



KWB

Monitoring & Condition Assessment of BGI in City Blues

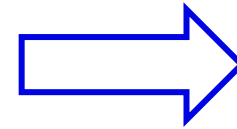
KWB team

City Blues Final Event - Berlin - 30.09.2026

Issues & Gaps in BGI Monitoring and Maintenance

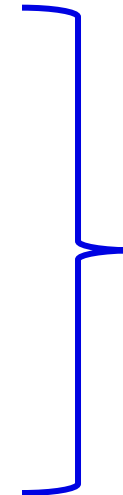
Findings from interviews with City Blues municipalities

- Maintenance must be considered at the planning stage
- Unclear responsibilities between departments



Legal/planning issues

- Limited resources (financial, staff)
- Existing BGI → difficult to retrofit with monitoring devices
- Small-scale solutions spread across the city → techn. approaches “over the top”
- Varying knowledge and standards/ missing “technical” infrastructure
 - Often no structured process (Excel files, logbook or reliance on individuals)



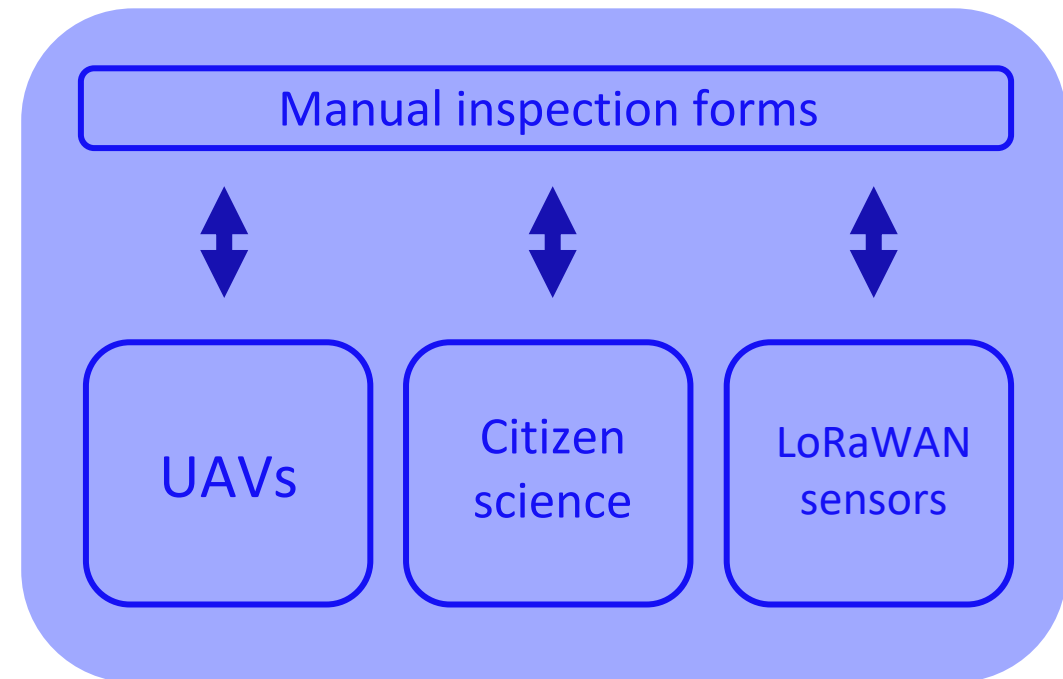
Addressable by
monitoring

BGI Monitoring in City Blues

Monitoring approaches in City Blues

Monitoring requirements for BGI:

- Minimally invasive
- Low-cost/ low-tech
- “Lot of data fast”

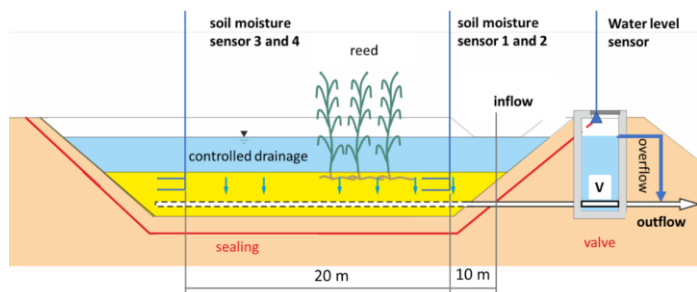


Graphical abstract of KWBs monitoring activities in City Blues

Monitoring Campaigns in Partner Cities (2025)

Aarhus

- LoRaWAN monitoring campaign
- Monitoring infiltration basins
- Can low-cost LoRaWAN sensors detect clogging of infiltration measures at an early stage?



Malmö

- UAV & LoRaWAN campaign
- Monitoring of green roofs
- Can UAVs assess failures and maintenance needs of BGI more effectively and precisely than manual inspection?



Tampere

- Citizen Science campaign
- Can a Citizen Science approach enable municipalities to have more efficient BGI monitoring?



Our focus in 2026!

UAV Focus in 2026

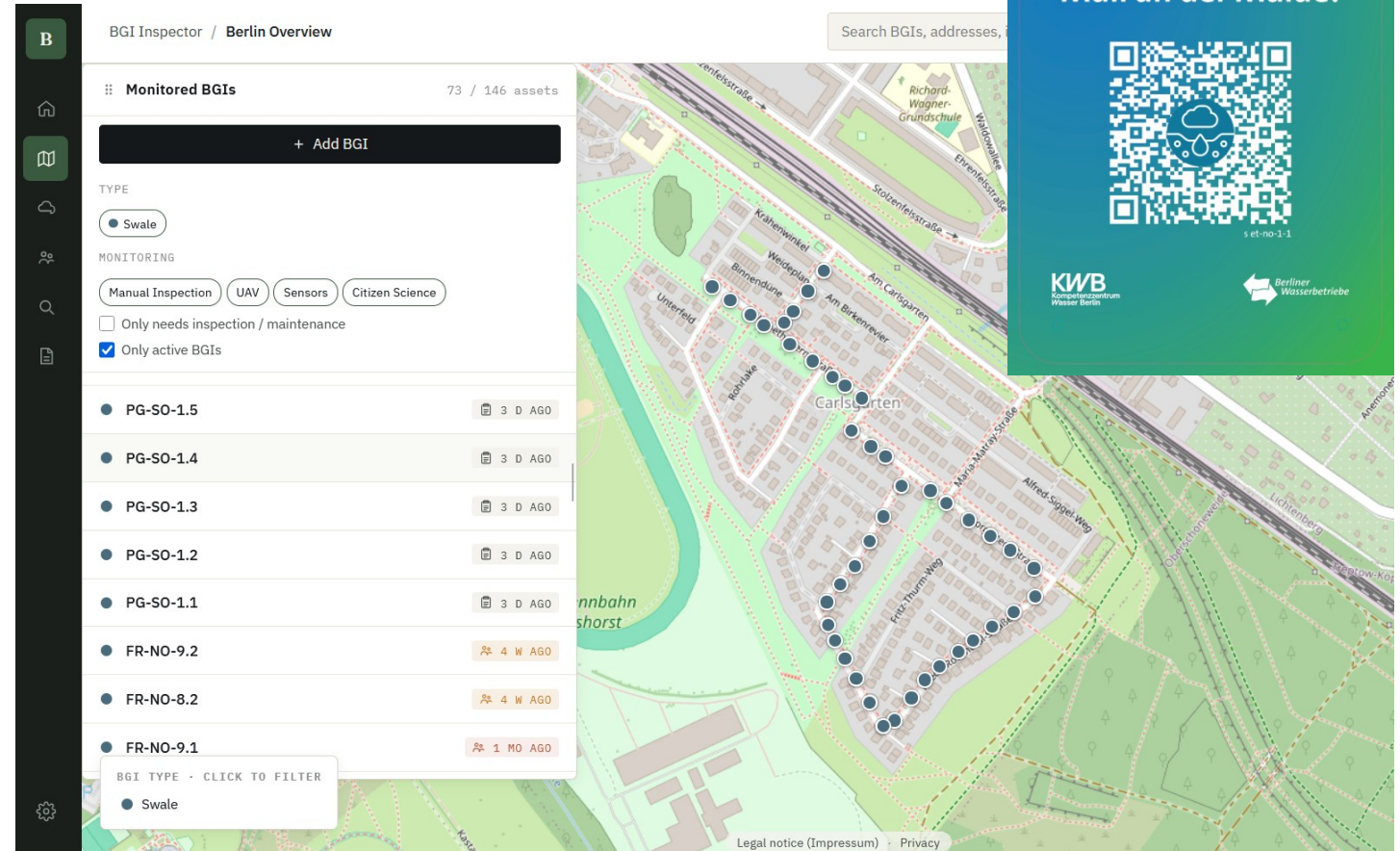
- Goal: Fully automated condition assessment of green roofs
- Using DJI Mavic 3M (RGB & multispectral data)
- Conducted UAV green roof monitoring in: Malmö, Berlin, Brandenburg & Viimsi
- Approach shows promising results
 - Implementation in web app
 - Vegetation assessment
 - Failure mode detection
 - Outcome: Automated report
- Outlook:
 - Validation and refinement of condition and failures

→ Data can be viewed and accessed via web app



Citizen Science Focus in 2026

- Citizen Science campaign in Berlin
- Condition assessment of swales
- In cooperation with BWB & RWA
- Two areas in Berlin equipped with QR-Code signs:
 - Residential area (Karlshorst)
 - Commercial and industrial area (Adlershof)
- Supporting info - campaign:
 - Walking tour
 - Info signs
 - Flyer



→ Data can be viewed and accessed via web app

Demo web app



Thanks for your attention!

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