



WINCAN



WinCan
Web

Manhole Data Entry on Mobile Devices with WinCan MobileApp

Version: 2.6

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Introduction

Data entry for manholes can be done via the pipe inspection software WinCanVX or the WinCan MobileApp running on mobile devices.

This small application is available for free via Google PlayStore and has been designed for the following operating systems or platforms:

- Android tablet computer
- Android SmartPhone
- Apple-iPhone

An easy and self-explanatory user interface allows TV operators to enter the following basic manhole data and upload them directly to the WinCan CLOUD:

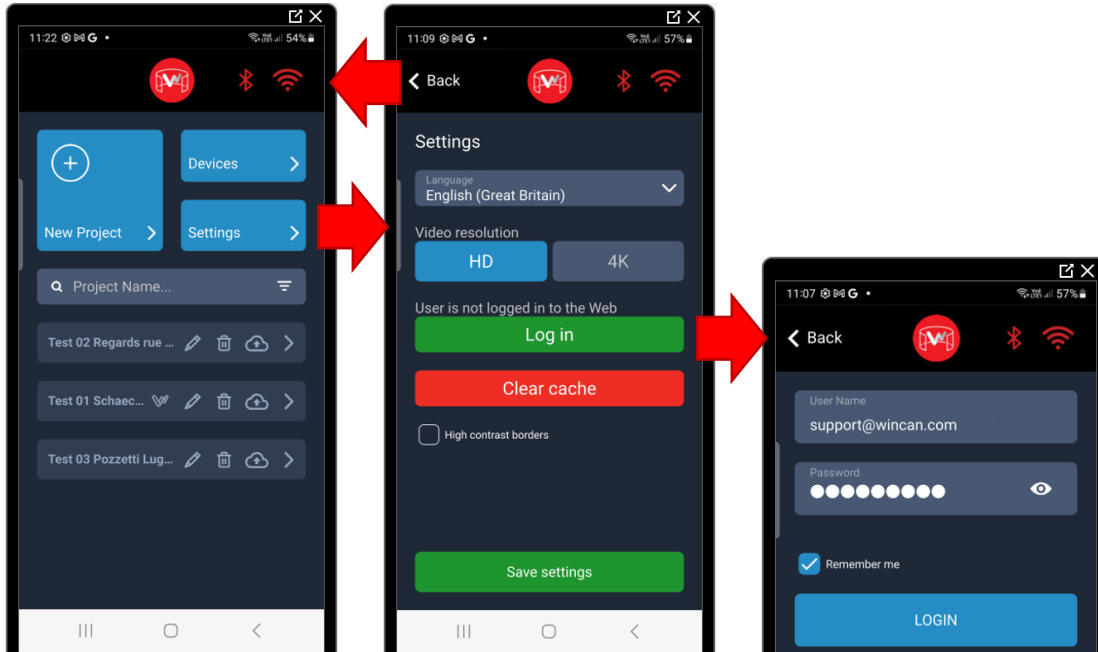
- **Manhole main data:** name, town, street, depth to invert, X/Y coordinates...
- **Manhole inspection data:** date, operator, inspection type and purpose, wheather
- **Manhole parts:** cover, cone, chamber, bench...
- **Inlets and outlets:** drawn on photo or graphical clock sketch

The usage of the WinCan MobileApp always requires a WinCanWeb account with the FLEX mode activated. Once the account data are saved on your mobile device (SmartPhone or tablet computer) you can create a project, enter manhole data, link video clips and photos to each manhole and finally upload it to your workspace on the WinCan CLOUD.

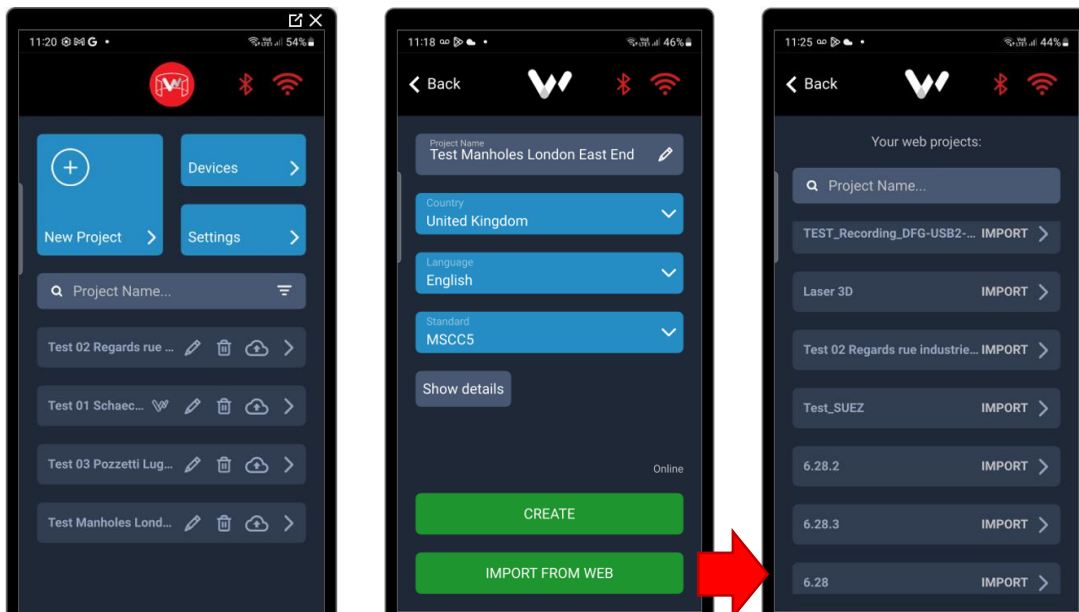
The FLEX mode then allows the user to complete the manhole data and create the reports directly on the CLOUD where the project link is finally sent from to the end customer.

Data recording with built-in camera of SmartPhone or tablet computer

- 1.) Run the MobileApp, go to *Settings*, select the **language** for your country and set the **video resolution to HD (High Definition)**.
- 2.) Check your Web **account data** (i.e. username and password) and confirm all settings hitting the button *Save settings*. The command *Back* then always gets you back to the previous view:

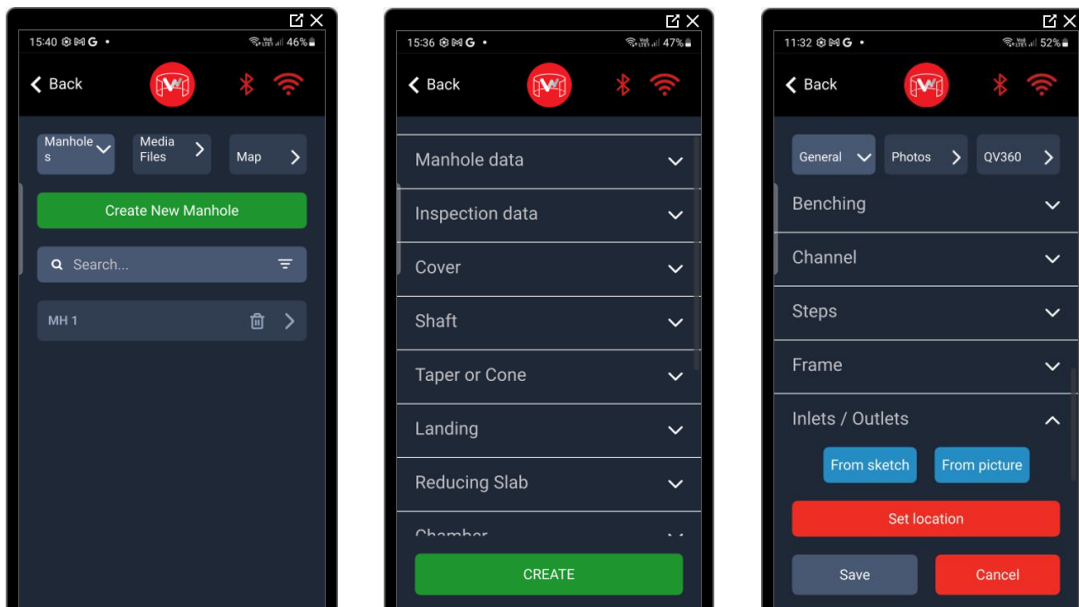


- 3.) **Create** a new project based on the damage assessment standard which is mainly used in your country/region OR **import** an existing project from the CLOUD:

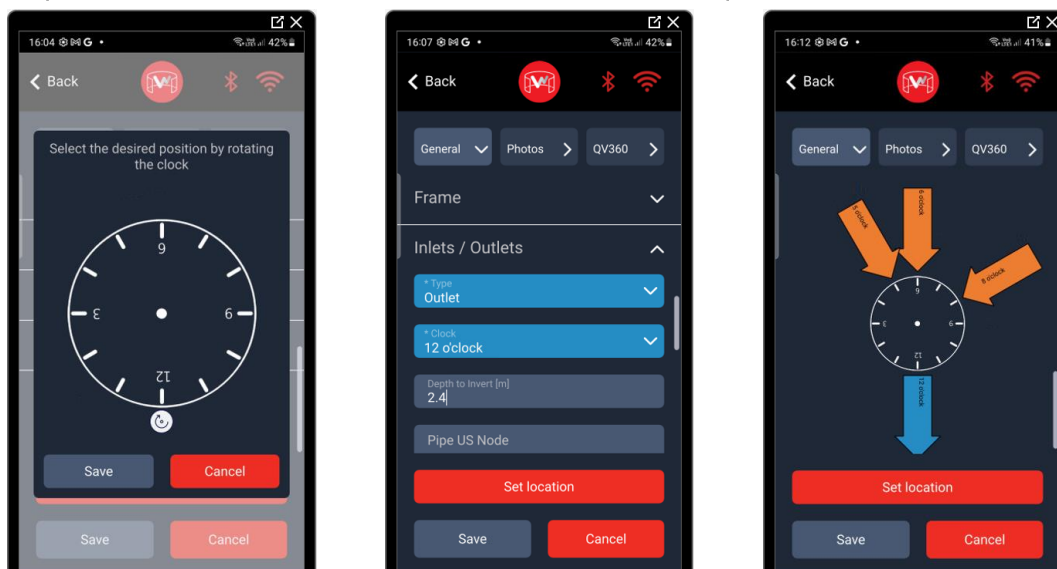


4.) Enter at least the following data **for each manhole**. Hit the arrow icon to the right to open or close the corresponding data input mask:

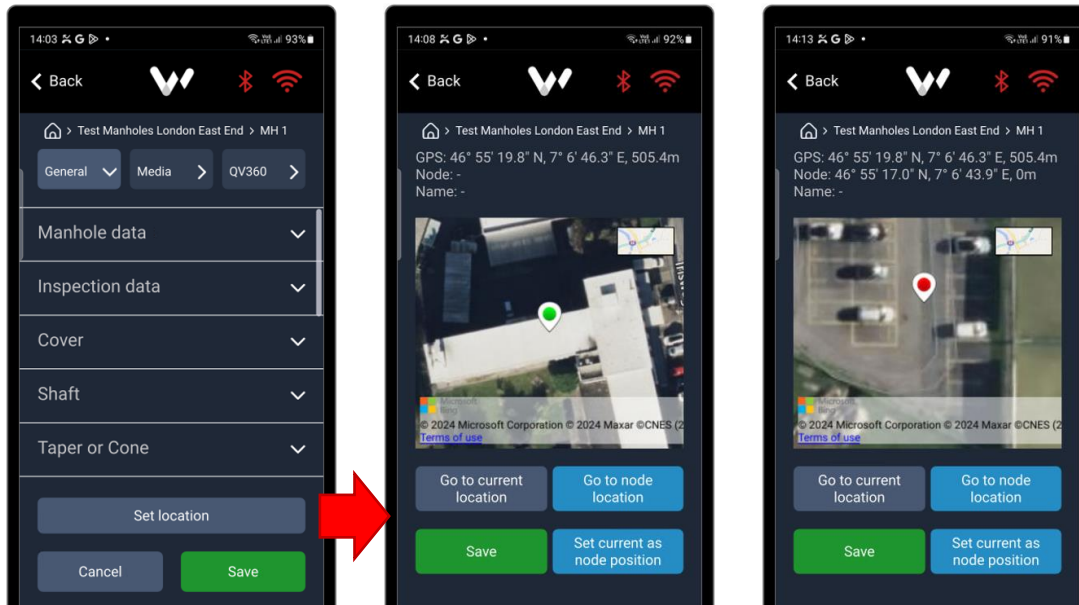
- Manhole name
- Manhole depth (measured from cover to bottom)
- Town
- Street
- Date of inspection
- Name of the operator
- Cover shape
- Cover diameter and width



- Manhole entries: type (inlet or outlet), clock position and drop. Hit the button *From sketch* to set the clock position of the inlet or outlet. Set the main outlet at the position 12 or 6 o'clock:



- Position of the manhole: the coordinates are provided by the GPS receiver of the mobile device (SmartPhone or tablet computer). Hit the button *Set location*, move the **mobile device (green icon)** to the center of the manhole and confirm the current position hitting the button *set current as node position*: a **red icon** then shows the manhole position. You can still move the red icon to adjust the manhole position keeping the finger on the desired location. Finally hit the SAVE button to return to the data entry mask.

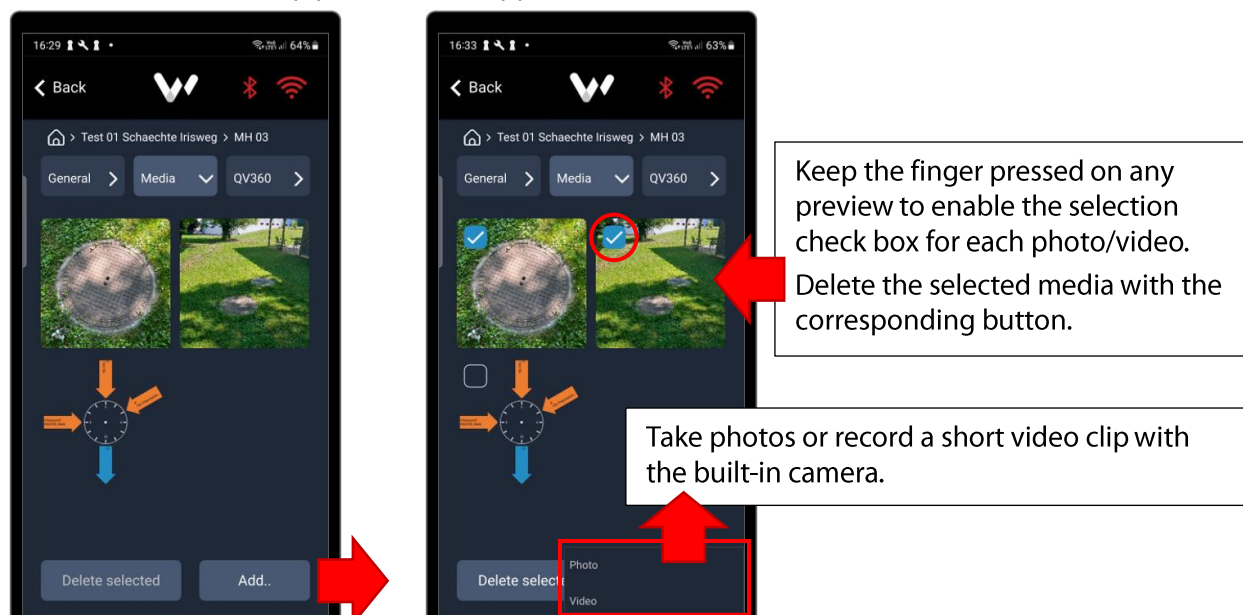


5.) **Manholes without defects:** take 3 or 4 photos per manhole:

- Photo of the manhole and its surroundings (for easier localization)
- Photo of the manhole cover
- Photo of the manhole taken from the cover level (0.00 m)
- Photo of the manhole bottom

6.) **Manholes with defects:** take one additional photo for each defect

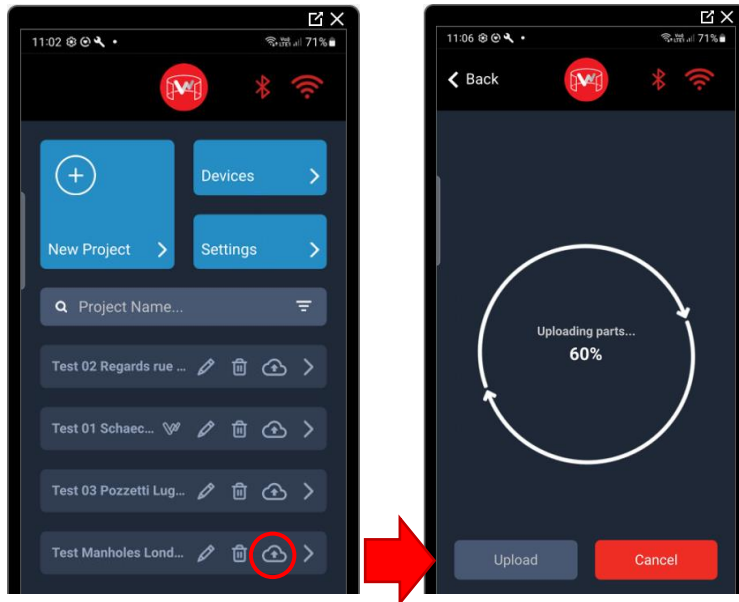
7.) Record one video clip per manhole (app. 30 sec)



Data transfer

Go to *Settings > Login*, enter the user credentials for your Web account and save the settings.

- Go back to the project list, select the desired project and hit the cloud icon.
- Next hit the *Upload* button to have the project uploaded to the WinCan CLOUD: a user friendly display is going to inform the user continuously about the upload progress which is particularly important in case of large manhole projects.



- Launch your Internet browser and log in with your Web account.
- Check whether all manholes have been uploaded together with the corresponding video clips and photos. **In case of large manhole projects it can last more than an hour until the videos can be played back.**

Printing of the manhole inspection reports can be done directly in the CLOUD. If you prefer to print your survey protocol with the software WinCan VX you may also download the whole project on your local hard drive and open it with a licensed version of WinCan VX.

Data recording with the QV360 camera from iPEK

Prior to the device launch, the identification numbers on the camera head (Bluetooth and camera serial number) must be registered and assigned to your web account. Simply scan the QR-code on your personal Web Cloud voucher for that purpose:



Important note for resellers:

Never scan the QR-Code on the Web Cloud voucher, which is reserved for the customer!

In case you want to test several QV360-cameras for different customers, always log in with your personal DEMO account (ADMIN mode) and manually type the corresponding camera serial numbers. Contact WinCan, Switzerland to have the **ADMIN mode** activated for your DEMO account.

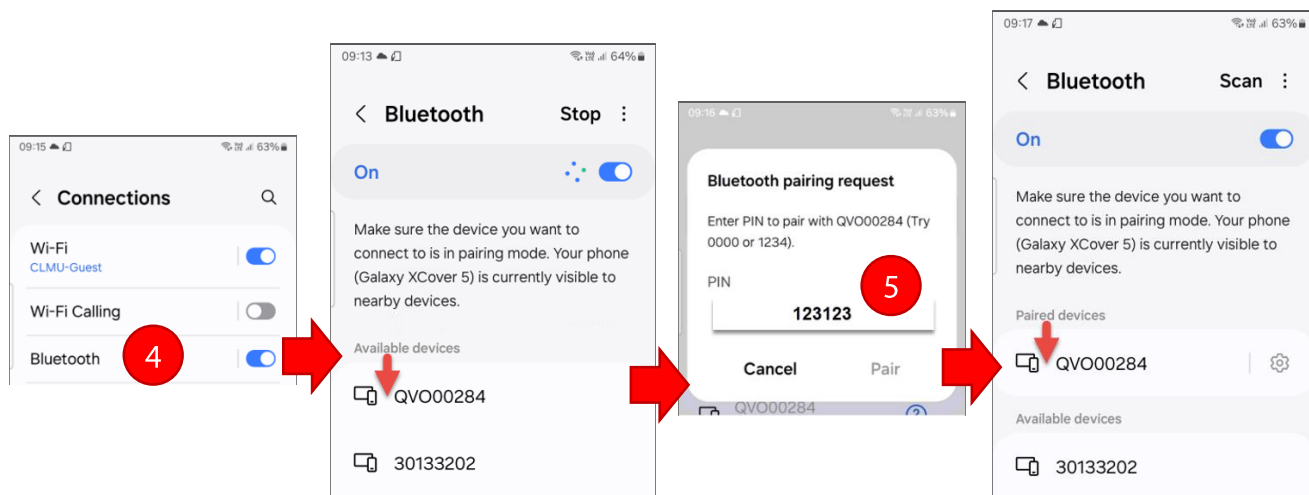
Pairing the camera to the SmartPhone or tablet computer

1.) Switch on the camera pushing the blue START button (1) and activate the Bluetooth hardware interface (3) keeping the small button (2) pressed with your finger nail for app. 3 sec.



2.) Next go to the settings of your mobile device (SmartPhone or tablet computer) and activate the Bluetooth connections (4) as well as the pairing mode for your Bluetooth device (i.e. QV360).

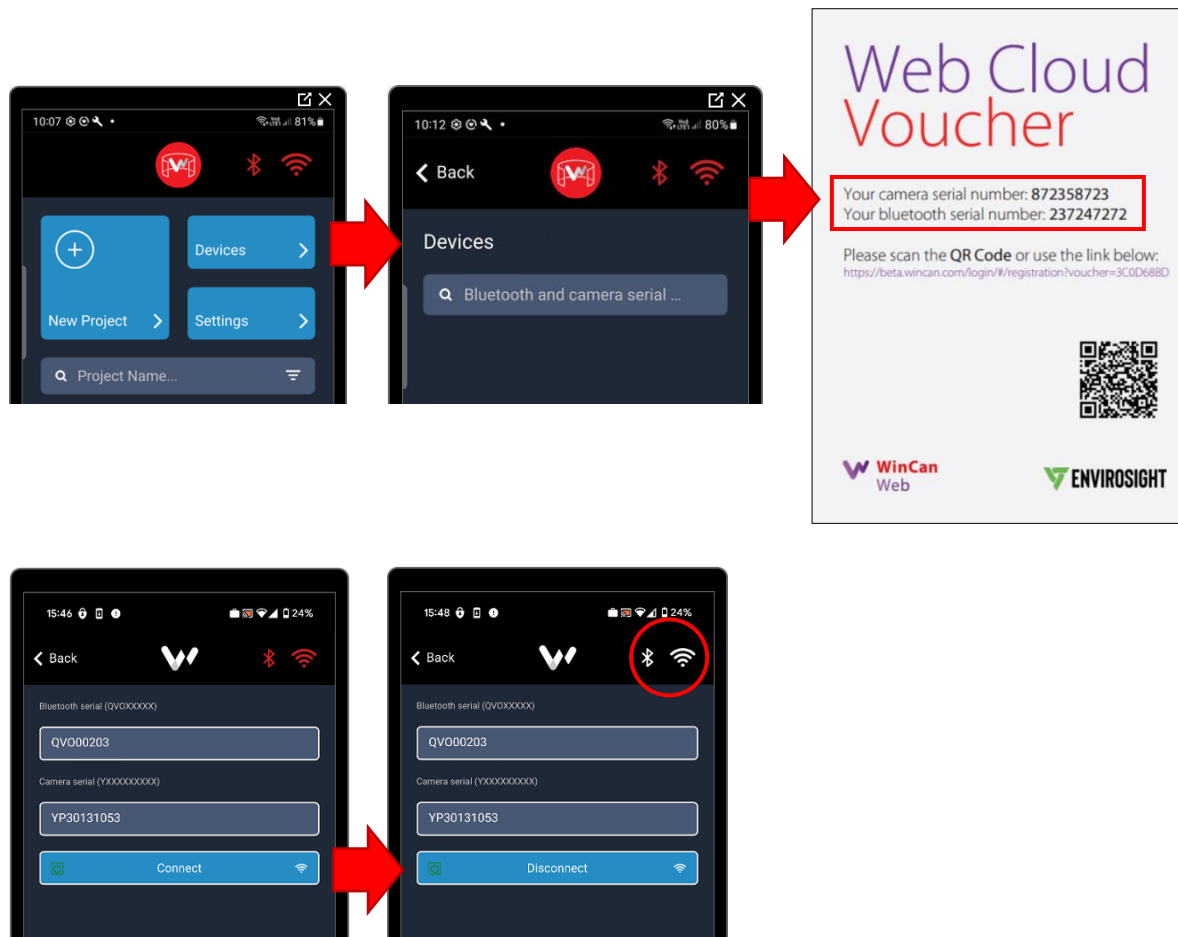
3.) Select the camera from the list of available devices and enter the **PIN-Code 123123** in the Bluetooth pairing prompt that pops up (5):



Working with the camera

It is recommended that this job is done by 2 operators:

- 1.) Run the Mobile App, go to *Settings*, select the **language** for your country and set the **video resolution to 4K**.
- 2.) Check your Web **account data** (i.e. username and password) and confirm all settings hitting the button *Save settings*. The command *Back* then always gets you back to the previous view.
- 3.) Hit the button *Devices* and enter the Bluetooth as well as the camera serial number into the corresponding text field. You can get both serial numbers from your personal WebCloud voucher:



- 4.) Go back to the MobileApp, hit the button *Connect* and mind the wireless connection icon that should switch from RED to WHITE: the MobileApp is now ready to receive the camera signal.
- 5.) Go back to the project list and create a project based on the damage assessment standard which is mainly used in your country (WRC, PACP, WSA, NZPIM etc.).

6.) Enter at least the following data **for each manhole** you are going to scan with the QV360 camera

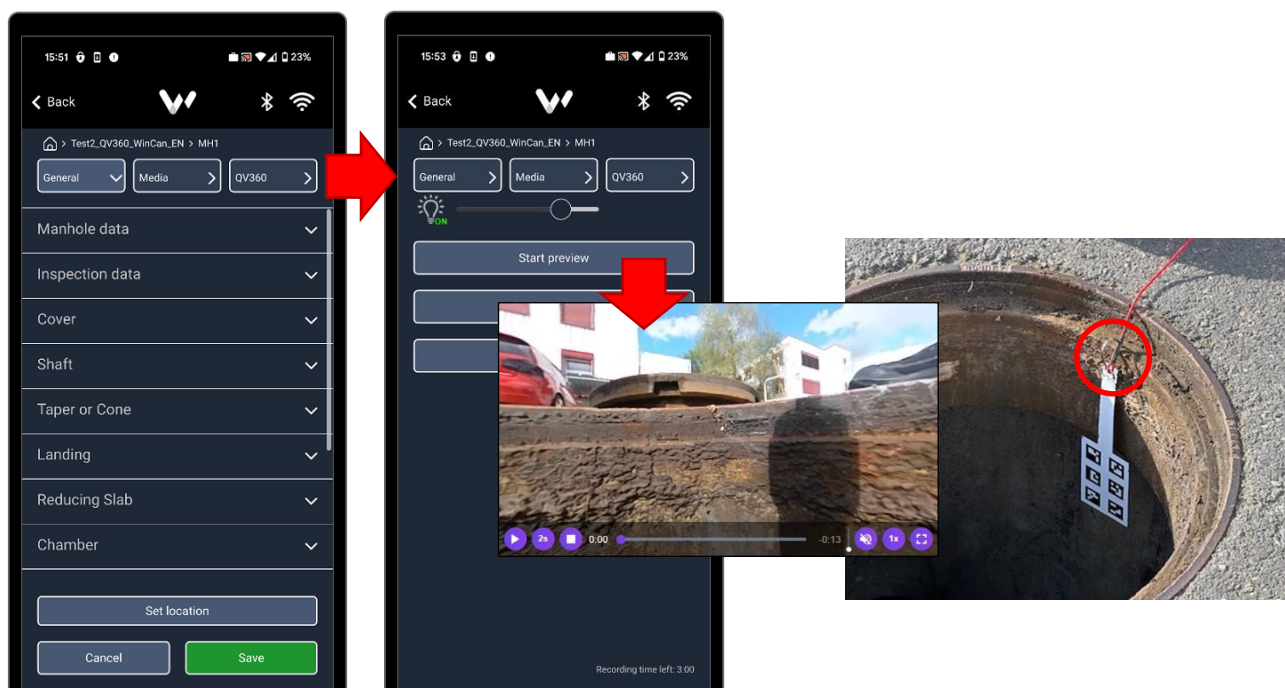
- **Manhole name**
- Town
- Street
- Date of inspection
- Cover shape
- **Cover diameter and width**
- Position of the manhole: the coordinates are provided by the GPS receiver of the mobile device (SmartPhone or tablet computer). Hit the button *Set location*, move the **mobile device (green icon)** to the center of the manhole and confirm the current position hitting the button *set current as node position*: a **red icon** then shows the manhole position. You can still move the red icon to adjust the manhole position keeping the finger on the desired location. Finally hit the SAVE button to return to the data entry mask.

7.) Hit the button QV360 to activate the camera signal.

8.) Set the luminosity slider to 100%

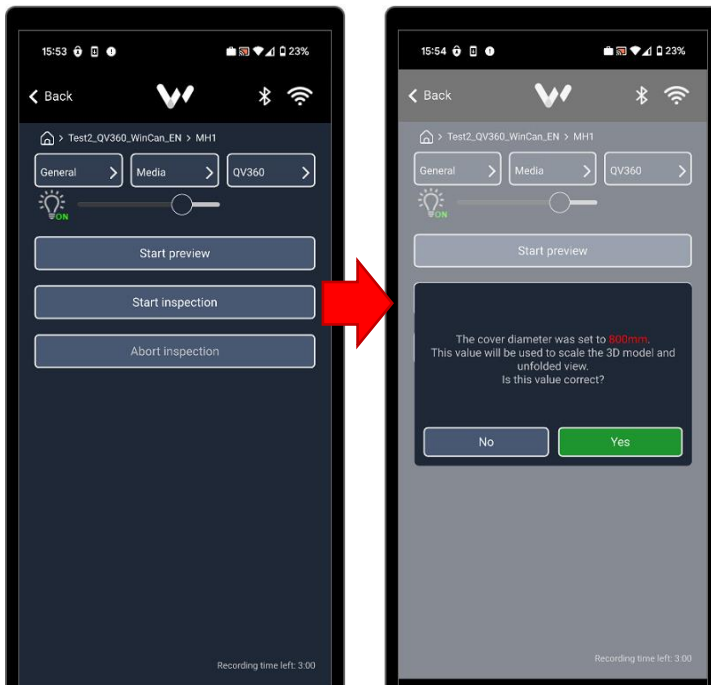
9.) Click on *Start preview* to set the start point of recording; mind the cover ring appears on app. 75% of the image height:

- Place the **ArUco marker** as shown in the picture below, so that the upper edge of the ribbon touches the cover ring.
- Point **the camera lens axis vertically to the ArUco slide** to have the reference code properly scanned: this will finally provide accurate measurements on the 3D and 2D view.
- Make sure the camera pole has been extended to the manhole depth (**max. 9 m**) and that the laser dot of the camera points to the center of the manhole bottom.

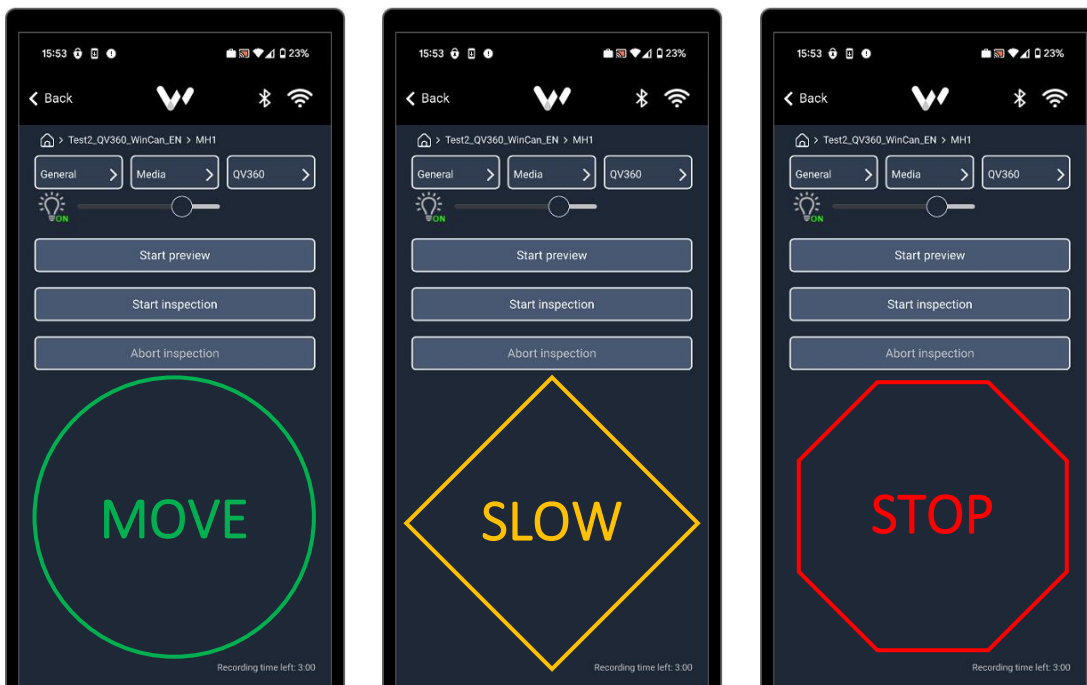


The manhole depth will be measured automatically during video recording.

10.) Hit the button *Start Inspection* and confirm the cover diameter in the message that pops up:



11.) Slide down the camera pole **vertically, steadily and slowly from the cover level to the bottom** and mind the state of the information panel that flashes up in the WinCan Mobile App:



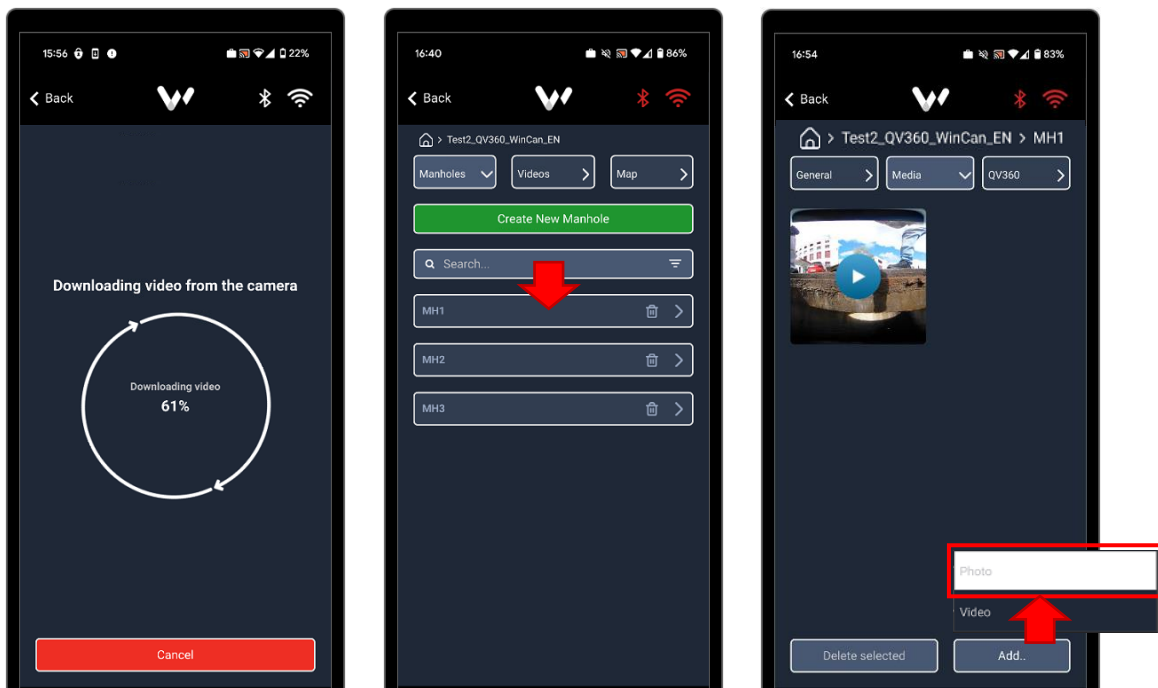
MOVE → movement OK

SLOW → slow down movement

STOP → recording finished → slide up the camera pole

12.) As soon as the video recording has finished the video clip is downloaded automatically from the QV360 camera.

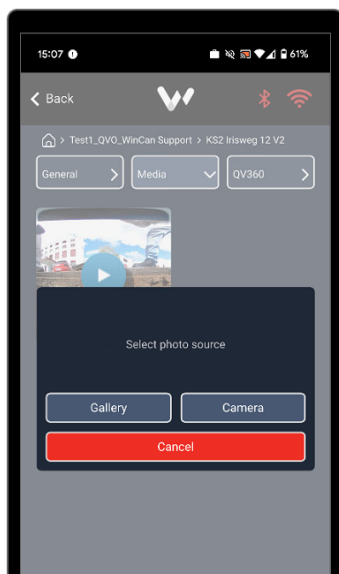
13.) Go back to the manhole list, select the desired manhole and hit the button *Media* to play back the assigned video clip.



So you can make sure there is a clip available, check the video quality and repeat the inspection if necessary.

14.) Finally take 2 pictures for the selected manhole from the built-in camera of your SmartPhone or tablet computer hitting the command *Add > Photos*:

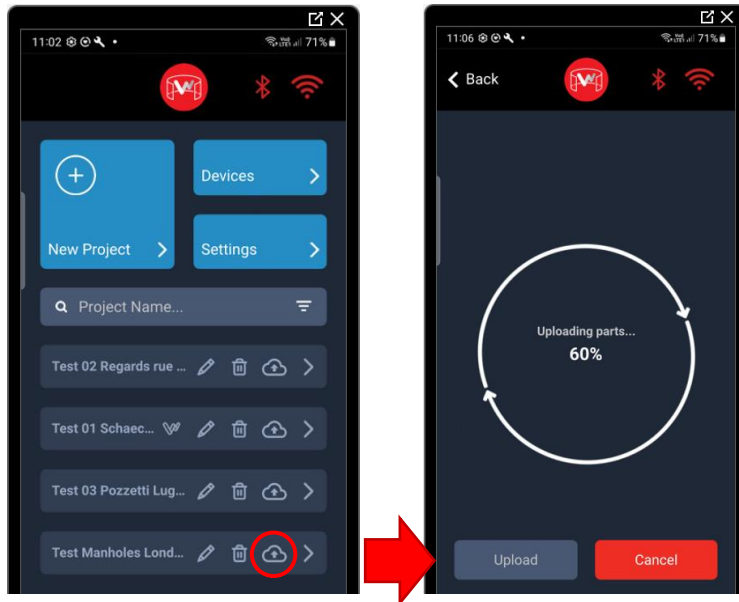
- Photo of the manhole and its surroundings (for fast and easy localization)
- Photo of the manhole cover



Data transfer

Go to *Settings > Login*, enter the user credentials for your Web account and save the settings.

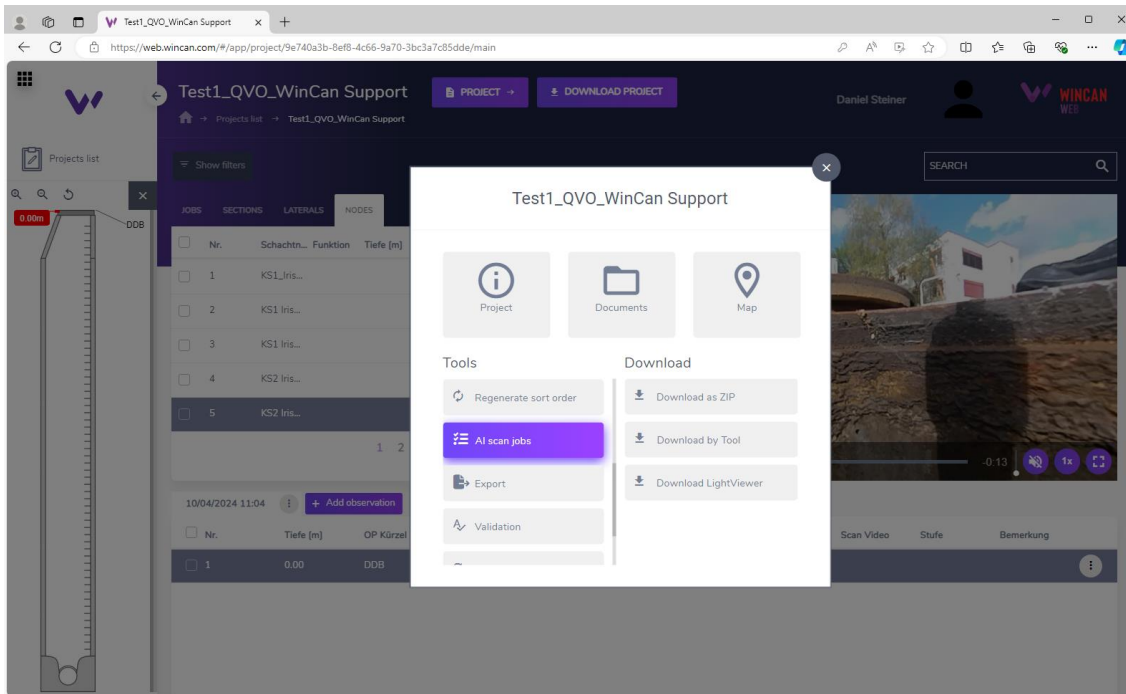
- Go back to the project list, select the desired project and hit the cloud icon.
- Next hit the *Upload* button to have the project uploaded to the WinCan CLOUD: a user friendly display is going to inform the user continuously about the upload progress which is particularly important in case of large manhole projects.



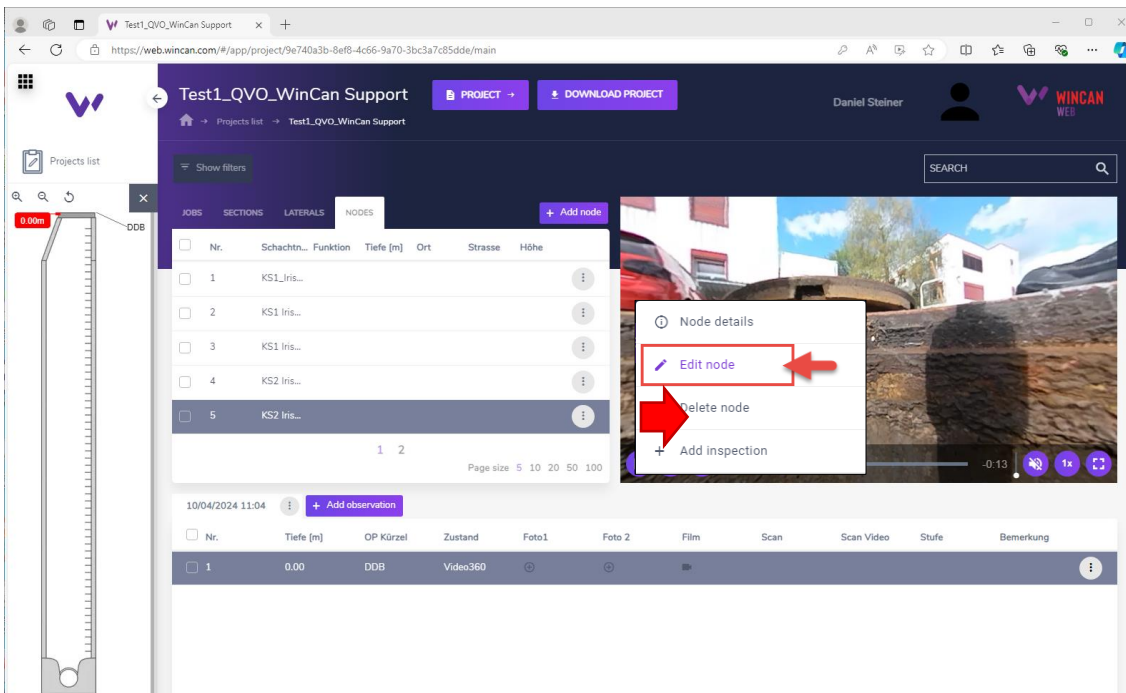
- Launch your Internet browser and log in with your Web account.
- Check whether all manholes have been uploaded together with the corresponding video clips. **In case of large manhole projects it can last more than an hour until the videos can be played back.**

Data processing

Data processing based on the video clip runs automatically after upload. Hit the button *Project > AI scan jobs* to follow the progress in a separate panel:

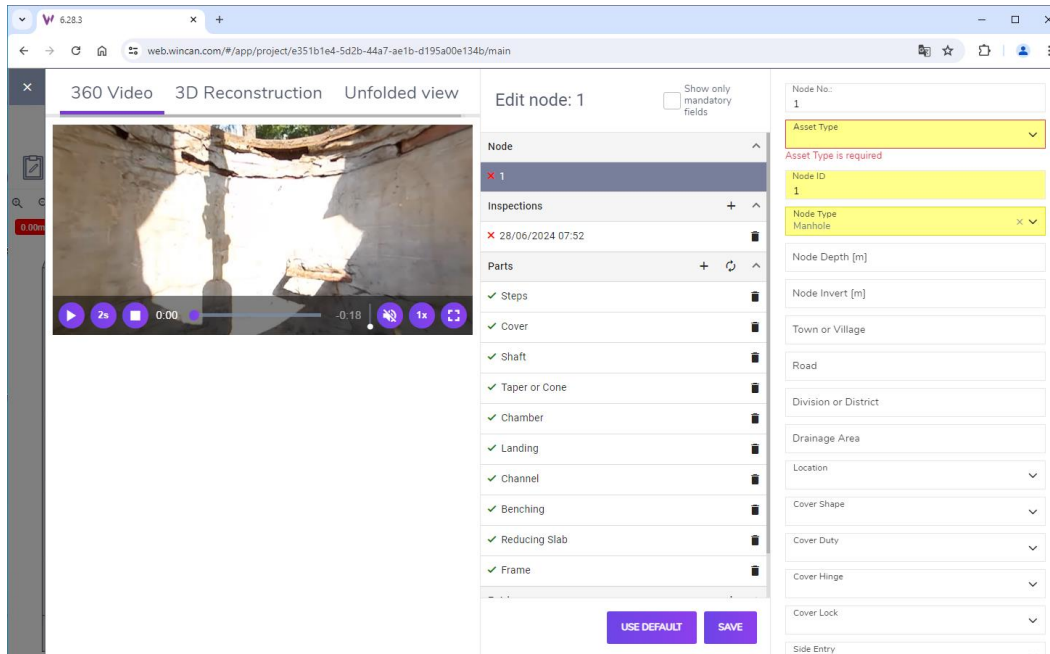


Once the AI scan jobs have finished, hit the menu button to the right of the desired manhole record and select the command *Edit node*:

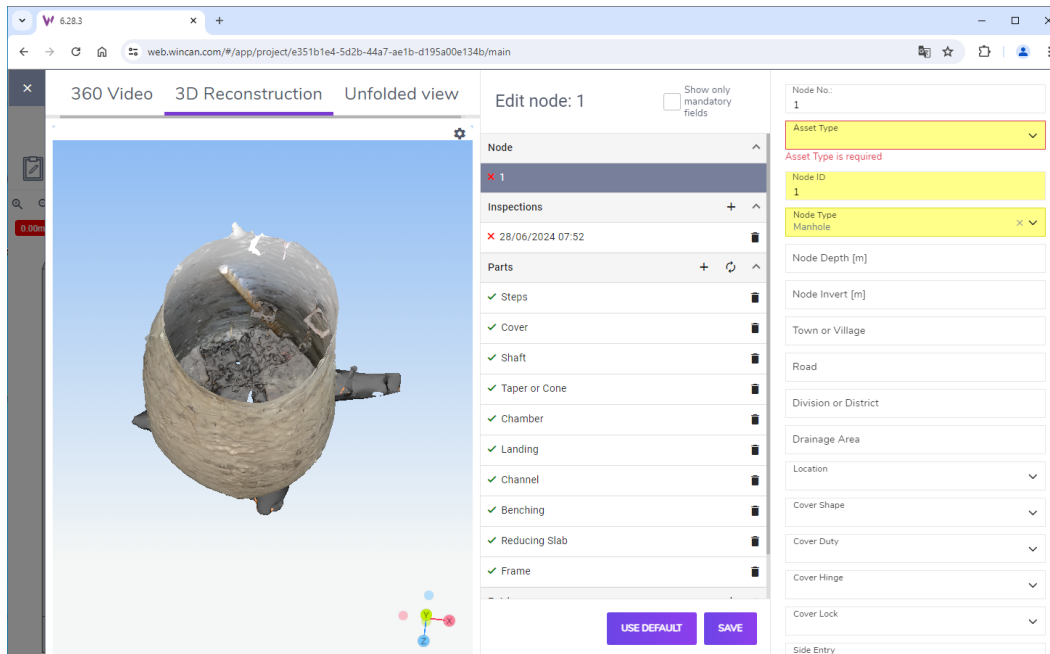


Left to the data entry mask there will be available 3 different views for each manhole:

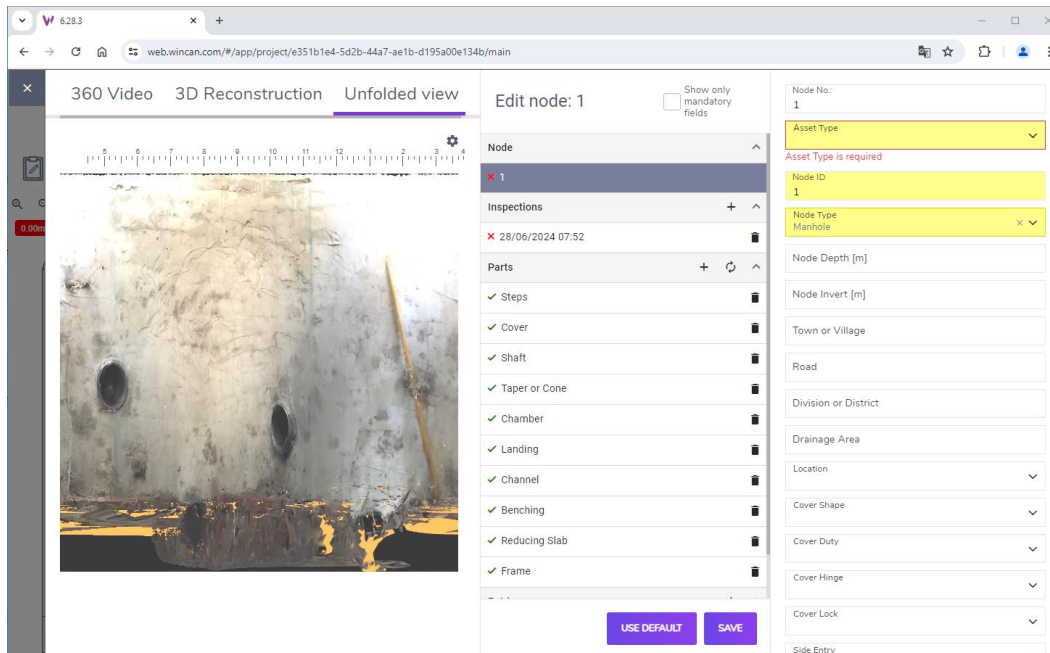
- 360° video view



- 3D view of the manhole structure. Use this view to measure the dimensions of the manhole and its parts (cover, cone, chamber, channel etc.)



- 2D view of the unfolded manhole wall. Use this view to measure the dimensions of the manhole parts and to clearly detect any kind of defect.



The screenshot displays the WinCan web application interface. On the left, there are three tabs: "360 Video", "3D Reconstruction", and "Unfolded view", with the "Unfolded view" tab selected. Below the tabs is a 2D image of an unfolded manhole wall, showing a textured, light-colored surface with two dark circular openings. A vertical scale bar is visible on the left side of the image. To the right of the image is a form titled "Edit node: 1". The form has a "Show only mandatory fields" checkbox. Below the title, there are sections for "Node", "Inspections", and "Parts". The "Node" section shows "Node 1" with a red "X" icon. The "Inspections" section shows a date "28/06/2024 07:52" with a red "X" icon. The "Parts" section lists various components with green checkmarks: Steps, Cover, Shaft, Taper or Cone, Chamber, Landing, Channel, Benching, Reducing Slab, and Frame. At the bottom of the form are two buttons: "USE DEFAULT" and "SAVE". To the right of the form is a sidebar with a "Node No." field set to "1". Below this is a dropdown menu for "Asset Type" with a yellow background. A message "Asset Type is required" is displayed. Below the message are fields for "Node ID" (set to "1"), "Node Type" (set to "Manhole"), "Node Depth [m]", "Node Invert [m]", "Town or Village", "Road", "Division or District", "Drainage Area", "Location" (with a dropdown arrow), "Cover Shape" (with a dropdown arrow), "Cover Duty" (with a dropdown arrow), "Cover Hinge" (with a dropdown arrow), "Cover Lock" (with a dropdown arrow), and "Side Entry".

Printing of the manhole inspection reports is always done in the CLOUD. Mind that the 3D structure and the unfolded wall of the manhole can currently not be printed on a PDF report page!