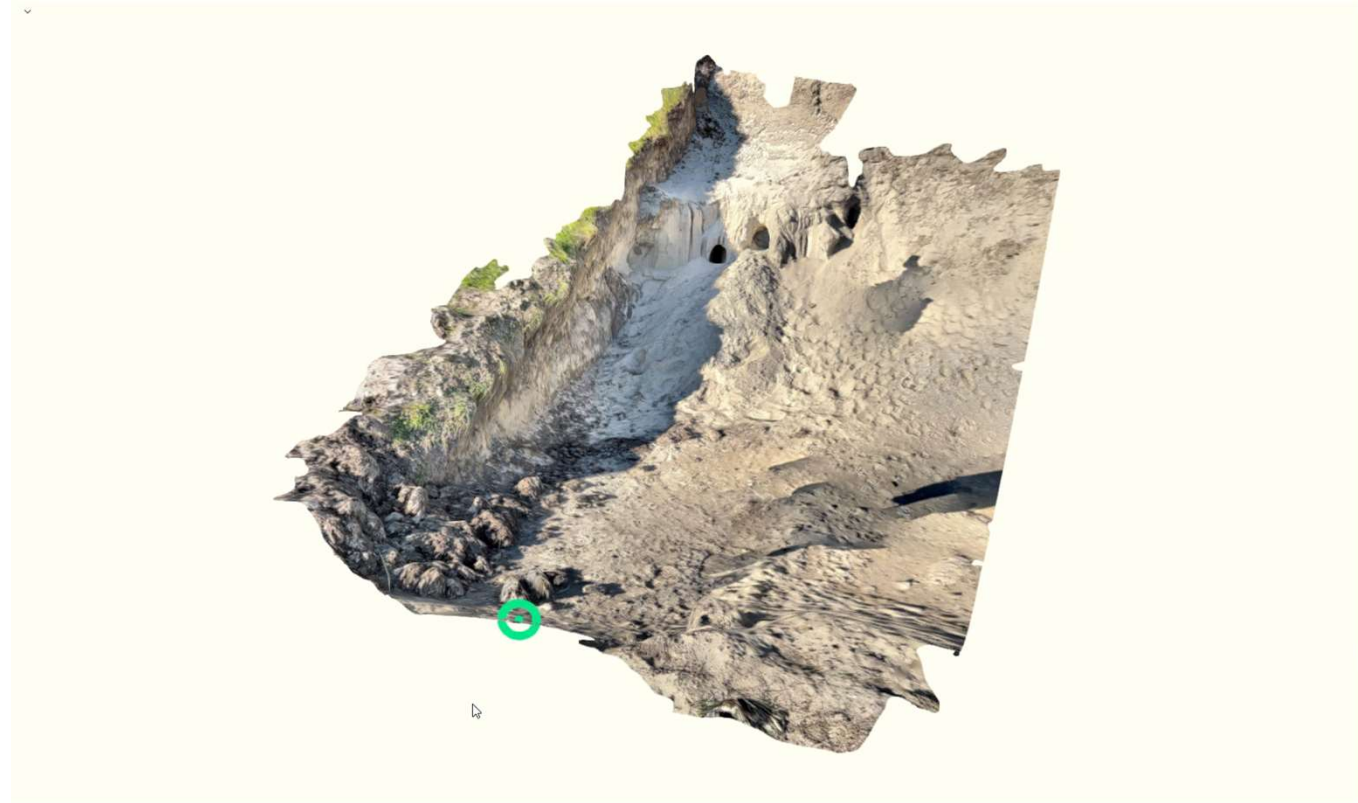
- <https://polder2cs.eu/activities/emergency-response/breach-closure-strategies>



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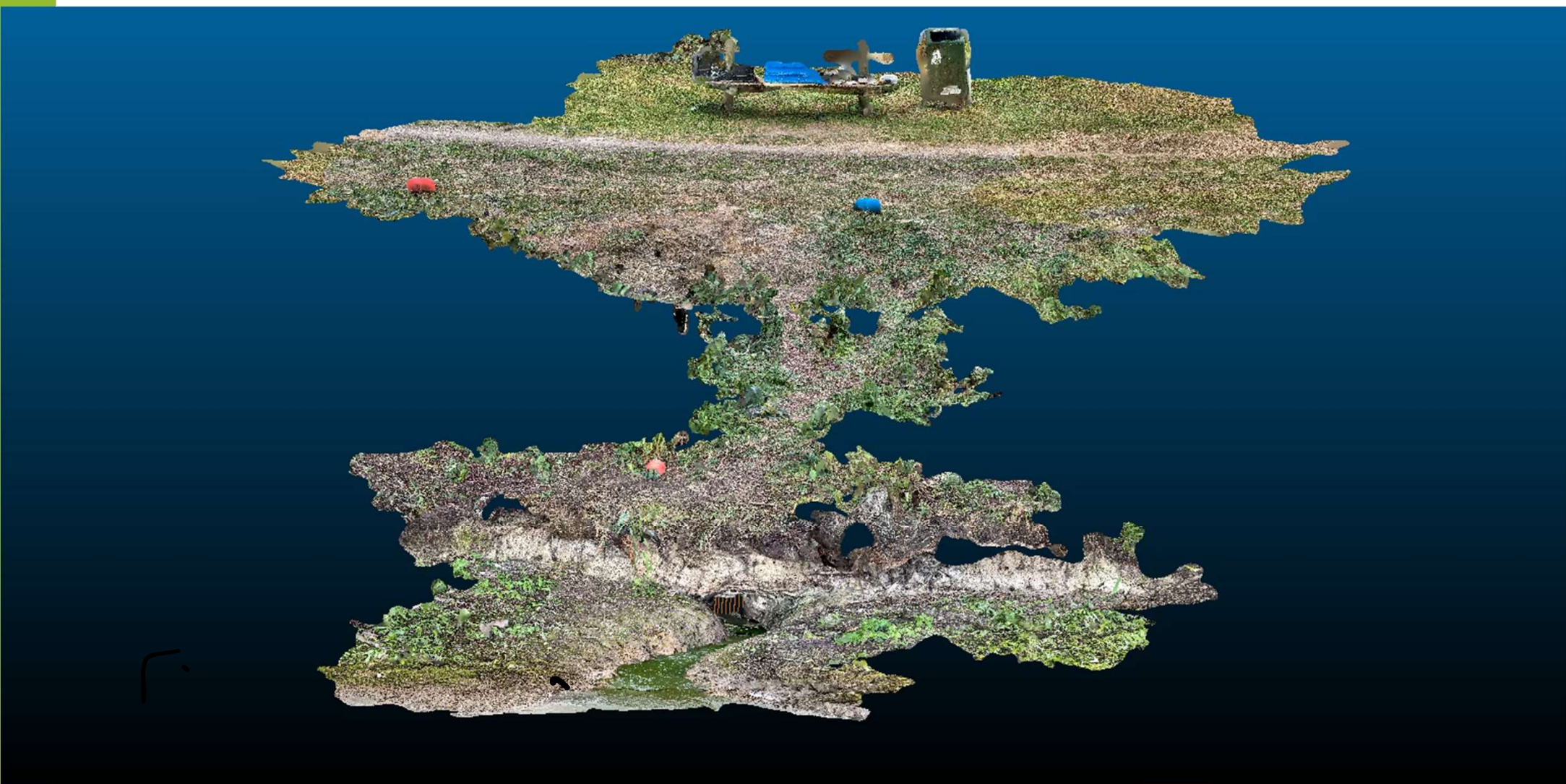
# Toepassingen

- Graverij



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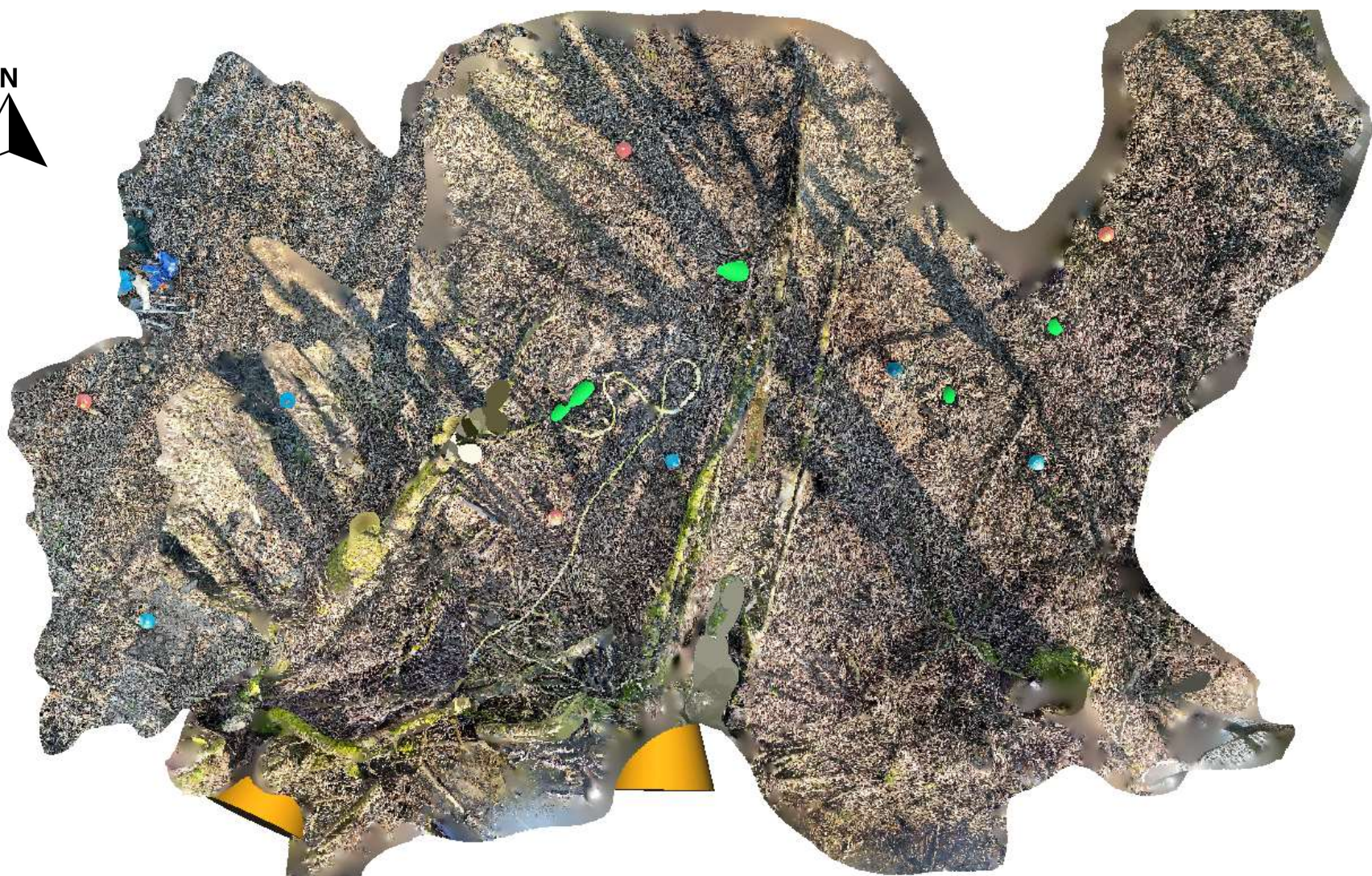










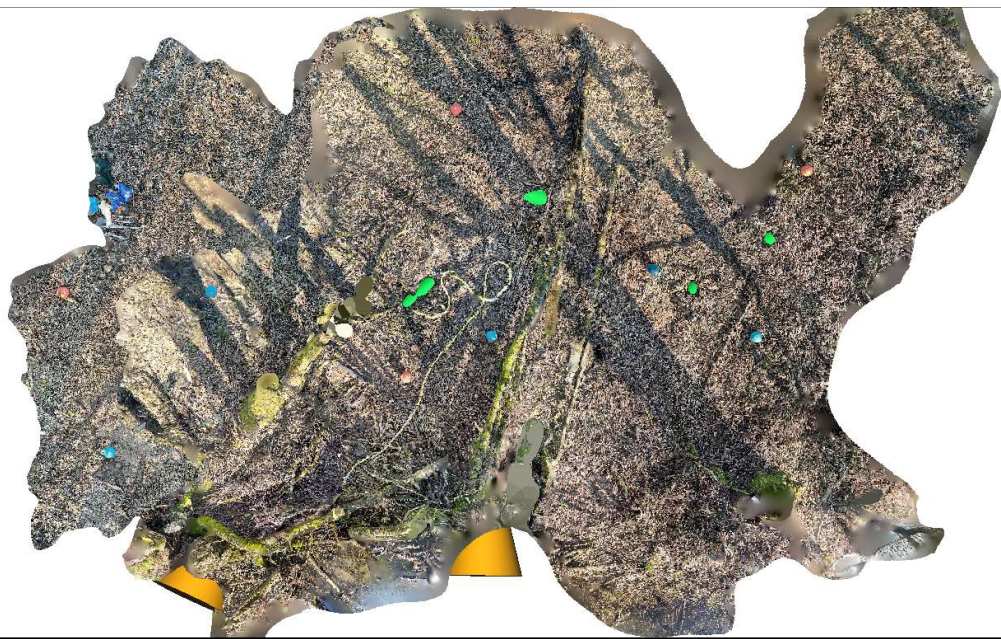


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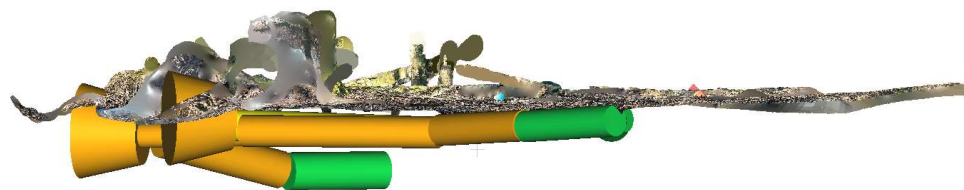
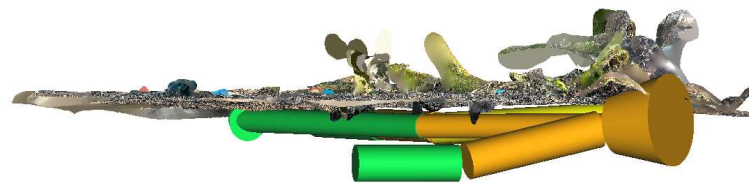
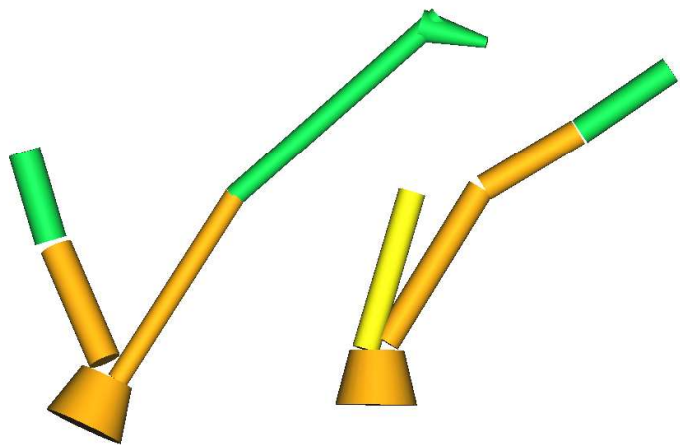


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0 1 2 3 4 5 10m



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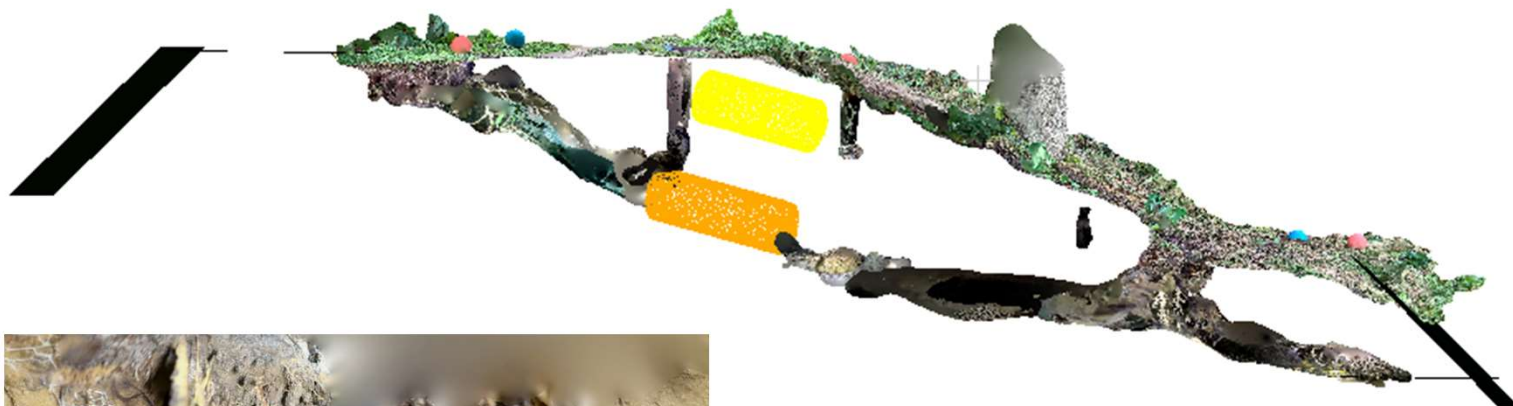
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# Meetomstandigheden

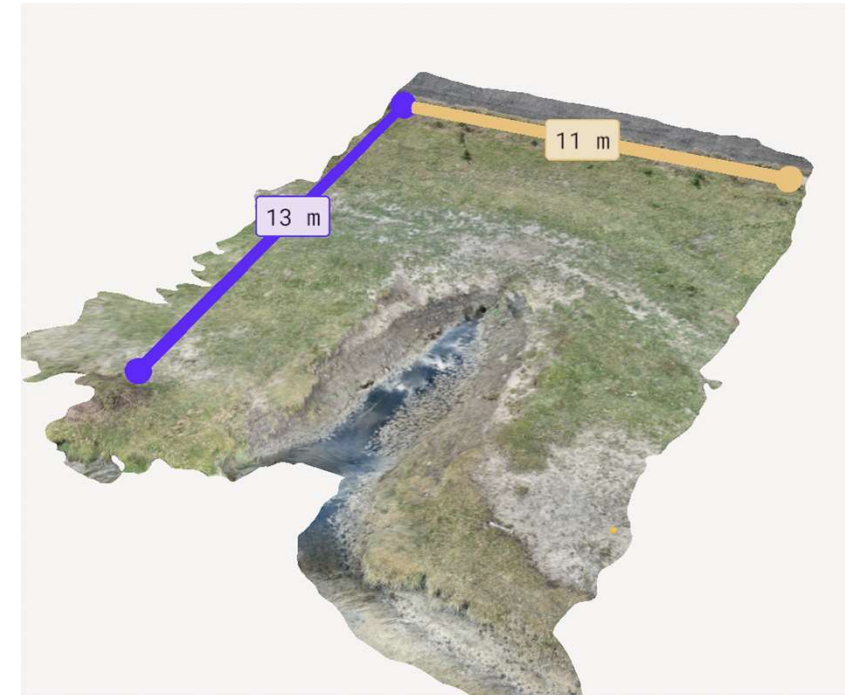
- Wat kan wel
  - Buitenbeeld snel naar “binnen”
  - Harde oppervlakten/ constructies
  - Korte vegetatie
  - Graverijen
- Wat niet
  - Millimeter nauwkeurig
  - Meer dan 200m<sup>2</sup> (in één keer)
  - Onderwater (muv. specifieke omstandigheden)





# Toepassingen Noorderzijlvest

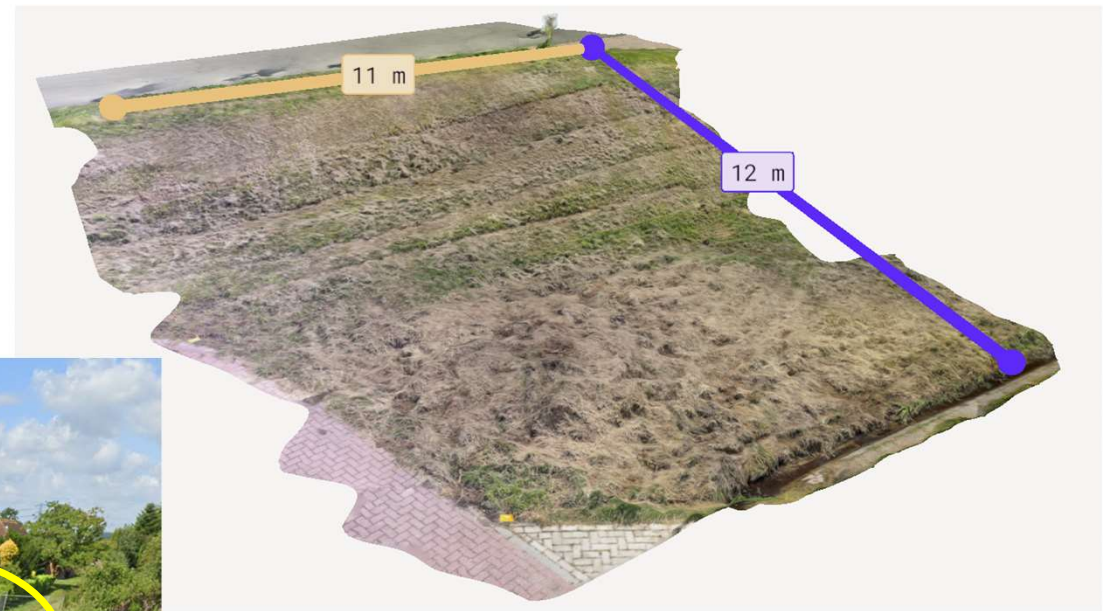
- Monitoring kwel plek buitenteen



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# Toepassingen Noorderzijlvest

- Monitoring talud na werkzaamheden



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