



# WINCAN

## Input, Processing, Output and Management of Sewer Inspection Data

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# 1 Introduction

The software **WinCan VX** has been developed for the description of in-pipe observations as well as for the inspection of manholes and boreholes and is available in five variants. The basic module *WinCanVX Entry* provides all the core functionalities of a sewer inspection software. If required, the customer can buy additional functions that are part of the advanced modules *WinCanVX Lite*, *Advanced*, *Expert* and *Office*.

Function	VX Entry	VX Lite	VX Advanced	VX Expert	VX Office
Section Data	✓	✓	✓	✓	✓
Basic Reporting	✓	✓	✓	✓	✓
Data Viewer	✓	✓	✓	✓	✓
All Languages & Standards	✓	✓	✓	✓	✓
Map Entry	✓	✓	✓	✓	✓
Photo Assistant	✓	✓	✓	✓	✓
Drawing Functions	✓	✓	✓	✓	✓
Meta DB	✓	✓	✓	✓	✓
SQL & Oracle Database	✓	✓	✓	✓	✓
Multiple Inspections	✓	✓	✓	✓	✓
Grading	✓	✓	✓	✓	✓
MPEG 1		✓	✓	✓	
MPEG 2 & 4			✓	✓	
Sensor Measurement			✓	✓	✓
Data Validation			✓	✓	✓
Lateral Inspections				✓	✓
Manhole Inspections				✓	✓
Report Generator				✓	✓
GIS Map Module				✓	
Rehabilitation Planning				✓	

## 1.1 System requirements

WinCan VX is running on computers with a Windows operating system only. The various versions as well as the major hardware requirements are listed below:

### Operating Systems:

Operating system (LOCAL): Windows 8/8.1, 10 (PRO-Versions, 64 bit)

OR

Operating system (SERVER): Windows Server 2003, 2008, 2008-R2, 2012, 2012-R2

*The latest Windows updates must always be installed!*

### Hardware:

Processor: INTEL Core i5 (2.5 GHz) or higher.

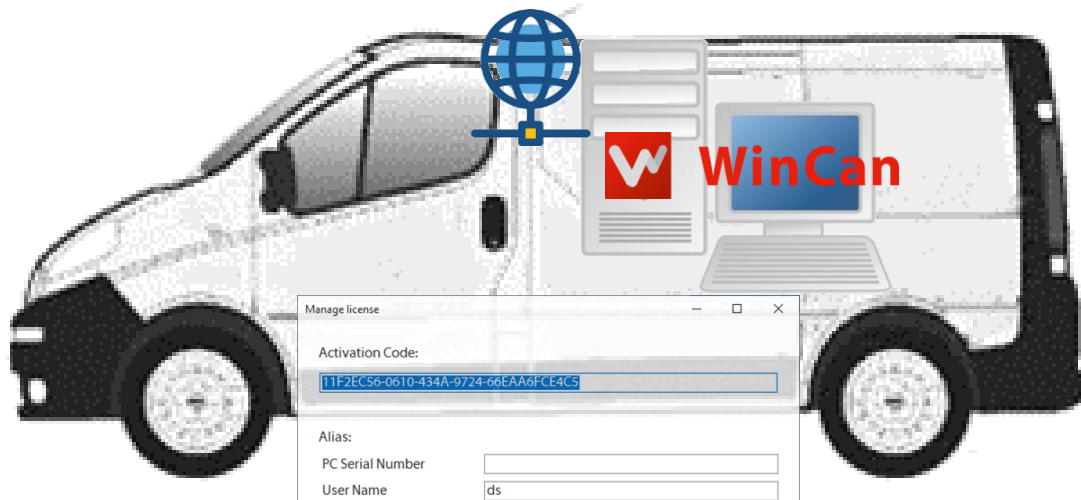
Graphic card: NVIDIA GeForce 9 series, or higher (possibility of signal distribution to multiple monitors).

RAM: 8 GB or higher.

Video card: VITEC card (PCI or PCI-Express), MobileCap124 (USB device) or any WDM based encoding card for video digitization.

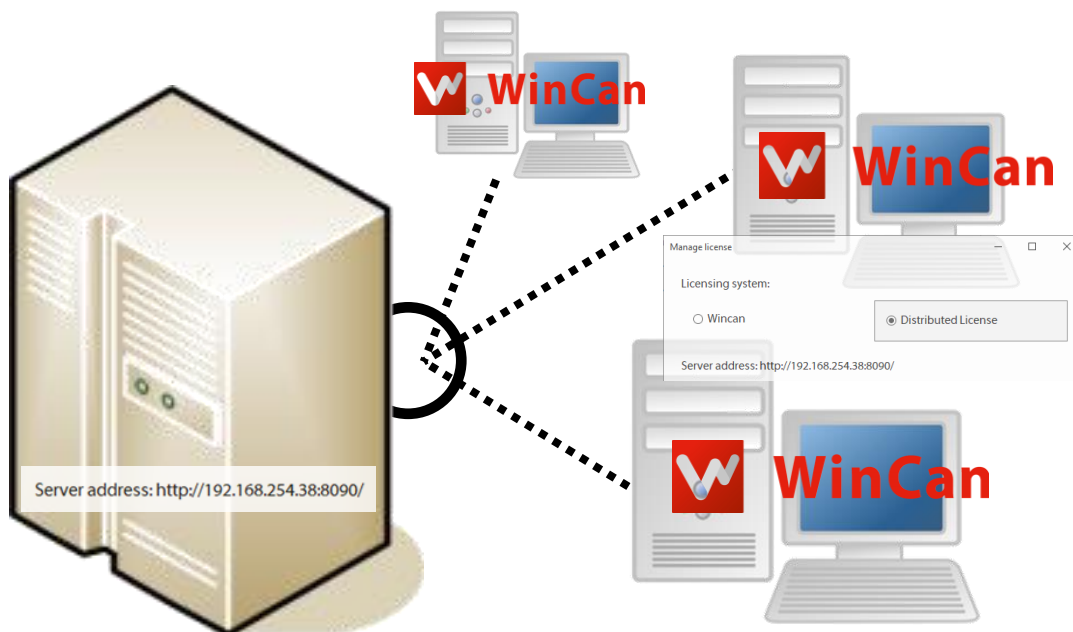
## 1.2 Using WinCan VX in a TV Vehicle

The software is usually installed on a single workstation built-in to a CCTV van. Every PC must have an individually licensed and configured copy of the software, as CCTV vehicles can often have different camera equipment and/or text generators. Licensing is actually done via a personal code (software license) sent directly by CDLab. **A connection to the Internet is therefore required:**



## 1.3 Using WinCan VX in the Office

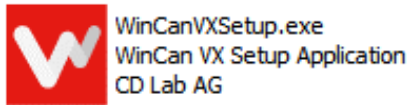
WinCan VX is installed individually on each required office PC (Client). Licensing can be carried out either via a local software license or via an internal license server the domain administrator has to install previously on the network server:



In some cases, larger companies or municipalities work with large server databases such as MSSQL or ORACLE, which WinCan VX can also be connected to.

## 2 Installation

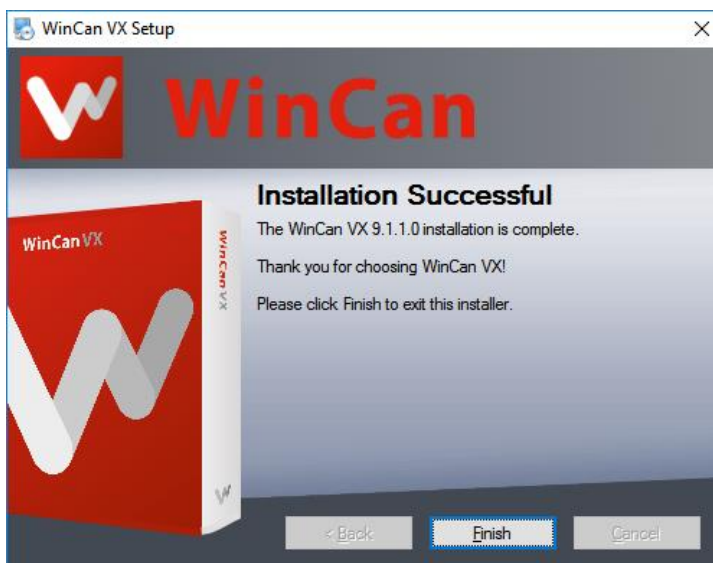
The *WinCanVXSetup.exe* installation package is located on the installation CD or from the Web page [www.wincan.com](http://www.wincan.com) (*Support > Download*):



- Start your computer and mind that you log on either as a **user with administrator privileges** or as **Local Administrator**.
- Double-click the installation file shown above to run the installation.
- If the system requirements are satisfied, the installation begins.



- Follow all the instructions of the wizard and click on the *Next* or *Agree* button to confirm each step.
- When WinCan VX is installed correctly, click *Finish* and start using WinCan VX.



The program installation is now complete.

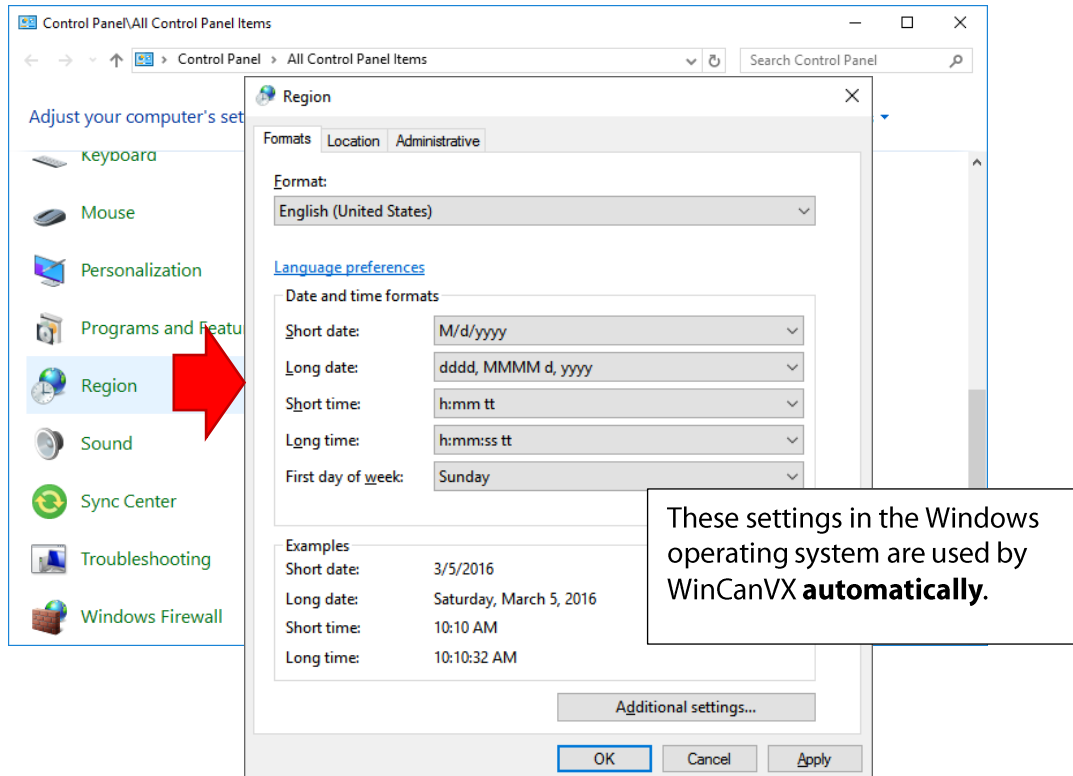
All the files needed by WinCan VX are located in two directories on the PC:

- *C:\ProgramFiles (x86)\CDLAB*
- *C:\Users\Public\Public Documents\CDLAB*

Mind that both directories are **excluded from any AntiVirus scan** and that their privilege level is set to **Full Control**.

## 2.1 Setting Regional Defaults

To ensure the regional and language defaults are set correctly for your PC, open the Windows Control Panel of your computer to set as required for your own region and country:



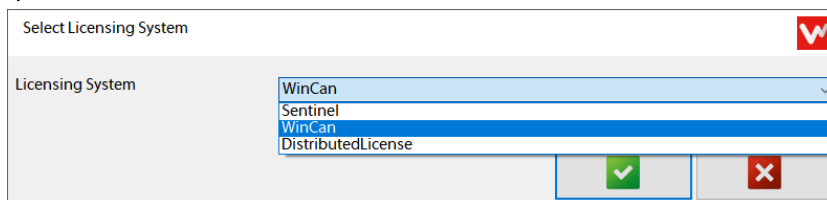
### 3 Licensing

After successful installation of WinCan VX, the user has to activate either a local (license system *WinCan*) or a server license (license system *Distributed license*). **Both cases require a stable internet connection.**

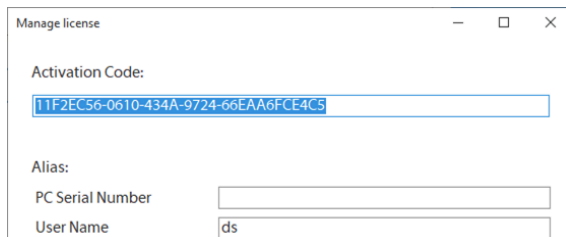
#### 3.1 Local License

The following steps describe the licensing process on single-user computers in TV vehicles or offices. Licensing is actually done via an individual license code sent by e-mail (software licensing).

- Install WinCan VX and launch the software.
- Activate the license system *WinCan* via the command *General > Manage licences > Select license system*:



- Restart WinCanVX, run the command *General > Manage licenses > Update license*, and copy your personal activation code into the corresponding text field:

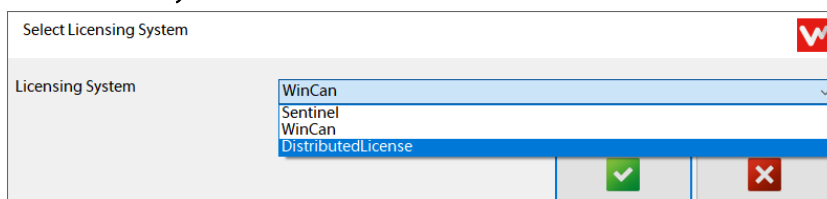


- The validity of the license is confirmed on the right part of the main interface and all functionalities/modules you purchased are activated from now on your computer.

#### 3.2 Server License

If you prefer installing WinCanVX on several CLIENT computers within a local network, the installation of a network license service makes more sense. SERVER and CLIENT computers (PCs oder Notebooks) should therefore be a part of the same subnet. Proceed as described below in order to make full use of this license system:

- Ask your domain administrator to establish an internal network license service. The instructions needed can be obtained via the link.  
<https://cdlabdev.atlassian.net/wiki/spaces/FAQ/pages/711819369/WinCan+VX+License+Server+Requirements+and+Installation>
- Install WinCanVX on all CLIENT computers within the local network.
- Activate the license system *Distributed License* via the command *General > Manage license > Select license system*:



- Restart WinCanVX, run the command *General > Manage licenses > Update license*, and type the IP address of the license server into the corresponding text field:

- A message confirms the validity of the license and activates the WinCan VX modules you will be able to use at least on 5 client computers within the local network. A license extension for 10 to 50 CLIENT computers can be ordered at any time.

### 3.3 License check

License validation is always done in the background whenever the computer is connected to the internet. **Mind that you will have to connect a computer in the TV truck at least once per month and then restart WinCanVX to make sure the license is validated.**

The message *License successfully updated* is popping up for a few seconds above the system date/time display. So WinCanVX is ready for use for another month without a daily license check.

### 3.4 License update

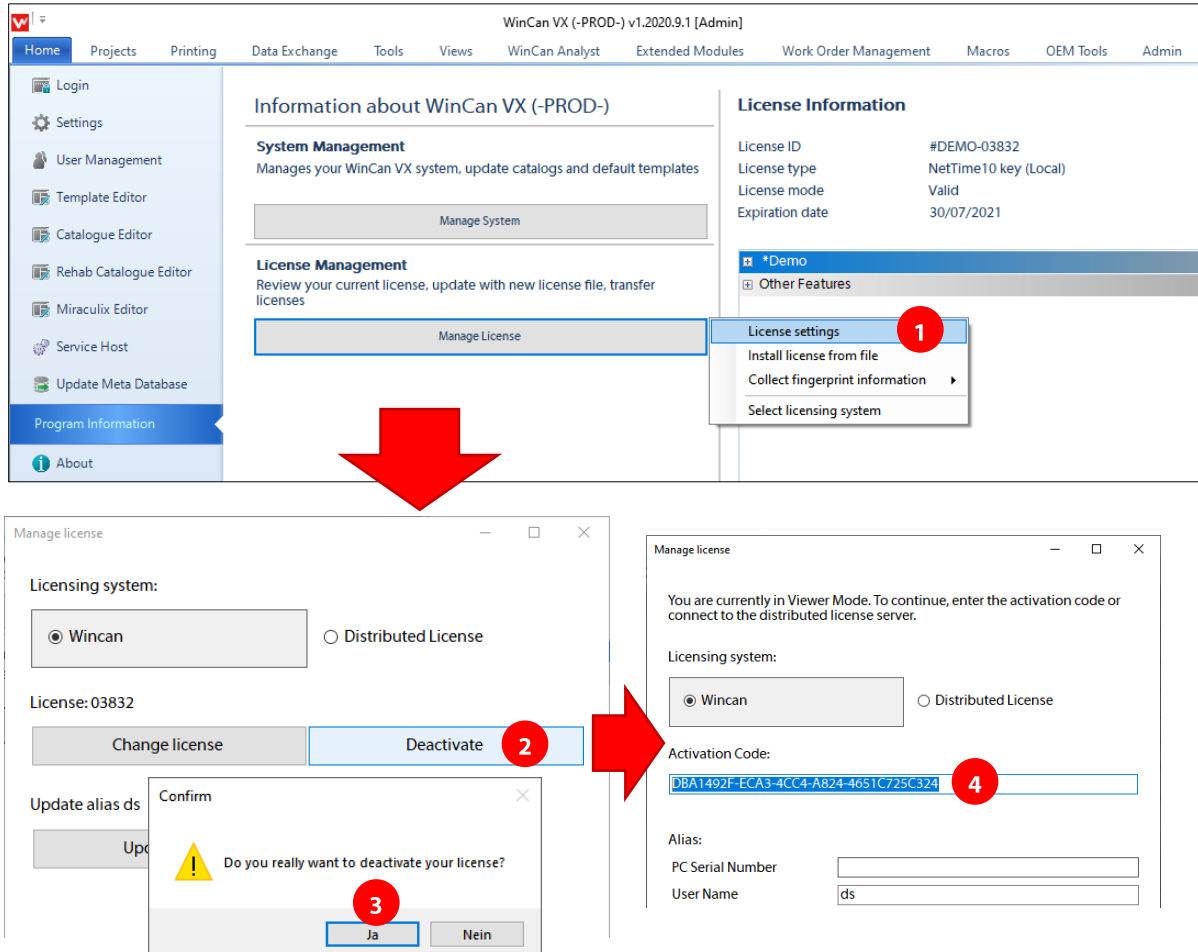
If you want to upgrade the software with additional features or modules, you must first order them via e mail to [sales@wincan.com](mailto:sales@wincan.com). The CDLab administration then activates the desired features directly via Internet.

Next you will have to check your internet connection and restart WinCanVX: the message *License successfully updated* is popping up again for a few seconds above the system date/time display.

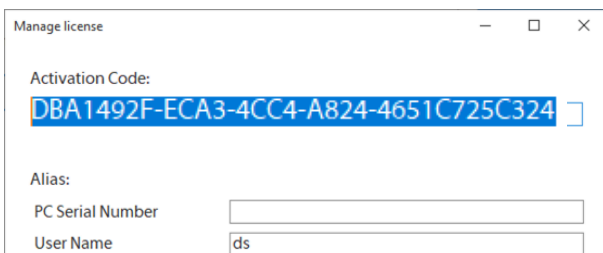
Finally hit the tab command *General > Program information* and check, whether the new features appear in the list on the right part of the main interface.

### 3.5 Reactivation of the same license on another computer

If you want to detach your license from the current work station (**computer 1**) in order to be able to use it on another computer, make sure you have an internet connection and run the command *Home > Manage License > License settings*. Next hit the button *Deactivate* (2) in the dialogue box that follows:

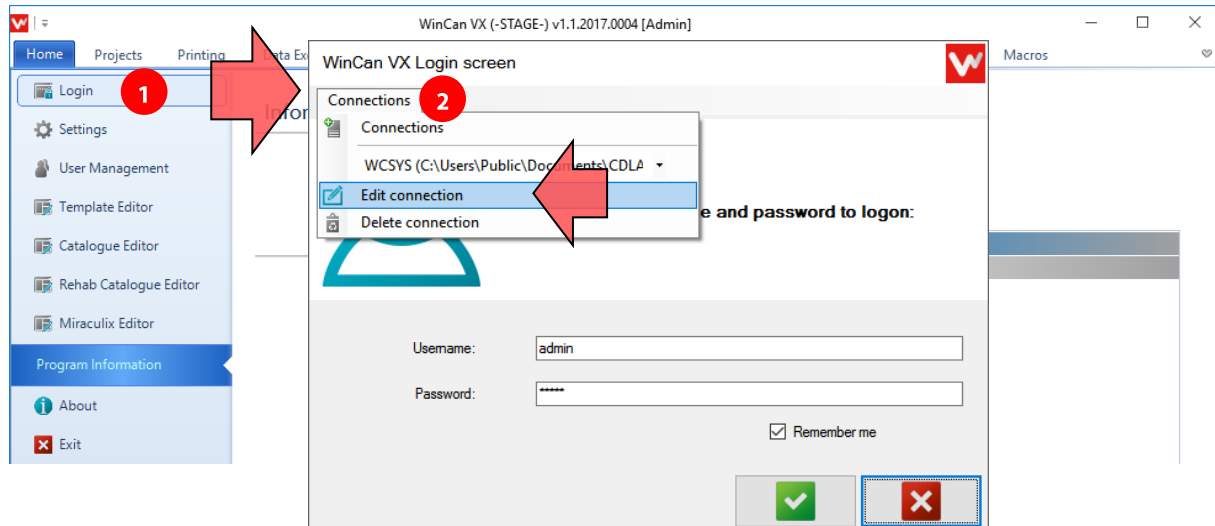


- Confirm the corresponding warning message (3).
- Copy (Ctrl + C) the new license code (4) into a blank TXT file (Ctrl + V) and close the dialogue box.
- Copy the TXT file to a removable drive and go to **computer 2**
- Plug the removable drive to computer 2, open the TXT file, highlight the activation code and copy it to the clipboard (Ctrl +C)
- Run the command *Home > Manage License > Install/Update license* and paste (Ctrl + V) the activation code into the text field as shown in the dialogue below:

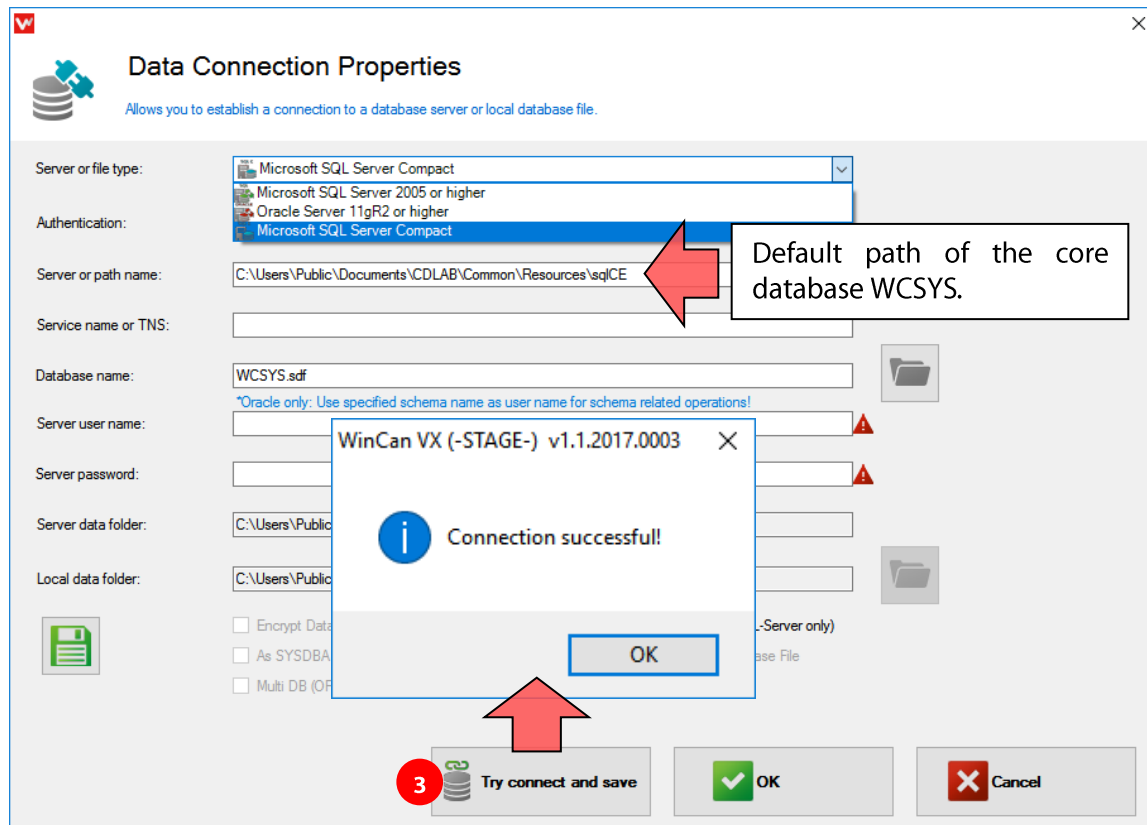


## 4 Logging on the Core Database

When launched WinCanVX usually opens the main-screen automatically and also gives direct access to the list of recently used projects. The software therefore either logs on the core database WCSYS as **Administrator** (username = *admin*; password = *admin*) or as **Operator** (username = *operator*; password = *operator*). Both user accounts are created per default during the installation of WinCanVX:



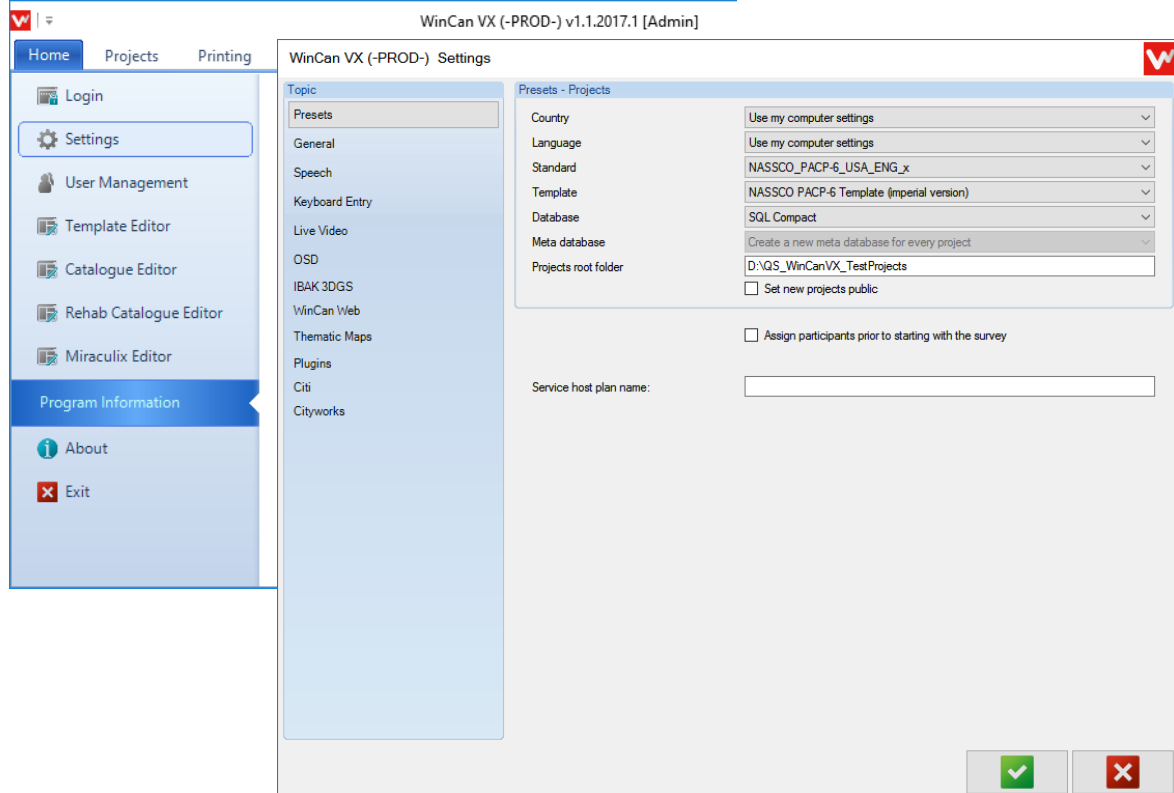
Especially when working within a SQL-Server environment a user will have to log in (1) with his personal account. For such a case the Login screen is providing menu commands (2) for adding or editing specific connections to the core database WCSYS:



After you have entered all required login parameters, test the connectivity (3) and thus make sure to be able to create and edit local or server projects in the future.

## 5 Program Settings

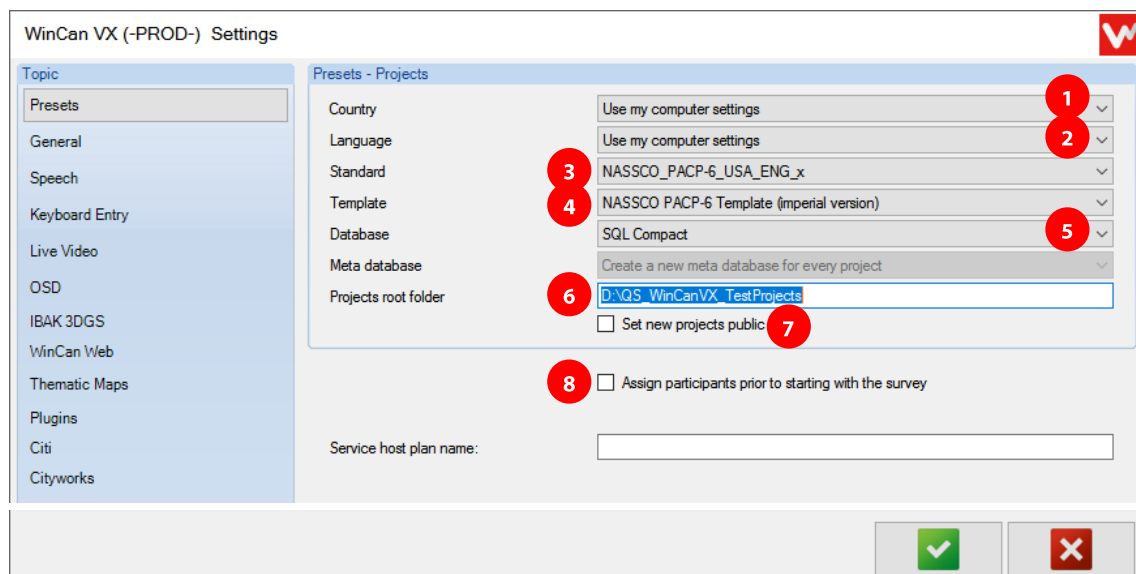
General program settings are mainly done via the command *Home > Settings*. The corresponding dialogue box is providing all options therefore needed and grouped into separate categories. Some important options are already activated per default:



The following pages are going to explain the categories with all their options in detail.

### 5.1 Presets

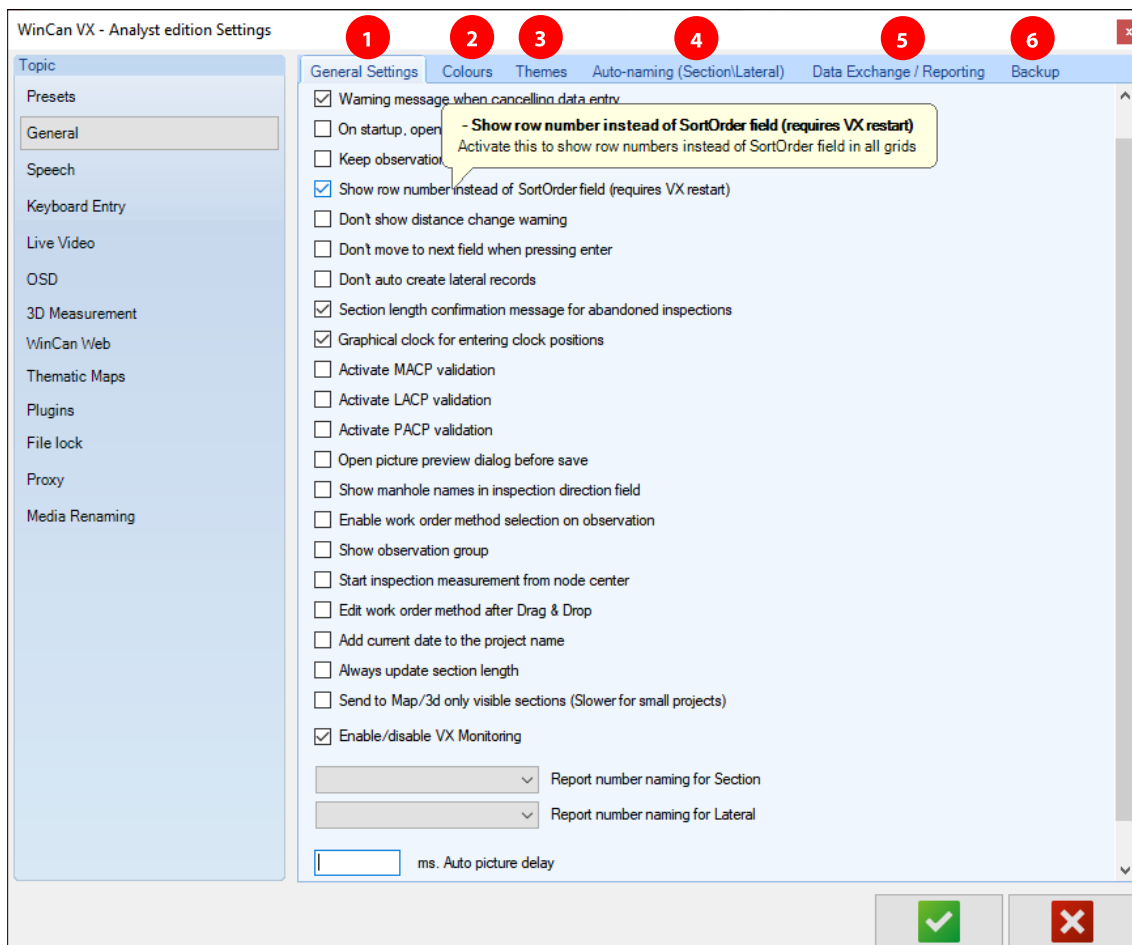
This menu sets the default settings for new projects.



1. The country setting can be set in this line. It is recommended to mirror the personal computer settings.
2. The language in which the projects are recorded, can be set in this line. It is recommended to mirror the personal computer settings.
3. The preferred recording standard can be set in this line. This is automatically applied when a new project is created, but can be changed in the project at any time.
4. A preferred template can be set in this line. It is applied automatically when a new project is created, but can be changed in the project at any time.
5. This line sets the preferred database type.
6. In this line the default project save path is set for new projects.
7. This option makes new projects accessible to anyone who has access to it.
8. This option controls whether the project participants interface is launched immediately after creating a new project. Keep it unchecked if you prefer to start directly with the survey instead of entering the participants addresses.

## 5.2 General

This category contains a couple of basic options, which are summarized under the tab *General Settings* (1) and which you have to activate in most of the cases before you start entering data and recording damages. Hover with the mouse over the text to get a direct help to the corresponding option:



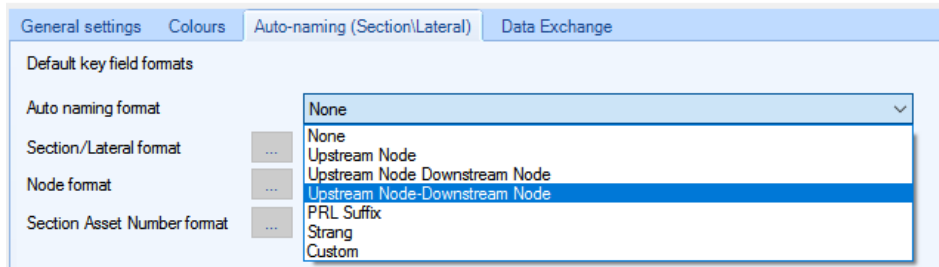
Find a brief description to the other tabs (2 to 6) of this category in the paragraph below:

*Colours* (2): this sub-category allows the user to set the background colours for the desired group of database fields.

*Themes* (3): hit this tab if you like to replace the default background image of WinCanVX.

*AutoNaming (Section/Lateral)* (4): select a predefined method for the renaming of sections or manholes. Either select a predefined renaming template (e.g. *UpstreamNode – DownstreamNode*) or highlight the format *Custom* and pick yourself the database fields the section/manhole name should be based on.

Select the list item *None* to switch off the *AutoNaming*:



*Data Exchange/Reporting* (5): this sub-category provides settings needed for data output (e.g. printing or country specific exports).

Non inspected objects are not printed per default. In addition you can get sections, laterals and manholes printed continuously or in groups.

*Backup* (6): this important sub-category allows to control the automatic savings of all the settings done in WinCanVX on the current computer. The settings information that are saved in the background automatically during program launch are listed below:

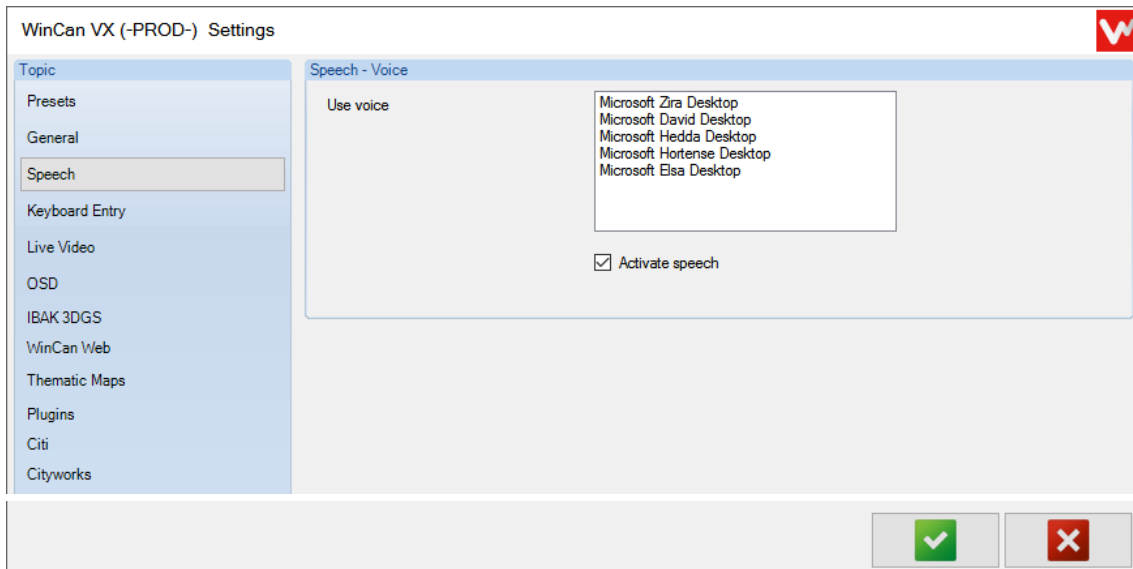
- General configuration settings (*General, Keyboard entry, LiveVideo, OSD etc.*)
- Customized view profiles.
- Customized printing settings
- Data of project participants (clients, project managers, inspection companies, operators, inspection equipment)
- Contractor logo

You can have a number of backup files created and take any of these backup files in case you need to restore your settings either on the current or any other computer, where WinCanVX has been installed.

So there's no need anymore to reconfigure the software after a fresh installation of WinCanVX.

## 5.3 Speech

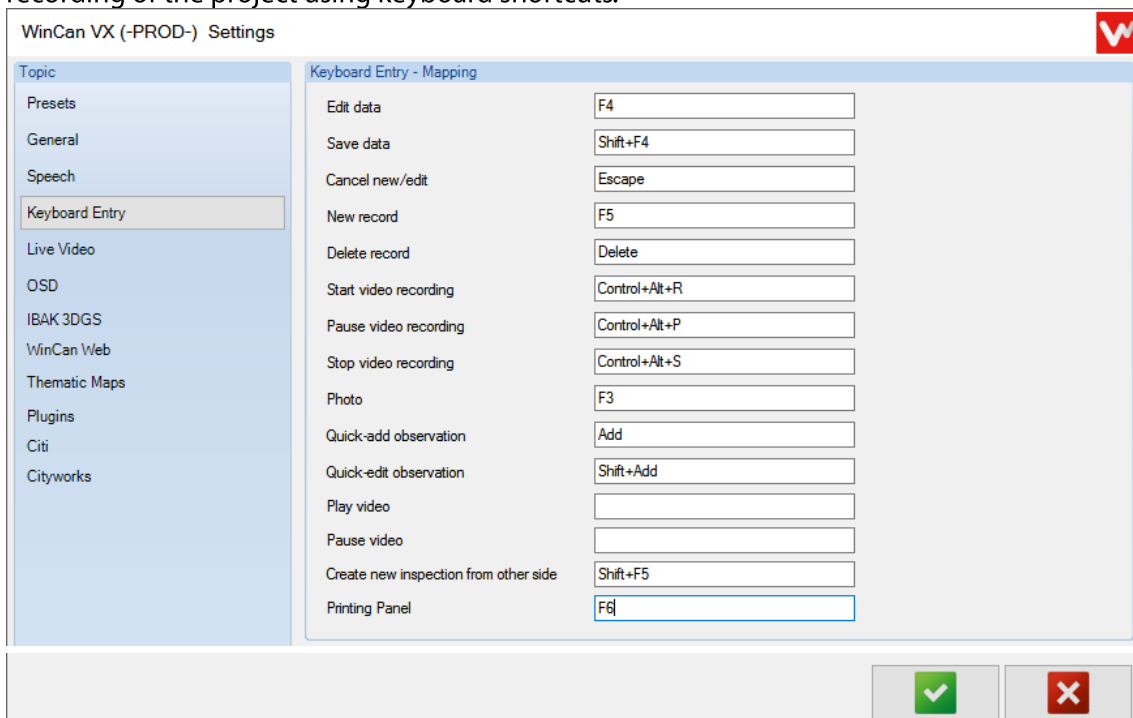
In these settings, spoken observations can be switched on:




If the option *Activate Speech* is enabled, the observations are read out loud in the user's selected computer voice.

## 5.4 Keyboard Entry

In this section, keyboard combinations can be defined, to enable common commands during the recording of the project using keyboard shortcuts.

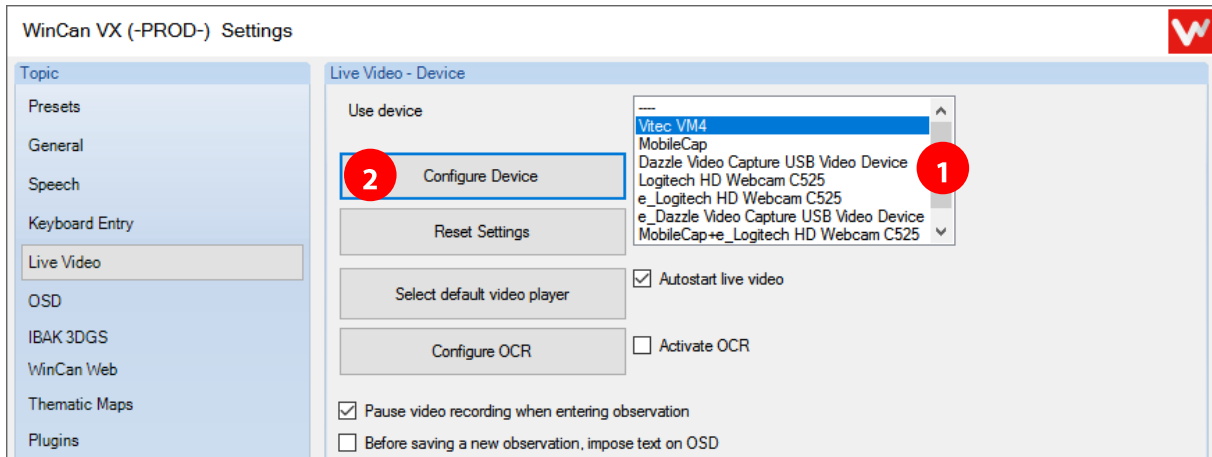


Keyboard shortcuts which are not supported by *Microsoft Windows* cannot be used. It is recommended to use no more than 2 buttons to assign a single function (i.e. Shift + S).

The entries can be deleted with the BACKSPACE key .

## 5.5 Live Video

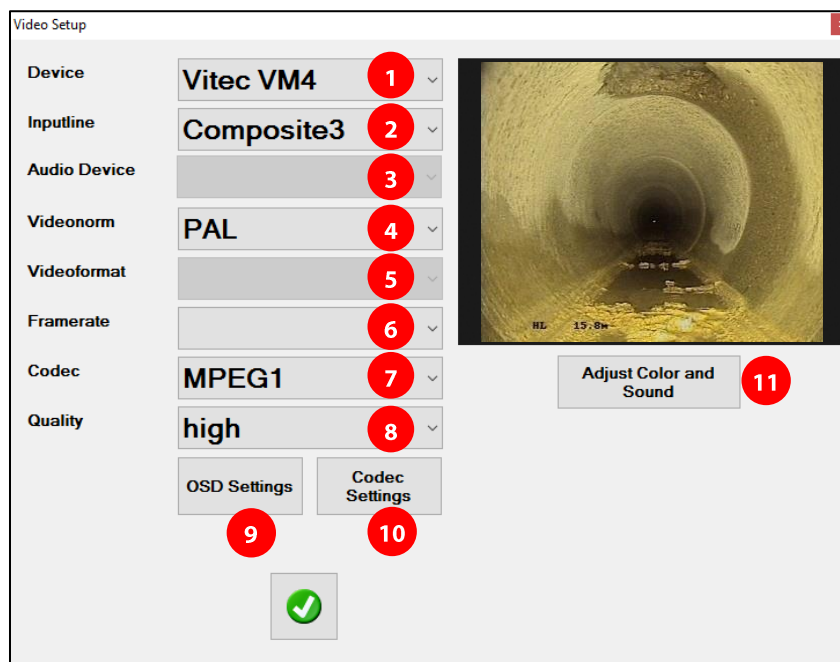
In this area, the video source can be selected and activated. The option *AutoStart Live Video* is going to show the camera image in the video panel of WinCan **automatically** after a project has been opened. If the camera is turned off the video panel will remain black as there isn't any signal to be transmitted.



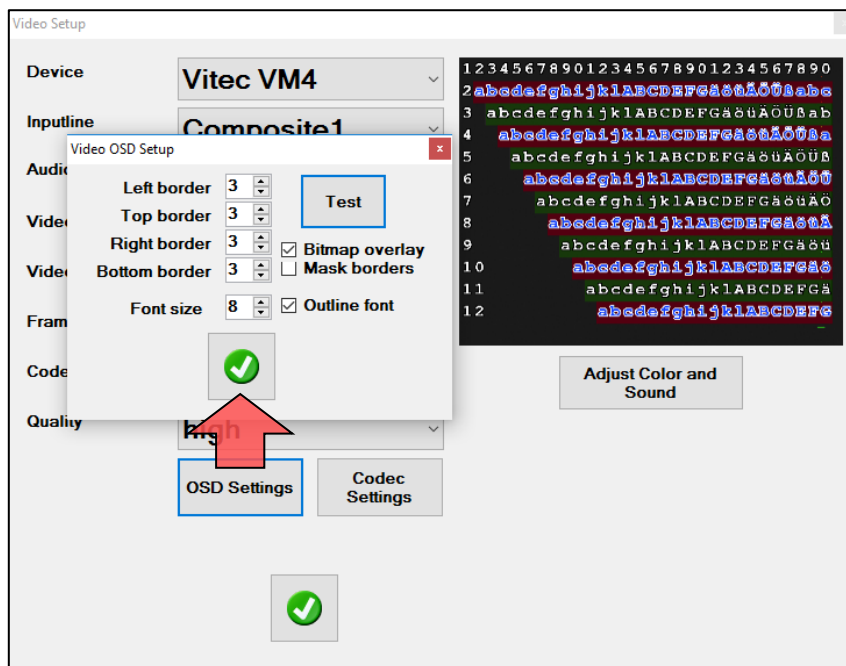
1. Here, any detected video digitizing sources attached to the PC can be selected, and the video feed used for creating survey reports. These devices are most likely to be; a built-in Vitec card, a Sensoray 2253 or a WDM device: (e.g. DFG/USB2pro).



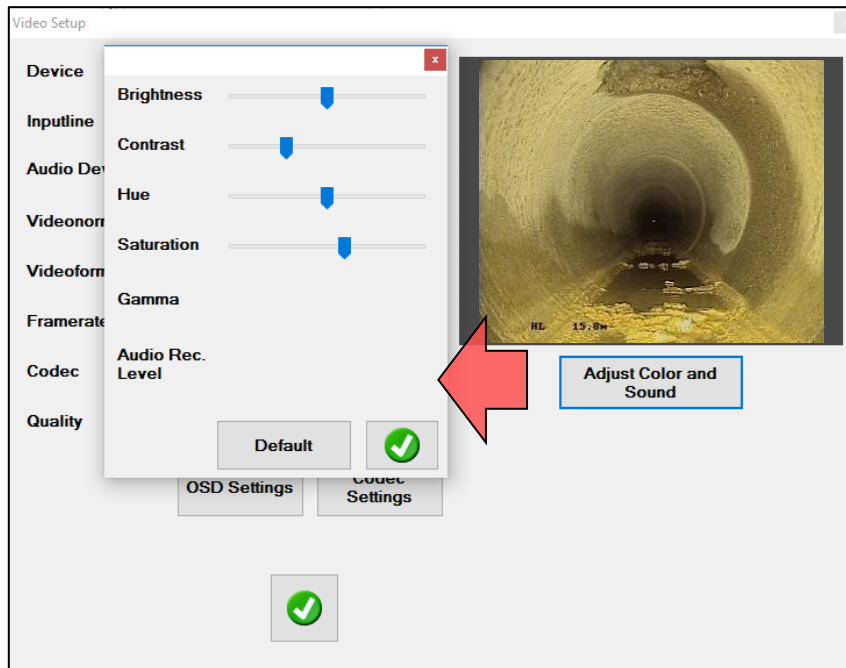
2. With this *Configure Device* option, the video signal source can be configured. The button opens another settings window (Video Setup), which allows settings for the video signal device selected (1).



1. The video digitizing device can be selected here. On the one hand it is plugged to the computer, on the other hand it must be connected to the signal source (TV camera) via a corresponding cable connection. The device used for digitization is always provided together with a specific driver which has to be preinstalled.
2. In the selection box *Inputline*, the channel can be selected. This selection is dependent on the video source.
3. *Audio Device* selection box is used to select any devices used for audio recording during survey work.
4. In the selection box *Videonorm*, the relevant video standard (PAL, NTSC) can be selected. The selection is also dependent on the video source.
5. In the *Videoformat* selection box, the resolution of the video image can be selected, depending on the video signal source.
6. This option sets the *Framerate* for the video recordings, depending on the video source.
7. The *Codec* dropdown lists the formats that the video recordings can be saved in. Also, this depends on the video digitizing source.  
If the signal is passing via a Vitec-board or a MobileCap the user will be able to record clips in the video formats MPEG1, 2 or MPEG4.  
WDM-devices usually get two entries (eg. *USB-WebCam* and *e\_USB-WebCam*): when enabling the the first entry the device is going to produce clips in the format AVI which will use much more disk space than clip recording with the second entry. The latter one allows video storing as MPEG1 files and thus helps require much less disk space.
8. The video quality can be determined in the *Quality* selection box, depending on the video signal source. You can choose between low, medium, high or numbers between 1 and 4. The higher the image quality, the larger the video files will be.
9. The OSD Settings button opens a text layer to adjust text display controlled by the WinCan-Software. The width of the borders can be set in the video OSD Setup menu. Other settings are also available depending on the video signal source. A preview of the selected options in the video image frame can be displayed by clicking the *Test* button. Click the Green OK button last to save all settings:



10. The *Codec Settings* button is either active or inactive depending on the video signal source and codec selection. When typical codecs MPEG1, 2 or 4 format are saved, the codec settings cannot be changed, and the button is inactive.
11. The button *Adjust Color and Sound* is used for tuning picture and sound:



All settings are finally saved with the green tick button. Now the user is back to LiveVideo settings panel which provides three additional buttons (see page 17):

	Restore the basic configuration of the device in case of malfunction
	Open a separate panel to toggle the video player (ElecCard <-> DirectShow) in case of video playback errors.
	Configure <i>Optical Character Recognition</i> in order to read the current distance value directly from the photo and copy it into the distance field.

## 5.6 Textgenerator

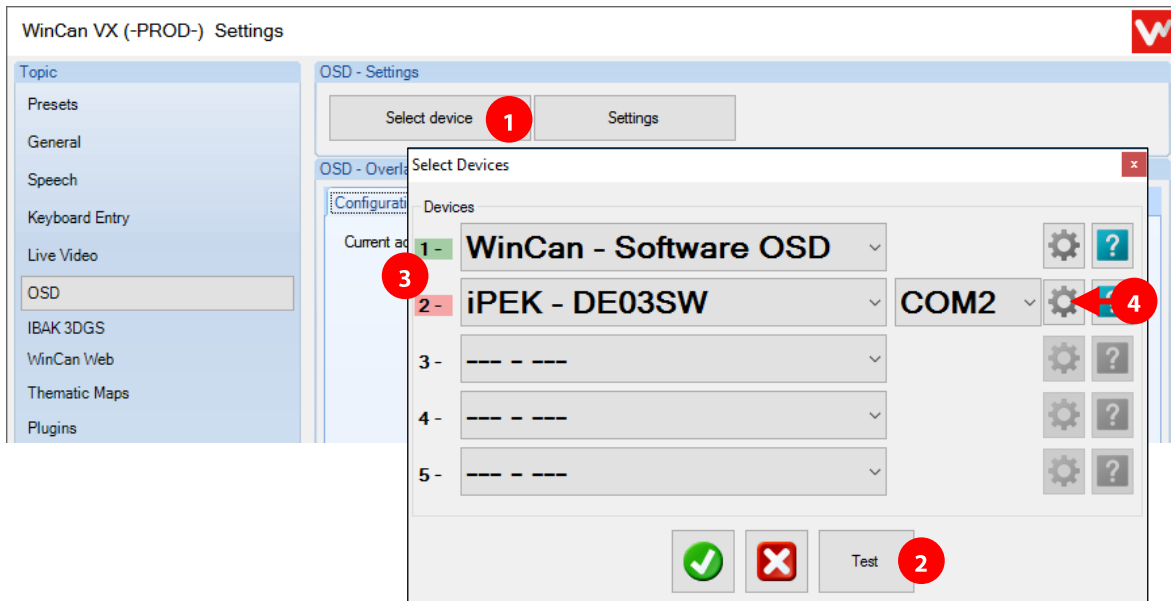
WinCan VX gives you direct control of the text display of any industry-standard On Screen Display (OSD device, text generator), which in turn must be connected via a RS232 interface with a PC/laptop. Data entered in WinCan as well as device specific parameters (i.e. OSD objects like distance, date, time, inclination, temperature etc.) can thus be displayed in a separate text layer and be recorded together with the video clip.

The connection between PC and text generator is usually via the RS232 communications cable supplied by the manufacturer of the device.



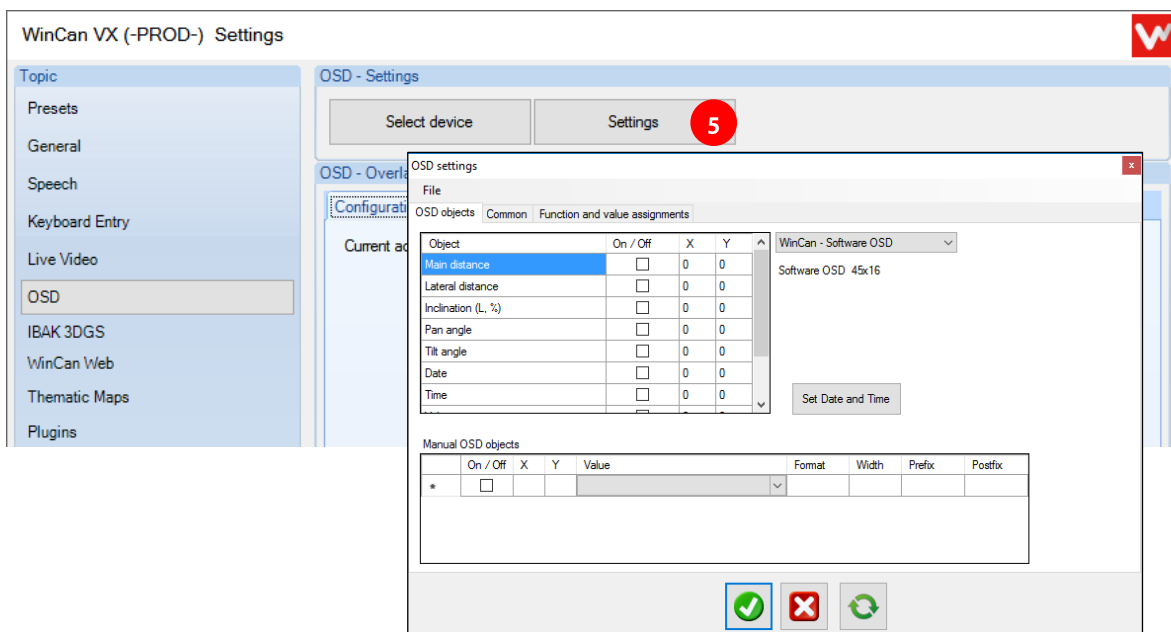
If a computer-side RS232 connection port is unavailable, you must connect the text generator via a USB-serial adapter and an available USB port on the computer. Such adapters are available together with the corresponding drivers via the PC trade.

The basic settings for the control of various OSD devices from the software WinCan VX are located in the general program settings as described in the previous section. Hit the command *Home > Settings* and jump to the category *OSD*:



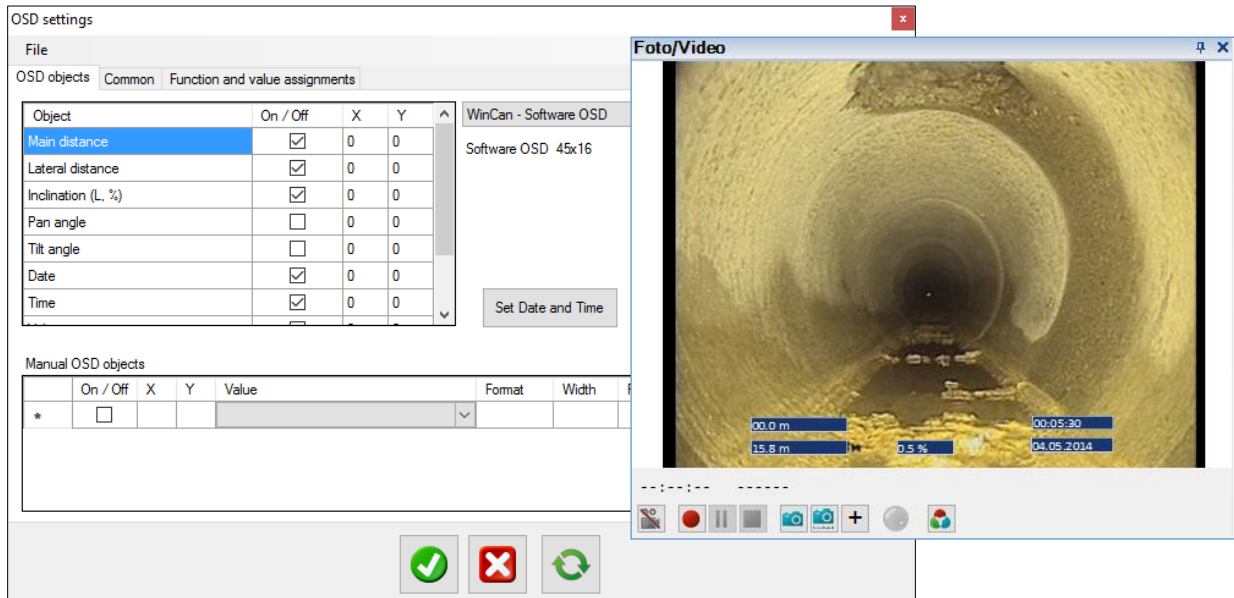
1. Push the button *Select Device* to open the list of all supported by WinCan VX text generators (data single panel unit). Up to 5 devices can be operated at the same time. Always assign the correct **ComPort** to each device.
2. Clicking on the *test* button checks the connection between the text generator and your computer.
3. Successful communication between the devices will light the corresponding number up red or green.
4. Device-specific functions can accessed be by clicking on the gear button.

The *Settings* button (5) allows you to custom configure the text display.



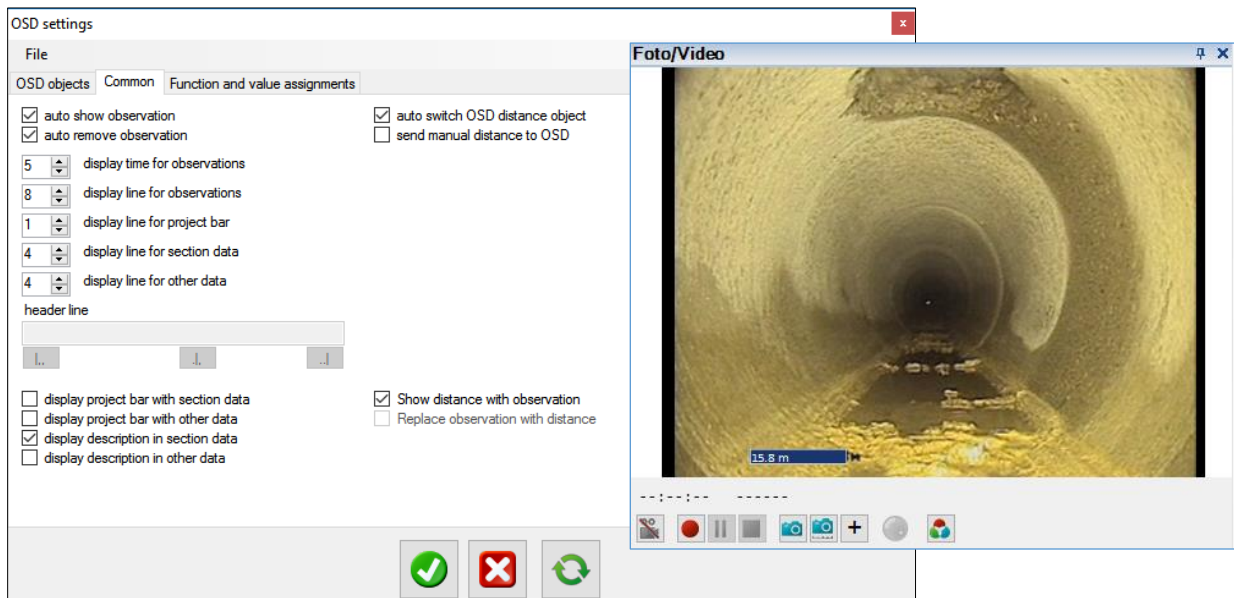
The register of *OSD Objects* in the following dialog window allows the insertion of values provided by device-side built-in parameters (OSD-Objects) and positioning them on the video screen with the help of a virtual XY-matrix (X = horizontal alignment, Y = vertical alignment).

To the right of the list of all OSD objects is the text line on/off as well as the number of characters (e.g.  $X_{\max} = 50$ ) and rows (e.g.  $Y_{\max} = 17$ ), so the parameter on the video image can be moved. You may also use negative values in the column Y (e.g.  $Y = -1$ ) to make sure the corresponding object parameter is always shown at the lowermost line regardless of the number of lines supported by the OSD device.



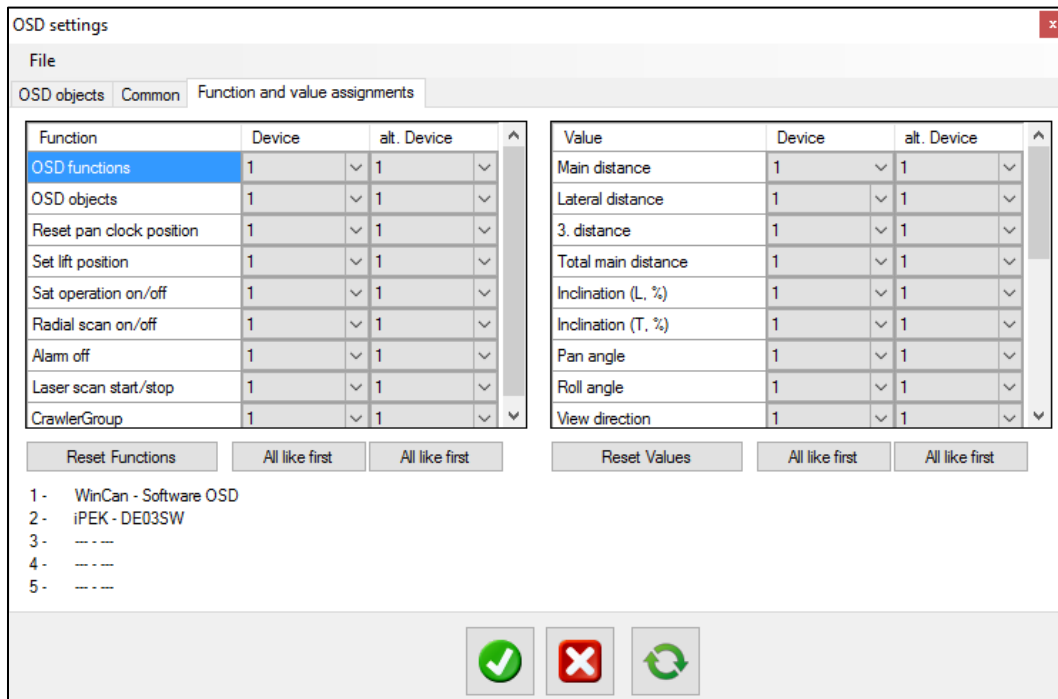
At the bottom of the default OSD settings, the user can create himself manual (user-defined) OSD objects.

The *Common* tab allows you to configure the pop-up behavior of project bar, section data and observation text during surveys. Here the number is entered simply as lines, which positions the text from the upper edge of the video window.



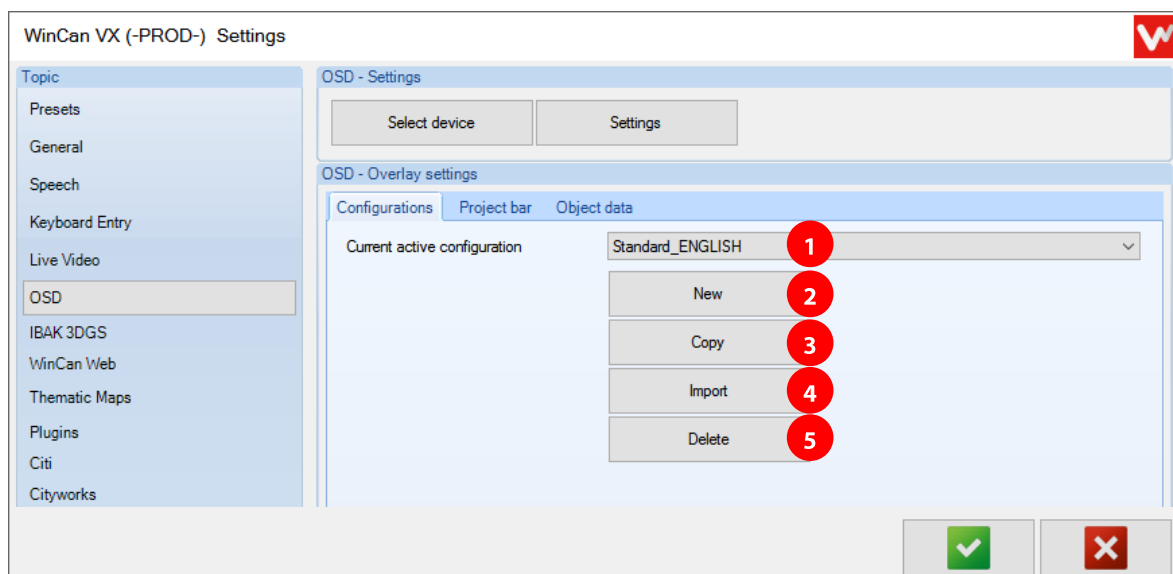
In the above example, the observation text duration during surveying is 5 seconds, 8 lines below the upper edge of the video:

The tab *Function and Value Assignments* regulates the communication between multiple text generators:



Should you have to connect multiple text generators, individual pop-up profiles can be set for each device. Each profile contains all information about displaying OSD-Objects which – in certain cases - can only be obtained by one or another specific device. WinCan VX supports simultaneous communication with up to 5 devices.

The specification of the content of project bar and section data is done via the corresponding tabs. WinCan VX has a default configuration of text to be displayed in the photo/video window, under the name *Standard\_ENGLISH* (1).



2. A blank *New* configuration can be stored under a new name of the user's choice. Note that during a rebuild of the configuration you must make sure to select the correct corresponding database field!

WinCan VX (-PROD-) Settings

OSD - Settings

Select device Settings

OSD - Overlay settings

Configurations Project bar Object data

Section Lateral Node

Line	Field1	Field2	Fiel	Field	Field	Field	Field	Field	Field	Align
1	OBJ_City	OBJ_Street								<--
2	OBJ_FromNode_REF.OBJ_K	OBJ_ToNode_REF.OBJ_K								<--
3	OBJ_Profile	OBJ_Material								<--
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

☐ Show start node->end node

Additional observation field ☐

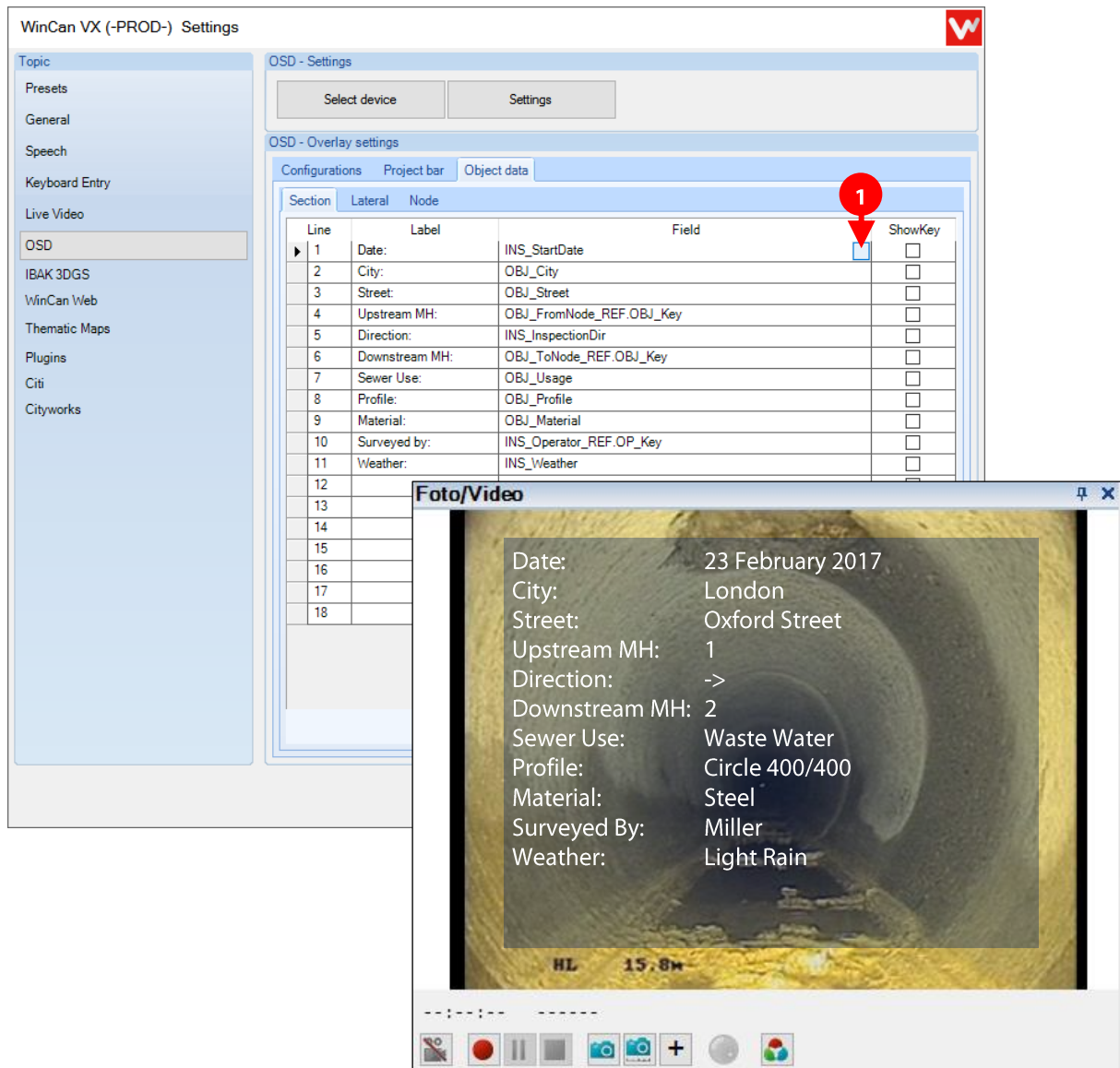
Foto/Video

London, Oxford Street  
MH01 -> MH02  
Circle 450/450 Concrete

15,8 m

The tick box (2) below the table allows the user to have the Start and End nodes displayed either according to the flow or to the inspection direction.

The **section data** including all the basic information about the current section of the pipe is called using the corresponding button in the OSD panel at the beginning of the inspection. WinCan VX provides 18 rows for section data output:



WinCan VX (-PROD-) Settings

OSD - Settings

Select device Settings

OSD - Overlay settings

Configurations Project bar Object data

Section Lateral Node

Line	Label	Field	ShowKey
1	Date:	INS_StartDate	<input type="checkbox"/>
2	City:	OBJ_City	<input type="checkbox"/>
3	Street:	OBJ_Street	<input type="checkbox"/>
4	Upstream MH:	OBJ_FromNode_REF.OBJ_Key	<input type="checkbox"/>
5	Direction:	INS_InspectionDir	<input type="checkbox"/>
6	Downstream MH:	OBJ_ToNode_REF.OBJ_Key	<input type="checkbox"/>
7	Sewer Use:	OBJ_Usage	<input type="checkbox"/>
8	Profile:	OBJ_Profile	<input type="checkbox"/>
9	Material:	OBJ_Material	<input type="checkbox"/>
10	Surveyed by:	INS_Operator_REF.OP_Key	<input type="checkbox"/>
11	Weather:	INS_Weather	<input type="checkbox"/>
12			
13			
14			
15			
16			
17			
18			

Foto/Video

Date: 23 February 2017  
City: London  
Street: Oxford Street  
Upstream MH: 1  
Direction: ->  
Downstream MH: 2  
Sewer Use: Waste Water  
Profile: Circle 400/400  
Material: Steel  
Surveyed By: Miller  
Weather: Light Rain

HL 15.8m

Click into the third column of the table (1) to select the database fields whose contents should be displayed in the section data.

All settings and adjustments to the data display will be finally confirmed via the green OK-button:



## 5.7 WinCan Web

WinCan Web is a separate software interface that allows end users (e.g. engineer offices, water authorities etc.) to access WinCanVX projects via internet.

You can setup and administer a WinCan Web account from here. You can also do everything included in this section via your web browser at <https://web.wincan.com/>

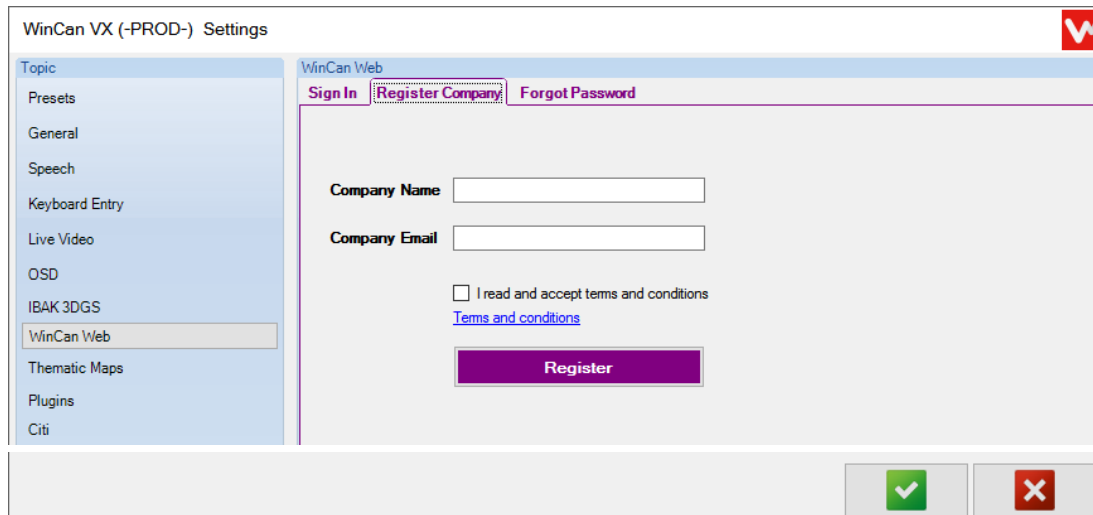
The *Sign In* tab allows you to sign into your WinCan Web account with your username and password, and also offers options to automatically sign in when you launch WinCan VX, and for the computer to remember your password.

Once you have logged into your account, there are 5 tabs containing settings that you can use to manage your online account and project delivery:

<b>User Profile</b>	Here you can set your own user details including name, job title, phone numbers, email address and user photo etc.
<b>User Settings</b>	In this tab you can adjust the settings for language, date, time and currency formats used within the WinCan Web environment.
<b>Company Profile</b>	This is where you can store and edit your company profile details including address, phone numbers, email addresses and logos.
<b>Management</b>	In this area you can invite people to become users and viewers of your online WinCan Web data. They will need to setup their own user accounts before they can view anything contained in WinCan Web, and there are 4 account types that can be assigned to users that you invite – End User, VX Operator, Company Operator and Company Administrator.
<b>Account</b>	Here you can view your data storage plan, amount of storage space used and the costs associated with different options.

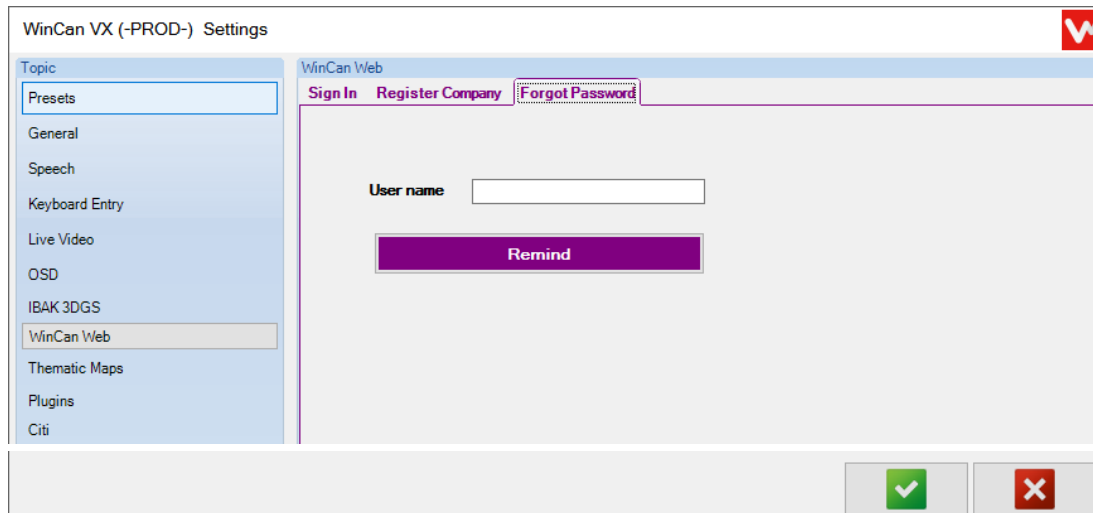
It is worth noting that WinCan Web is a wholly interactive service with your clients, and that it regularly sends out automated e-mails to your users whenever there are changes made to projects that have been assigned to them. These e-mails can be configured and branded to your own requirements by using the User and Company Profile tabs above, so a little time spent here getting this correct is time well spent.

Hit the tab *Register company* to setup a new WinCan Web account:



The screenshot shows the 'WinCan VX (-PROD-) Settings' window with the 'WinCan Web' sub-tab selected. The 'Register Company' tab is active, displaying a registration form. The form includes input fields for 'Company Name' and 'Company Email', a checkbox for 'I read and accept terms and conditions' with a link to 'Terms and conditions', and a purple 'Register' button. The left sidebar lists various settings topics, with 'WinCan Web' highlighted. The bottom of the window features a status bar with a green checkmark and a red 'X' button.

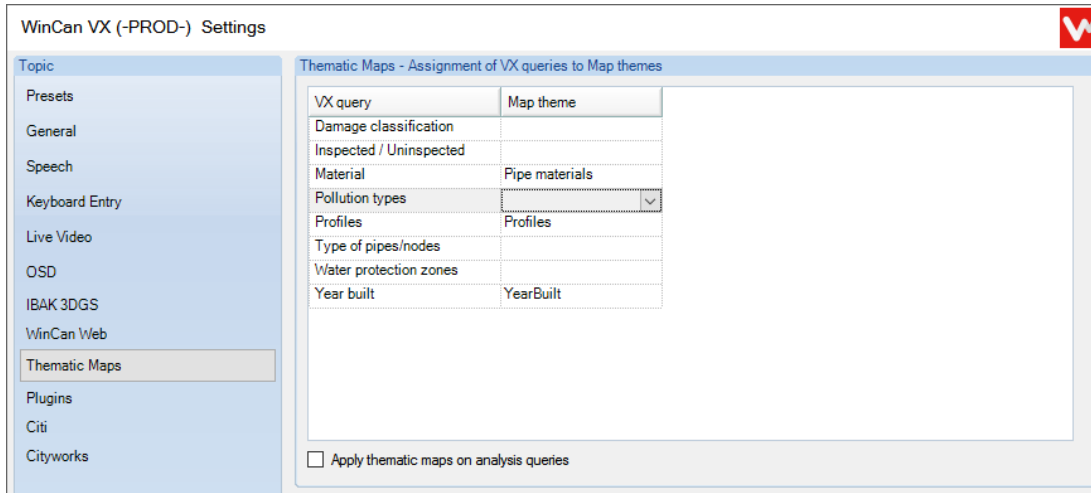
This tab allows you to submit your account username (your e-mail address) if you have forgotten your password and the system will respond with reset options:



The screenshot shows the same 'WinCan VX (-PROD-) Settings' window, but with the 'Forgot Password' tab selected. The form now contains a single input field for 'User name' and a purple 'Remind' button. The 'WinCan Web' sub-tab remains selected in the sidebar, and the status bar at the bottom is consistent with the previous image.

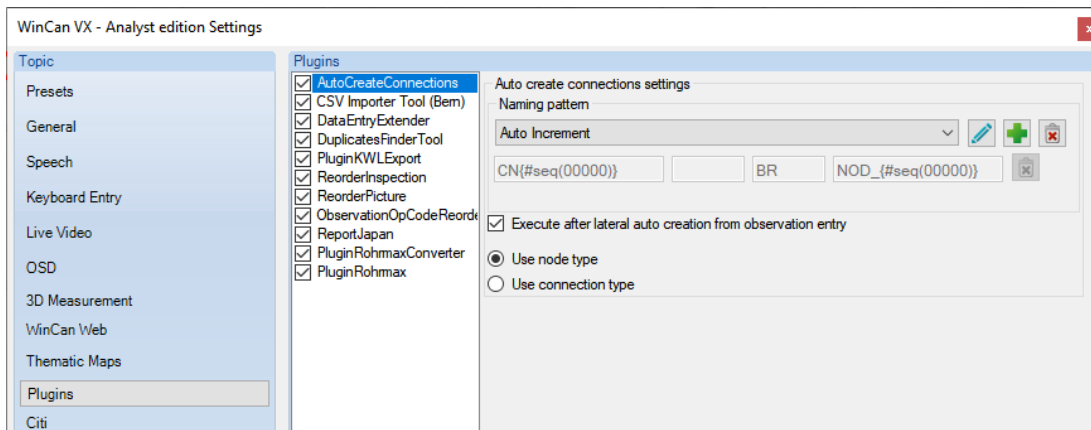
## 5.8 Thematic Maps

The settings used within this category are linking WinCan VX queries defined in the module *Statistics and Analysis* with the module *Map-VX*. The topic related representation in Map-VX thus is going to be adapted to the WinCan VX query (i.e. different pipe diameters, pipe materials, water protection zones, damage grades etc.).



## 5.9 Plug-Ins

Within this category, related plugins can be enabled or disabled at the disposal. These Plug-Ins imply custom or country specific program implementations, which are not part of any of the standard software packages.



## 5.10 Citi

In this menu, projects can be made to connect to the Citi software. The server name must be *localhost*. Choose the *Root directory for Citi projects*. It should be noted that projects can only be imported!

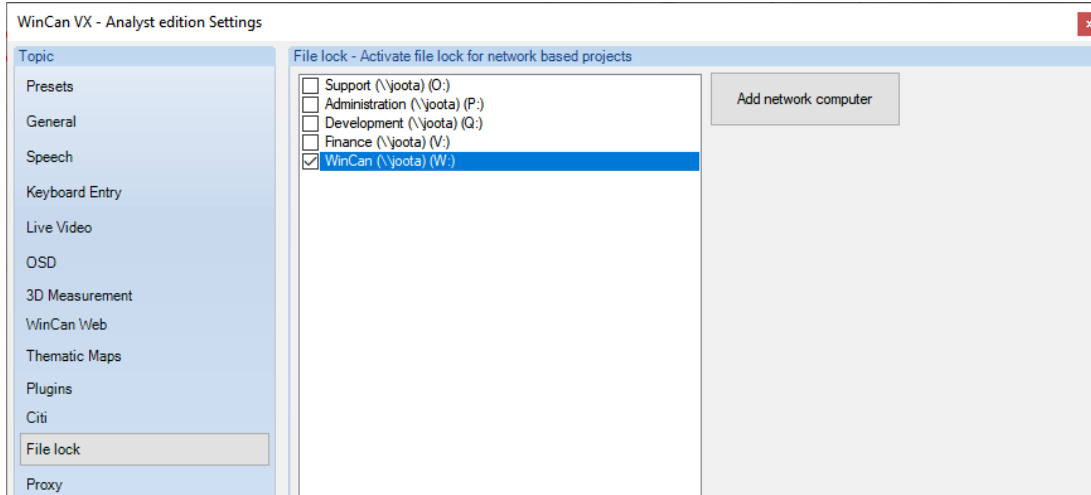
Remark:

This category is only important for **German customers** that have purchased WinCan VX and want to import existing projects created with the Citi software.

### 5.11 File Lock

When enabling the file lock for the server drive the projects are located on, WinCan is going to create a temporary copy of the project database on your local hard drive.

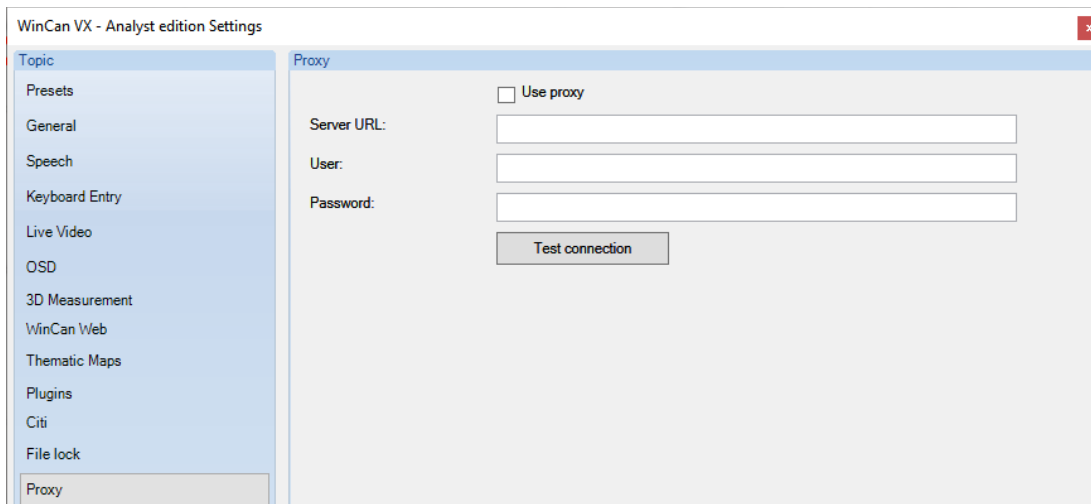
This will speed up the access to the data to be edited and prevent other users to access the project you are actually working on: a corresponding warning message will then pop up on their screen.



As soon as you close the project other users within the network environment can open it again and edit the data on their work station.

### 5.12 Proxy

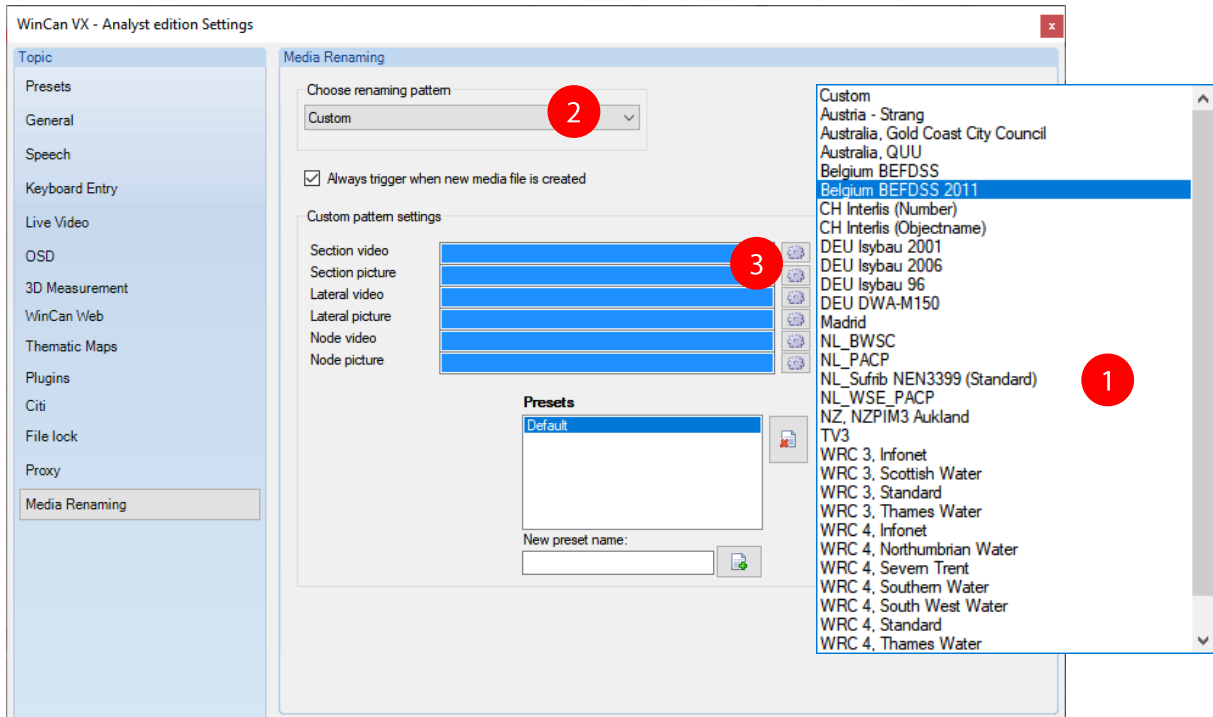
Set the IP-address, username and password for the proxy server to run an automated data transfer from vehicles to the file server located in the office. The proxy settings can be activated or deactivated at any time:



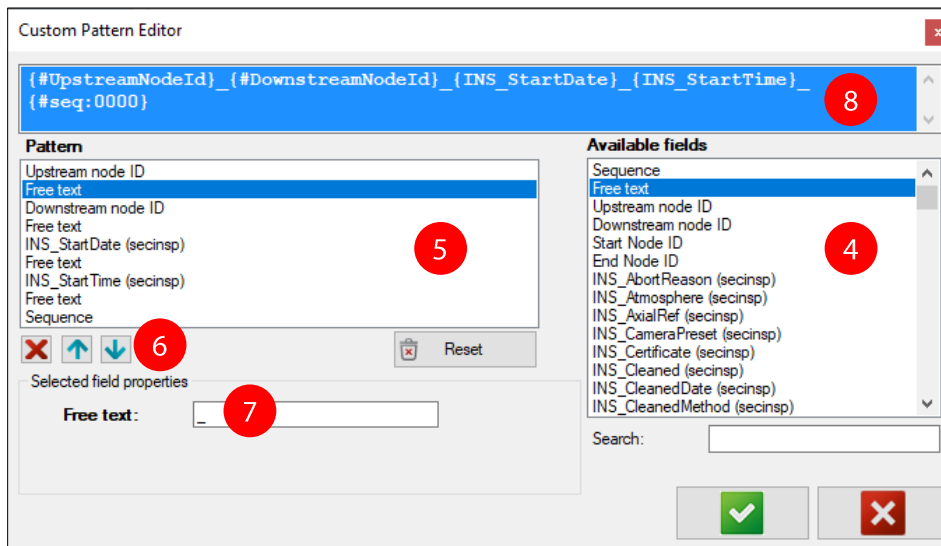
## 5.13 Renaming media files

This category shows all official and country specific templates for setting of video and photo file names that WinCanVX currently provides.

Pick a predefined template (1) from the list box or select the entry *Custom* (2) and hit the corresponding gear icon (3) to create your own media renaming template for photos and video clips that are linked to sections, laterals or manholes:



The customization dialogue then opens and allows you to freely combine the contents of the selected database fields:

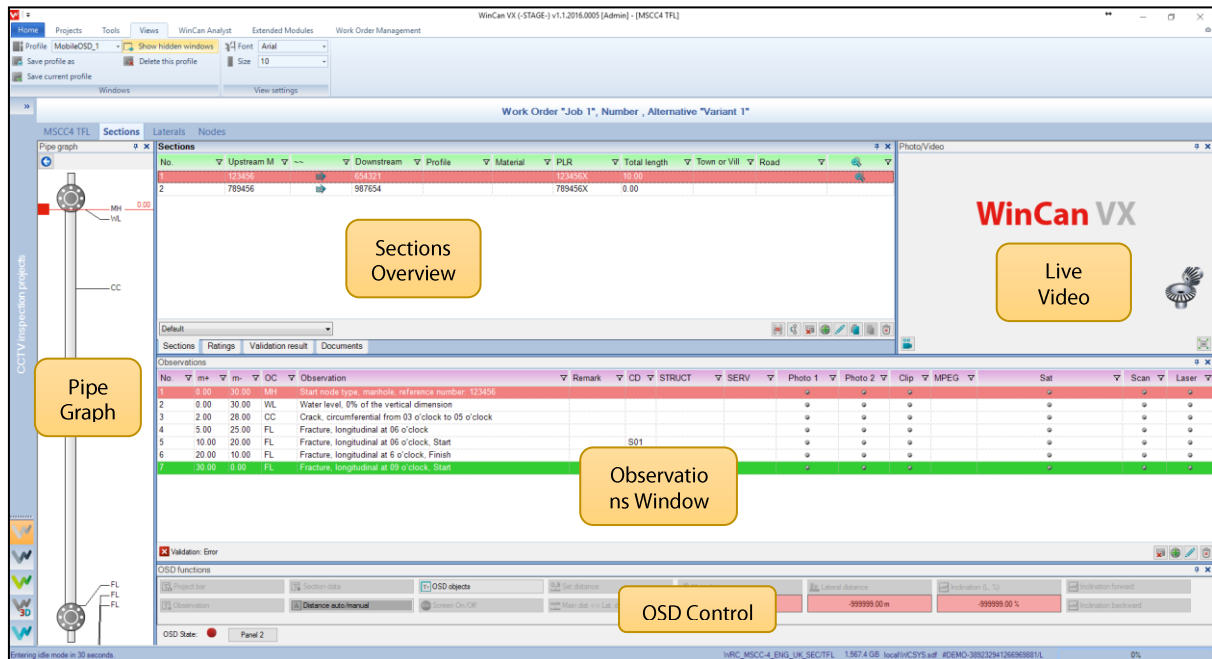


Double-click on the desired field (4) whose content should become a part of the media file name. The field is then moved to the list box at the left side (5). Hit the arrow buttons (6) to change the field order and add FreeText fields (7) to the renaming pattern in order to improve the readability of the future file name.

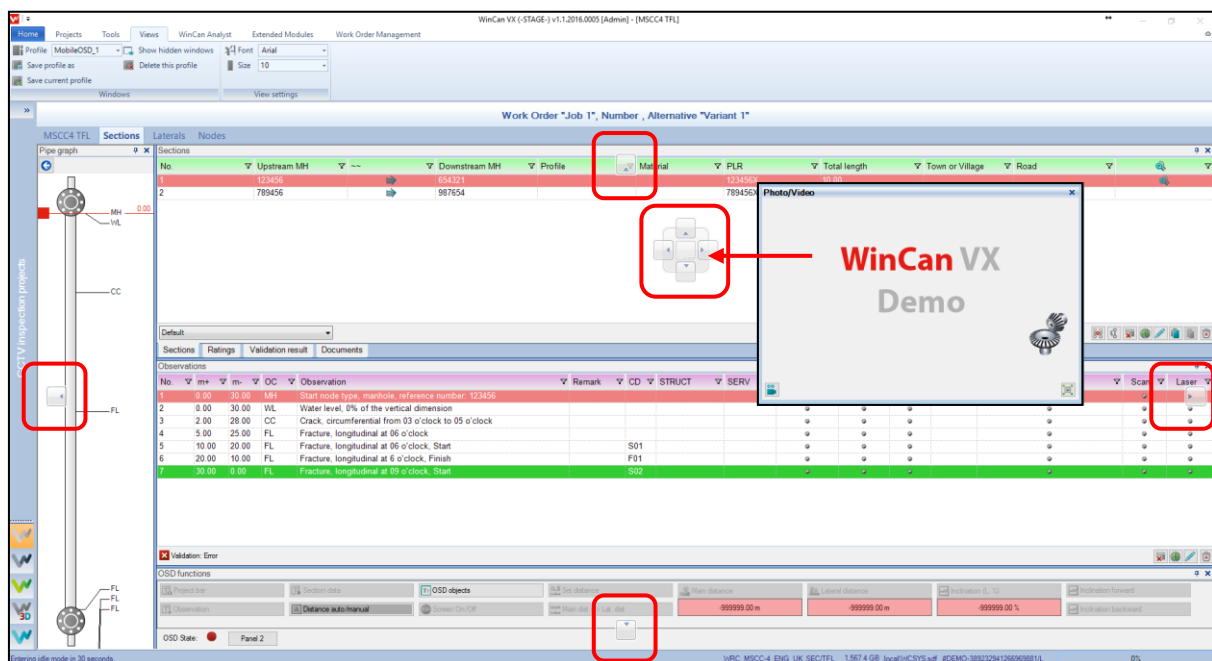
Once the settings are done you can just apply the new field combination (8) to the existing or future photos/video clips linked the corresponding objects (i.e. section, lateral or manhole) hitting the command *Edit > Media Renaming*.

## 6 WinCanVX Main Screen

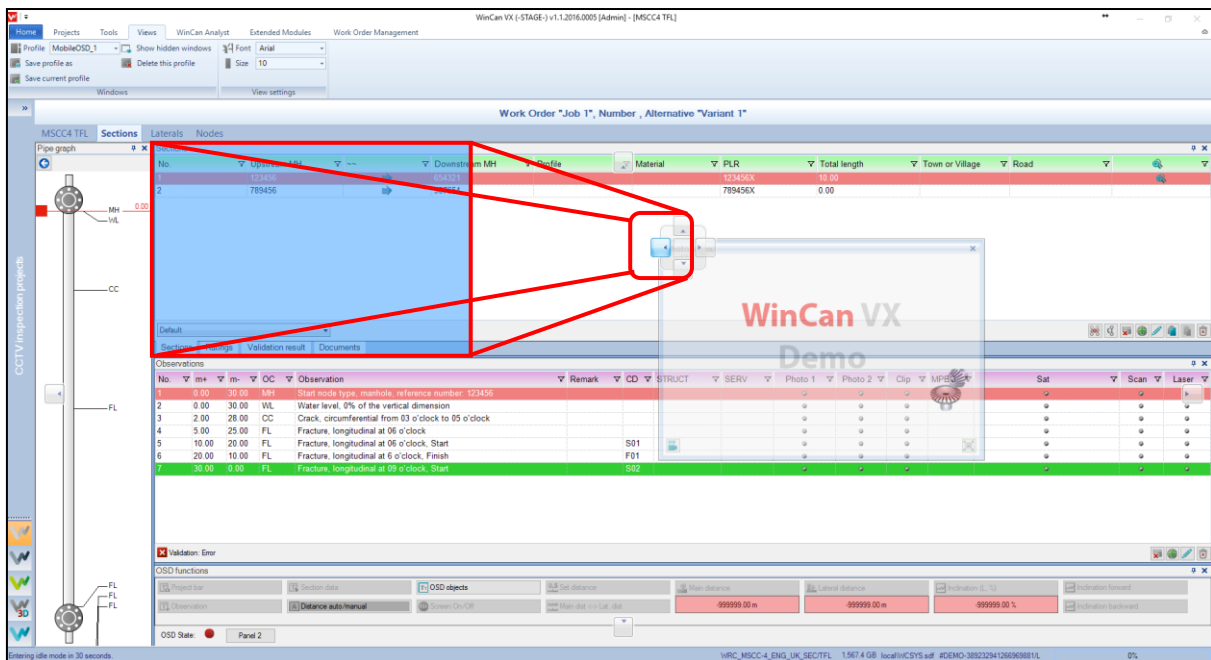
Unlike in previous versions WinCan VX is providing a main interface split into **different working panels** that can all be moved freely or individually hidden and thus rearranged on one or several screens. A built-in **positioning wizard** always selects that spot on the screen where you actually move the preferred panel keeping the left mouse key pressed:



In addition the title bars of each working panel have got two small command buttons at the right edge that allow the user to either close or just hide and unhide the corresponding panel.



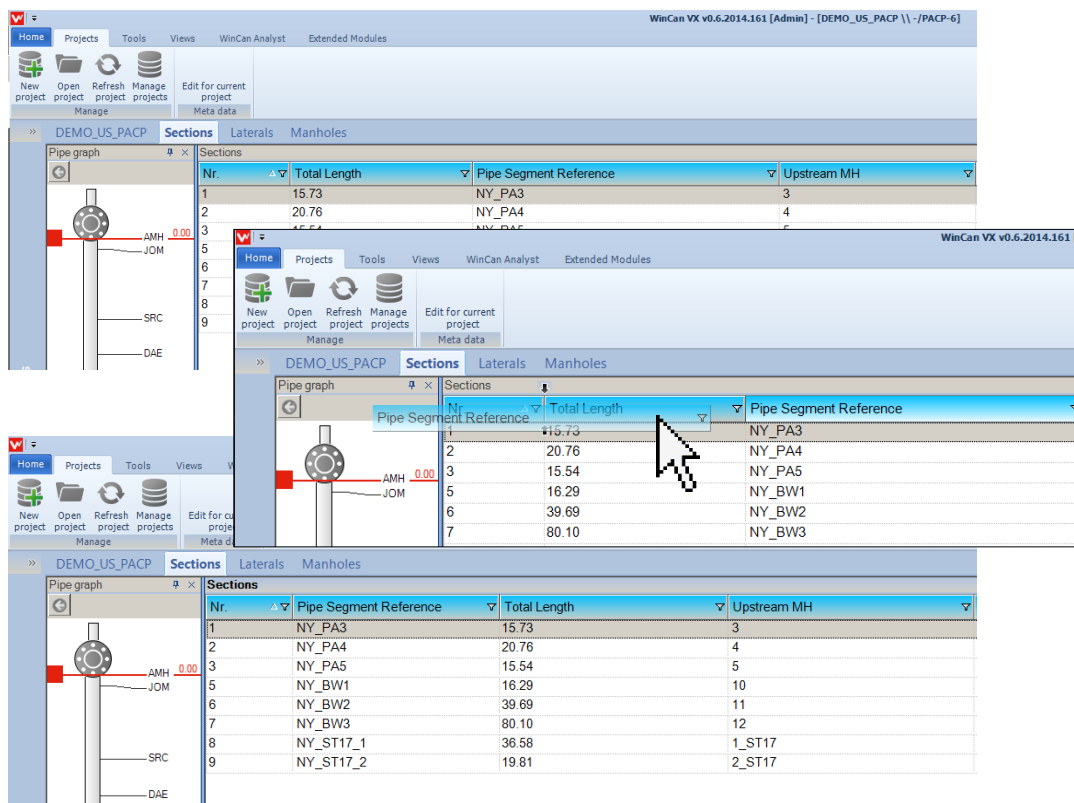
The positioning wizard indicates with flashing up arrow buttons and a blue target surface where the floating window would be positioned if the mouse pointer was released at that location:



Of course, it is also possible to place any of the panels on a second screen and resize to suit. This new layout can then be saved as a profile.

Once you have rearranged the panels according to your personal needs for the acquisition of main and lateral sections (satellites) or manholes this individual view (profile) can easily be saved for further WinCanVX sessions via the tab Views. Of course the main interface (group of panels) as well as each single panel can be maximized to full screen size.

A single column within the section and observation panel can be DIRECTLY moved to another location too keeping the left mouse key pressed. Automatically displayed position arrows indicate that the column is set in the new location as soon as you release the mouse key:

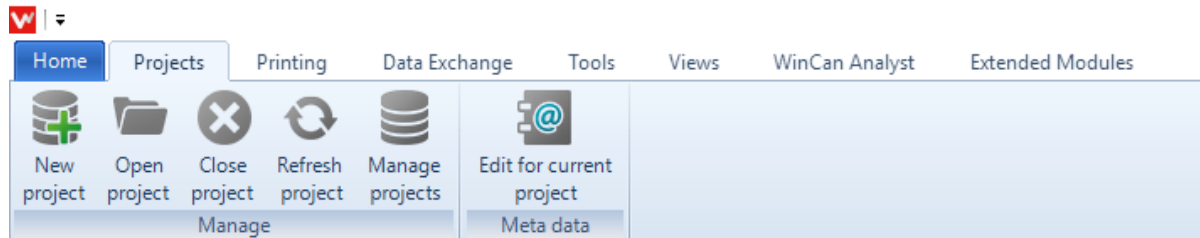


Remark:

Rearrangement of columns as well as modification of column width currently **cannot** be saved as a part of the user profile.

## 6.1 Ribbon bar

The ribbon bar of WinCan VX is sub-divided into several command groups. Simply hit the corresponding tab and select the icon to run the desired command or functionality:

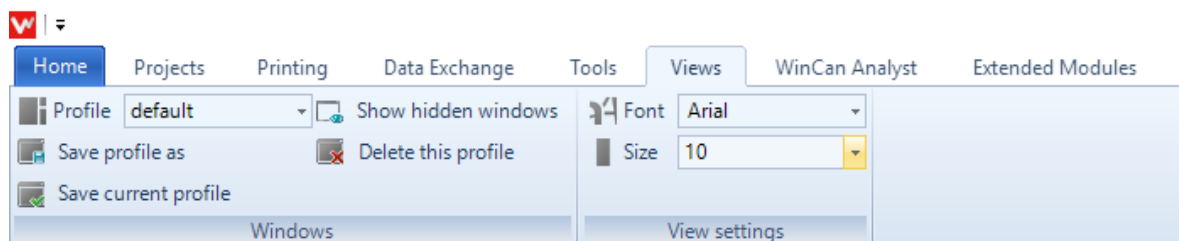


Find below a brief description of the most important command groups:

- **Home:** this ribbon tab includes general program settings as well as functionalities for the management of users, directories, licenses, templates etc.
- **Projects:** this ribbon tab gives the user all the possibilities to create, edit and manage projects data as well as the global META database (address data, equipment data).
- **Printing:** Functions for printing control. Inspection data can either be printed directly as a default inspection report or as a table based summary created via a specific query (Reportgenerator).
- **Data Exchange:** Functions for data import and export. WinCanVX is able to read data provided in a specific format (XML, TXT etc.) and file structure and on the other hand to save inspection data into a specific file format (XML, TXT etc.).
- **Tools:** Functionalities for input, processing and output of the current project data.
- **Views:** Definition of a specific panel layout, font and text size to be displayed on the main screen.
- **WinCan Analyst:** this ribbon tab gives access to scoring and report analysis tools which are used for detailed survey data evaluation.
- **Extended Modules:** In this ribbon tab, you will find access to many additional and 3<sup>rd</sup> party applications that support and harmonize with WinCan VX, including WinCan Draw, WinCan 3D, WinCan Map as well as the most important laser measurement control tools.

## 6.2 Views

This ribbon tab controls which window elements are visible or hidden, and which font/size to display the text in. With the available commands the user can determine the panel arrangements in the main screen itself and store the settings for future use:

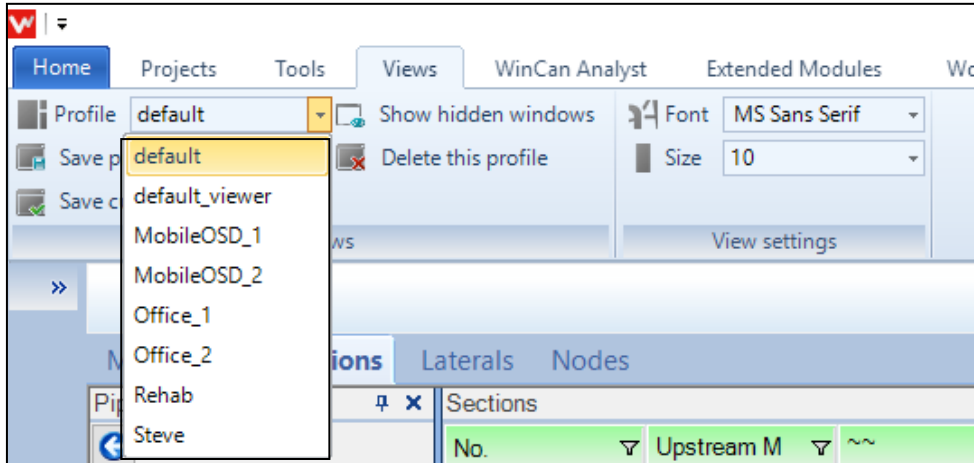


The area *View Settings* in the menu bar allows the user to change the font and the font size throughout the WinCan VX user interface windows. Changing the settings here does not affect the fonts and font sizes used in the printed reports.

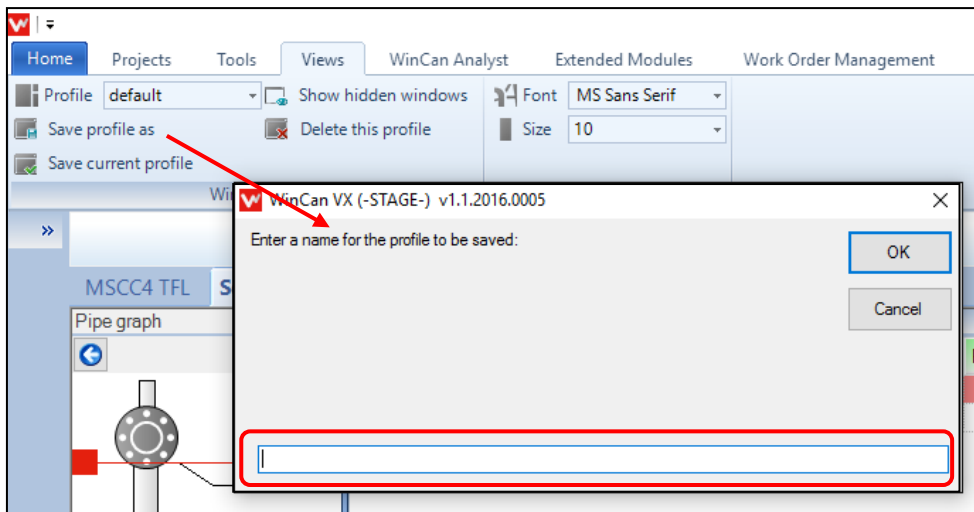
Besides the individual views each user has got several **pre-defined** views per default among which the following three examples are described:

- *(default)*: Standard view with OSD bar displayed for operators in TV vehicles.
- *default\_office*: Standard view without visible OSD bar for users applying WinCan VX in the office.
- *default\_viewer*: Standard view without visible OSD bar for end customers who are able to run WinCan VX in the viewing mode only.

In case the panel layout has been too heavily "messed-up" or some important panels are even hidden the default layout can quickly be restored selecting the profile *default*:

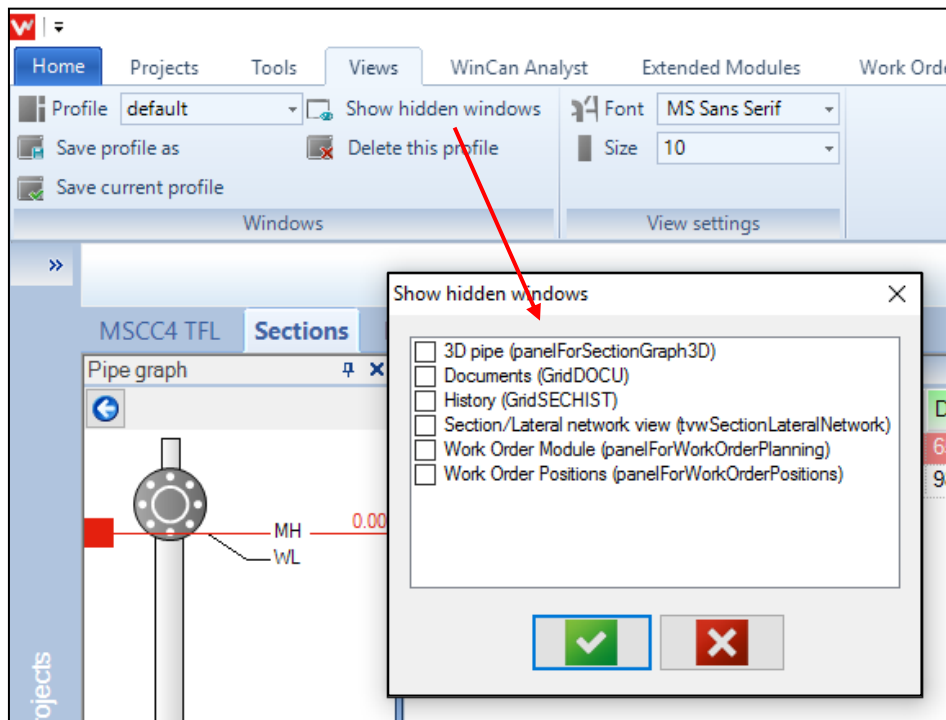


The command *Save Profile As* allows the user to store the current window layout under its own name and thus update it. The command opens a window where the layout name can be entered:



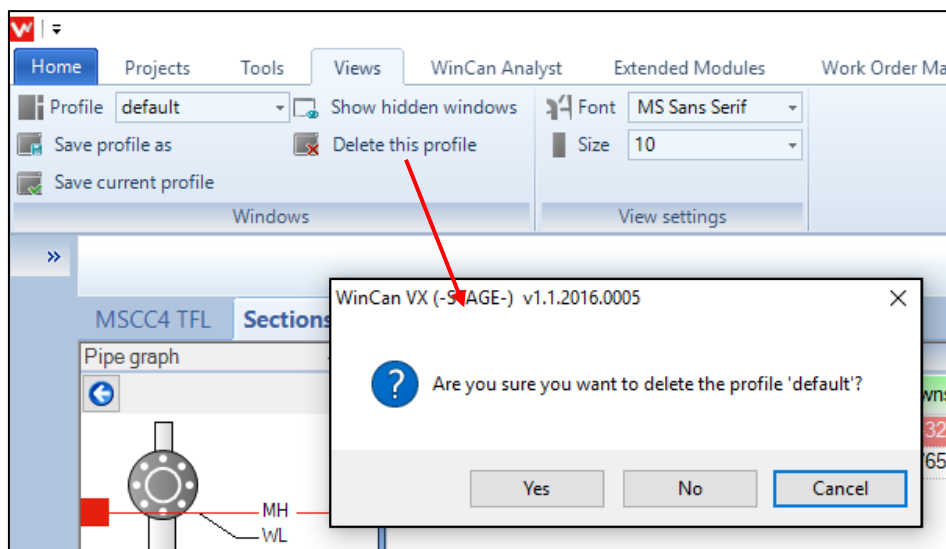
In case you enter a new layout name it will then be in the drop-down list *Profile* for future reference.

With the command *Show Hidden Windows*, the user has the option to see which windows are currently not visible, so they can choose to display and position any of these on the screen as required.



Any window that you want to appear must be activated with a tick in the box and complete the choices with the Green OK button.

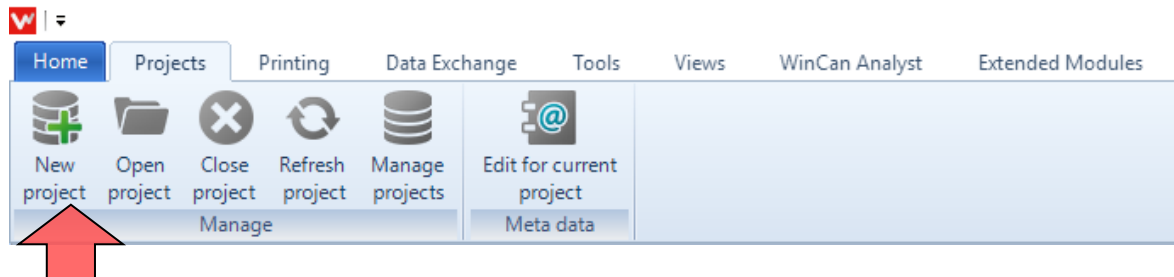
The command *delete this profile* deletes current profile in the layout list:



Deleting a stored window layout must be confirmed every time. Should the user accidentally call the command, there is no option to go back or cancel.

## 7 Project Management

Immediately after launching WinCan VX an empty main screen appears and the tab *Projects* is opened automatically:



### Note on Creating New Projects:

Once you have clicked the Finish button and confirmed the basic project settings' you won't be able to change them in the future. So, always make sure that you use the RIGHT template and catalogue for the current project BEFORE you start the inspection job.

### 7.1 Creating New Projects

Click on the icon *New Project* in the Projects ribbon to create a new project with the Project Wizard:

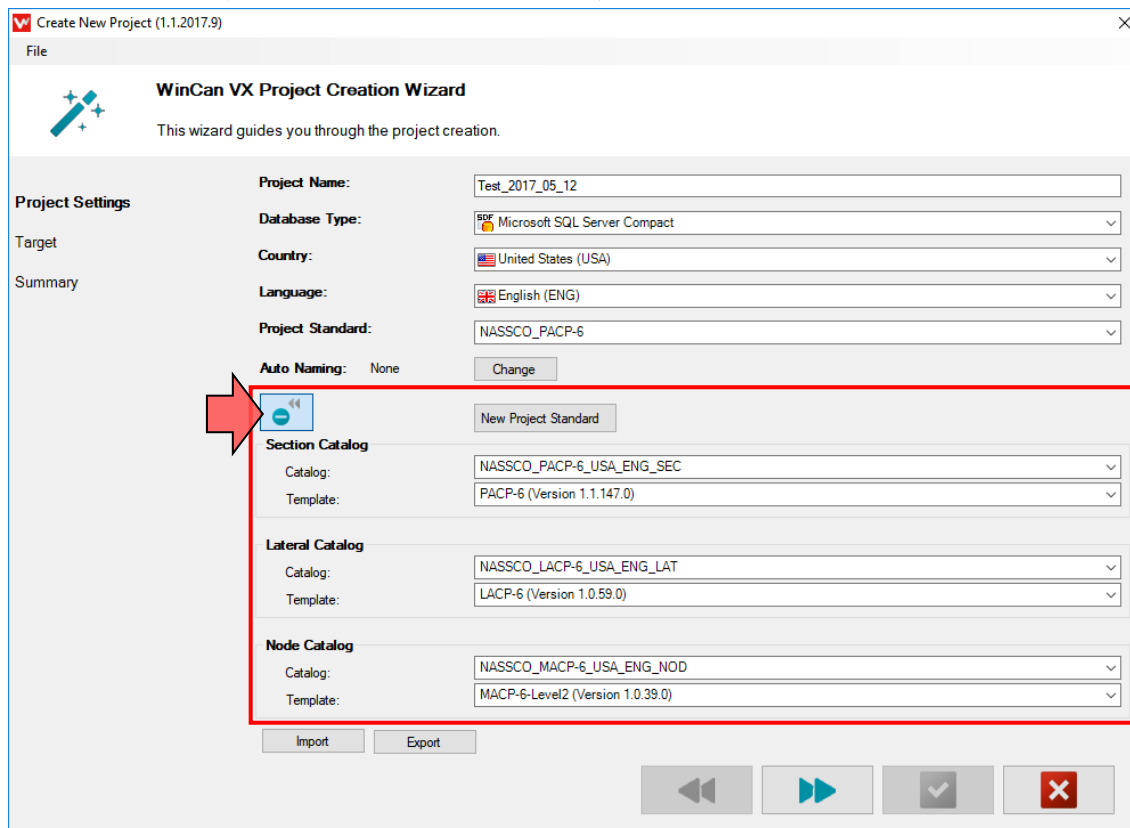
Enter the name for the project (1) and WinCan automatically enters the date in the format year-month-day. This name can be extended or overwritten.

Then, select the database type (2). By default, this is always the local database of the user's computer (*Microsoft SQL Server Compact*) and should only be modified by expert or network users.

The Country and Language settings (3) will follow the default regional settings as applied to the host computer. Under normal circumstances, there will be no need to alter these settings.

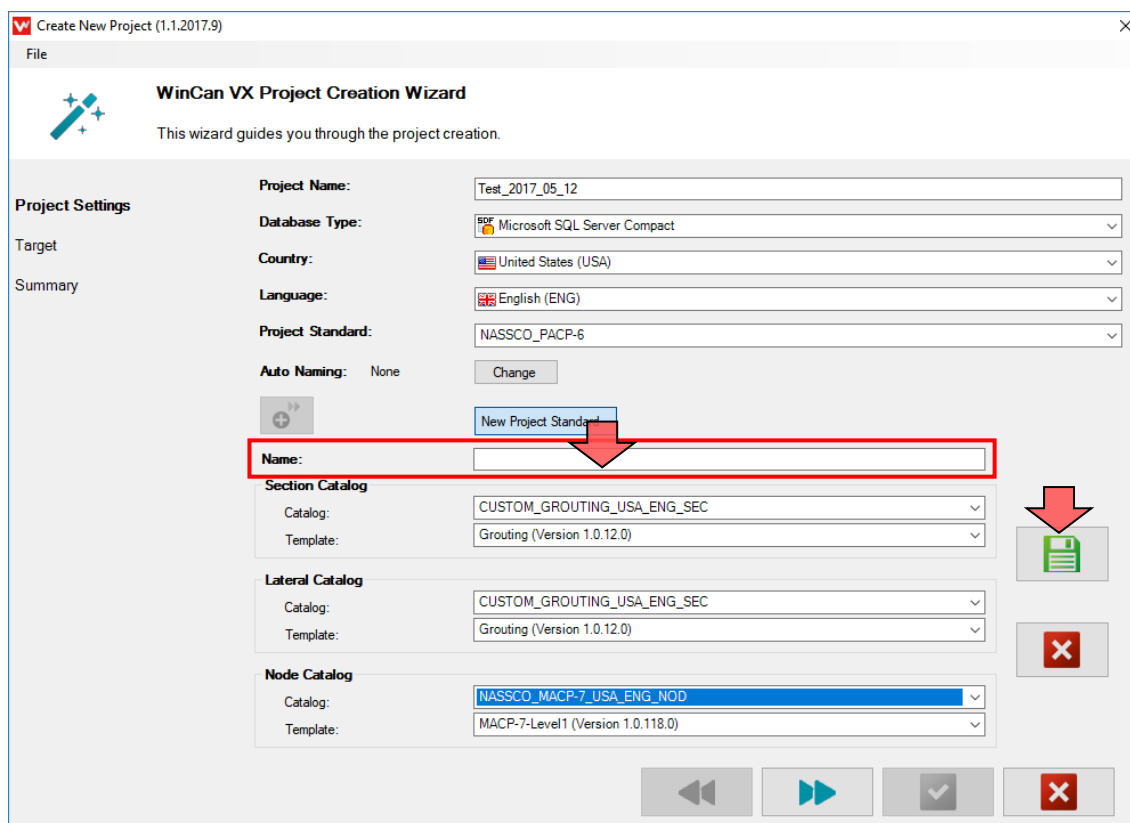
In the *Project standard* settings (4), the desired project template can be selected. Only the standards available to the Country/Language in the previous options will be listed.

The button *More Options* opens the advanced project setup menu which allows you to further define the templates for your project. This is particularly useful for clients who have specific requirements.



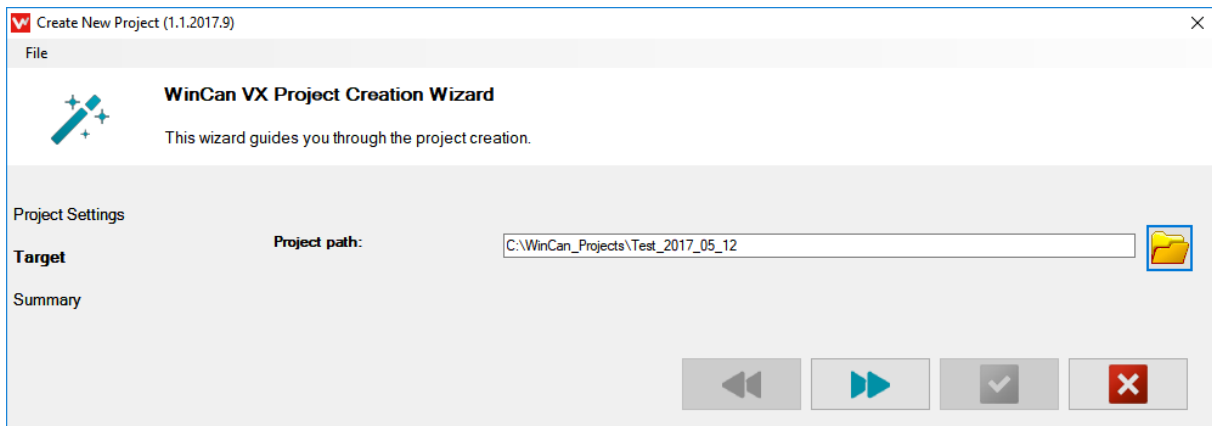
The screenshot shows the 'WinCan VX Project Creation Wizard' window. The 'Project Settings' tab is active. The 'Project Name' is 'Test\_2017\_05\_12'. The 'Database Type' is 'Microsoft SQL Server Compact'. The 'Country' is 'United States (USA)'. The 'Language' is 'English (ENG)'. The 'Project Standard' is 'NASSCO\_PACP-6'. The 'Auto Naming' is set to 'None'. A red arrow points to the 'New Project Standard' button. Below this button, there are three sections: 'Section Catalog', 'Lateral Catalog', and 'Node Catalog'. Each section has a 'Catalog' and a 'Template' dropdown menu. The 'Section Catalog' has 'NASSCO\_PACP-6\_USA\_ENG\_SEC' and 'PACP-6 (Version 1.1.147.0)'. The 'Lateral Catalog' has 'NASSCO\_LACP-6\_USA\_ENG\_LAT' and 'LACP-6 (Version 1.0.59.0)'. The 'Node Catalog' has 'NASSCO\_MACP-6\_USA\_ENG\_NOD' and 'MACP-6-Level2 (Version 1.0.39.0)'. At the bottom, there are 'Import' and 'Export' buttons, and a set of navigation buttons (back, forward, cancel, and a red X button).


The *New Project Standard* button allows the user to save their own predefined option in the Project Standard drop down list by setting the required templates, catalogues and giving the standard a name:



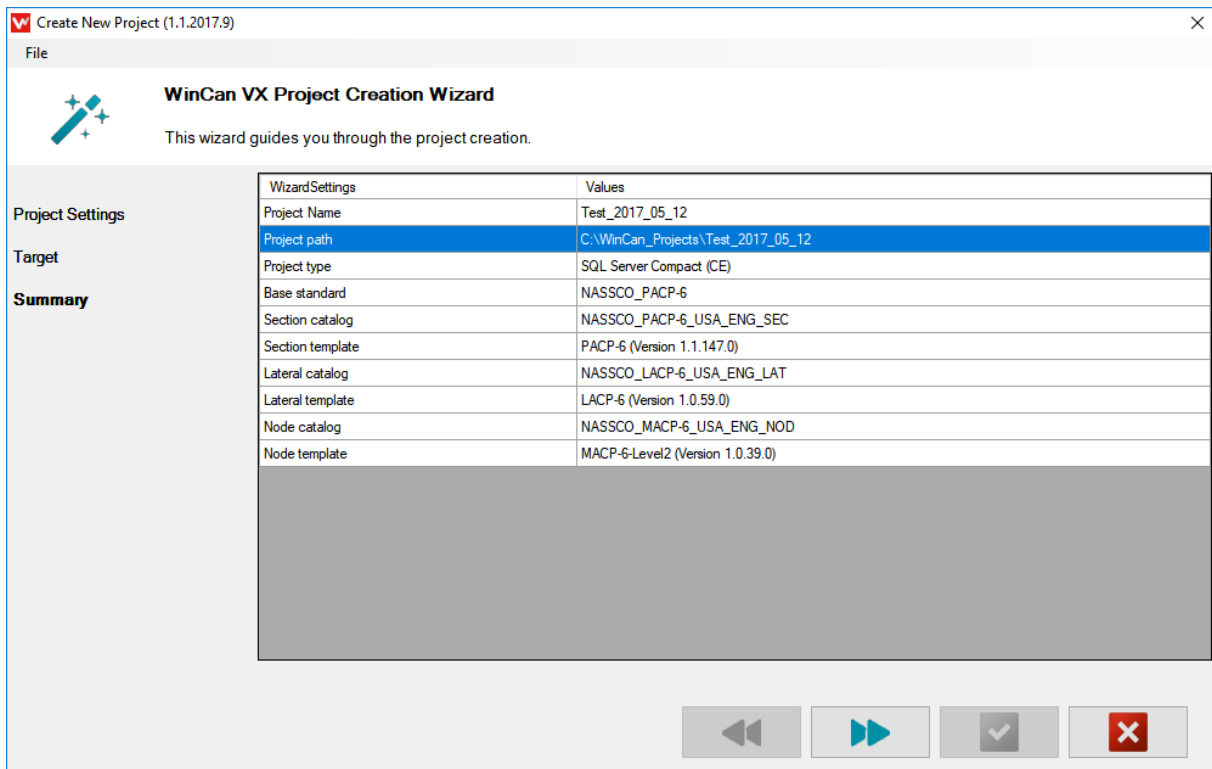
The screenshot shows the 'WinCan VX Project Creation Wizard' window with the 'New Project Standard' button highlighted. A red arrow points to the 'Name:' text box. Below the 'Name:' text box, there are three sections: 'Section Catalog', 'Lateral Catalog', and 'Node Catalog'. Each section has a 'Catalog' and a 'Template' dropdown menu. The 'Section Catalog' has 'CUSTOM\_GROUTING\_USA\_ENG\_SEC' and 'Grouting (Version 1.0.12.0)'. The 'Lateral Catalog' has 'CUSTOM\_GROUTING\_USA\_ENG\_SEC' and 'Grouting (Version 1.0.12.0)'. The 'Node Catalog' has 'NASSCO\_MACP-7\_USA\_ENG\_NOD' and 'MACP-7-Level1 (Version 1.0.118.0)'. A red arrow points to the 'New Project Standard' button. At the bottom, there are navigation buttons (back, forward, cancel, and a red X button).

The *Next* button leads to the next step in the Project Wizard, which is where you can accept or alter the project save location.

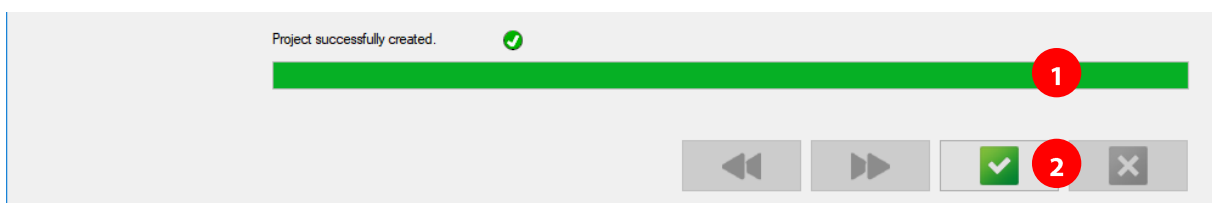


The default save location as defined in *Home > Settings* will be declared in the save location. You can change this by clicking the folder icon  and selecting a different location.

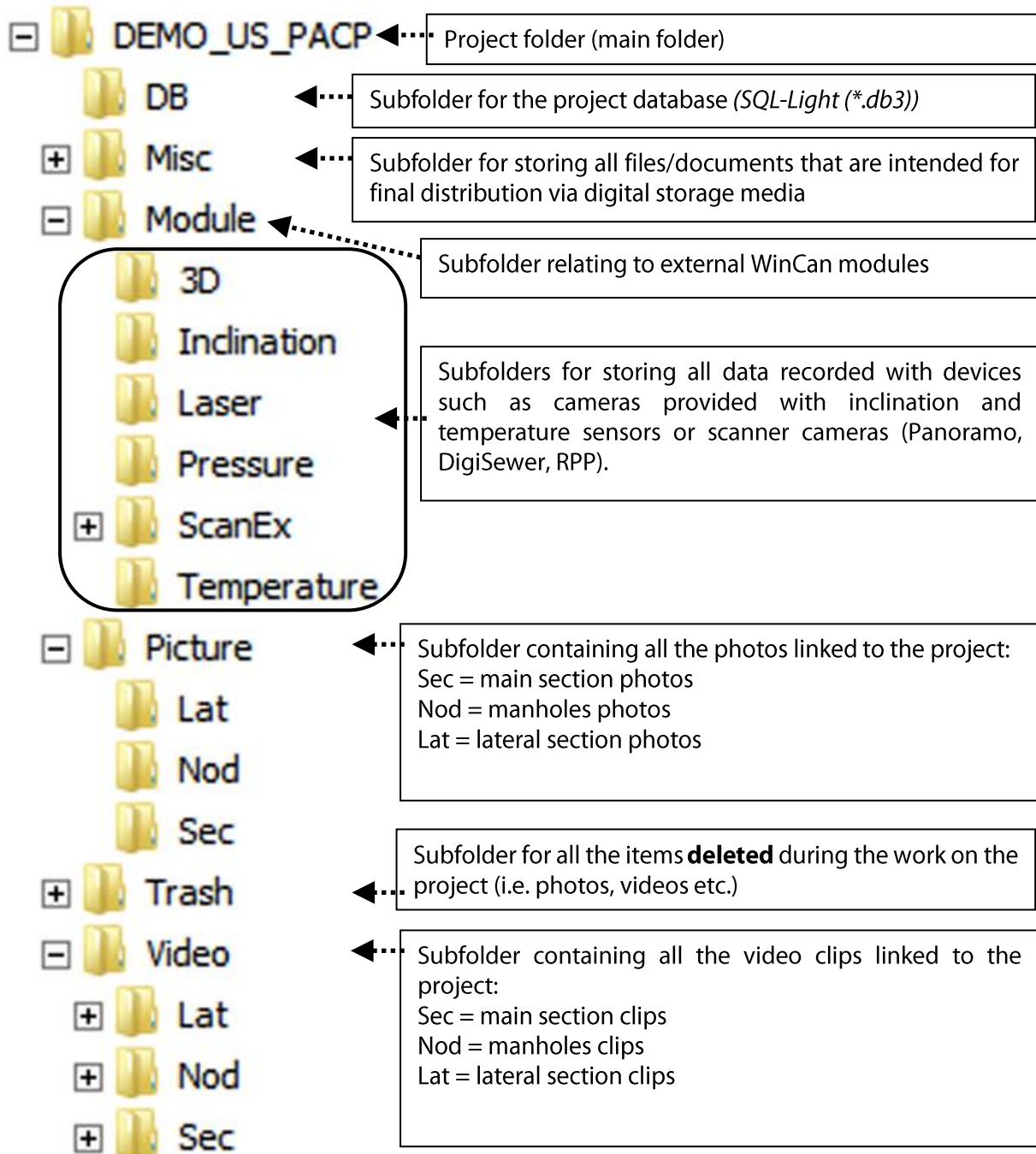
Click *Next* again to see a final summary of your settings. If you are unhappy with any of these, now is the time to go back and make adjustments.



Click *Next* one more time and wait for the green bar (1) to complete, showing you that the project folder has been successfully created, and hit the green button (2) to close this stage of the Project Wizard.



WinCan VX automatically creates a project with a given structure in the destination folder C:\WinCan\_Projects or in the folder defined in the settings. The basic folder structure and the most important **subfolders** of a WinCan project are described below:

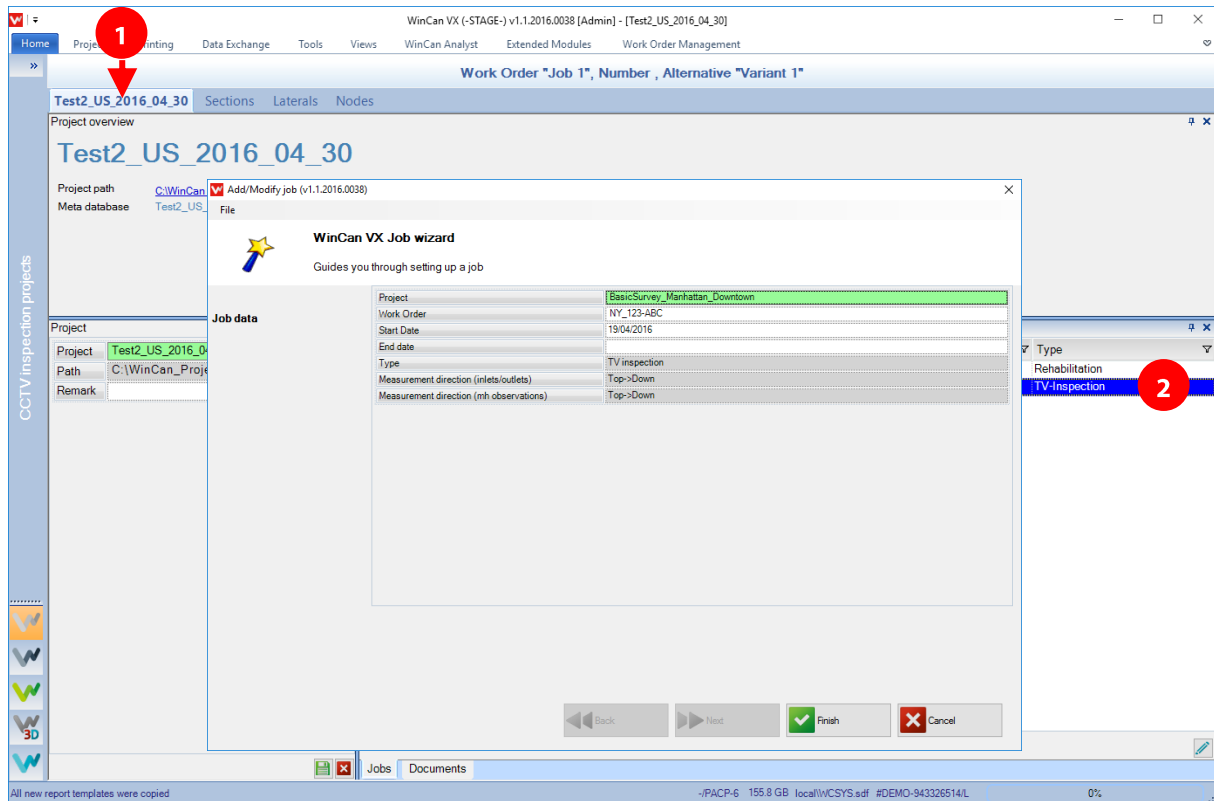


The project folder can be called up at any time by clicking on the project header tab of the WinCan VX main screen and selecting the *Project Path* link.

In general, it is recommended to split the drive into 2 partitions: drive C:\ (approx. 100 GByte) is reserved for the installation of operating system and application software (e.g. WinCan VX) and drive D:\ (or E:\) for storing the WinCan projects.

### 7.1.1 Creating a Job

Following the project folder structure and database creation, the Job Wizard is launched, where you can enter project header data like project description, project type, work order, start and end date etc. This dialog box can also be called up at any time by double-clicking the required survey line (2) in the *Project Header* tab (1):



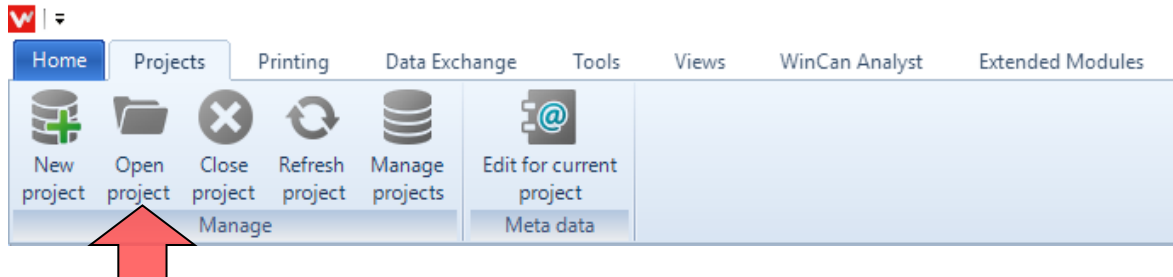
When all the details are completed, click on the green tick to save and close the Job Wizard (Job Editor).

#### Note on jobs:

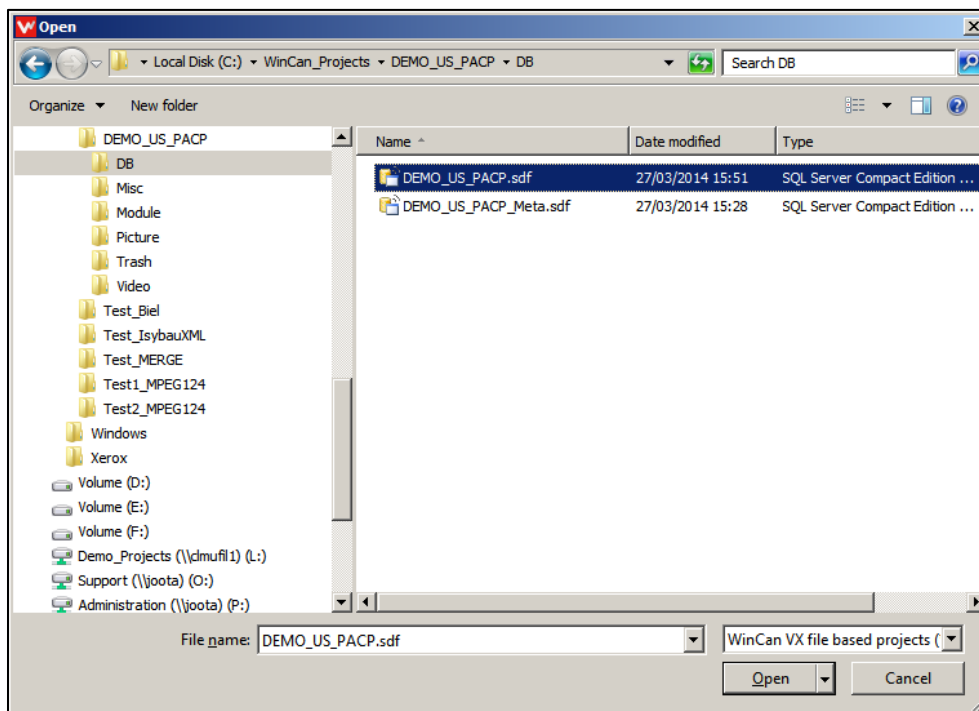
A WinCanVX project can be subdivided into several jobs, which must be defined in the project header. In most cases however, a project consists on just one job.

## 7.2 Importing Existing Projects

An existing project can only be opened in WinCan VX if the corresponding language and country standard have been installed and the relevant license slots are enabled on the dongle. Start WinCan VX, open the tab *Projects* in the main screen and hit the button *Open project*:



In the dialog box that opens, use Windows to navigate to the location of your project folder. Double click on the subfolder DB and highlight the project database (.sdf file).



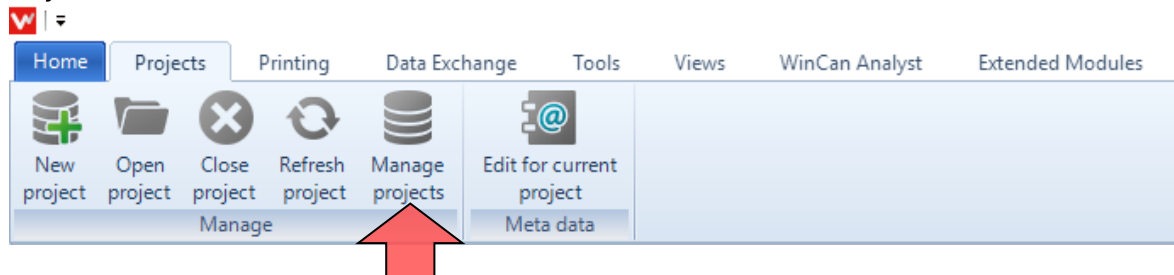
Finally click the *Open* button to add the project to the list displayed in the left column of the WinCan VX main screen.

### Note on .sdf Files:

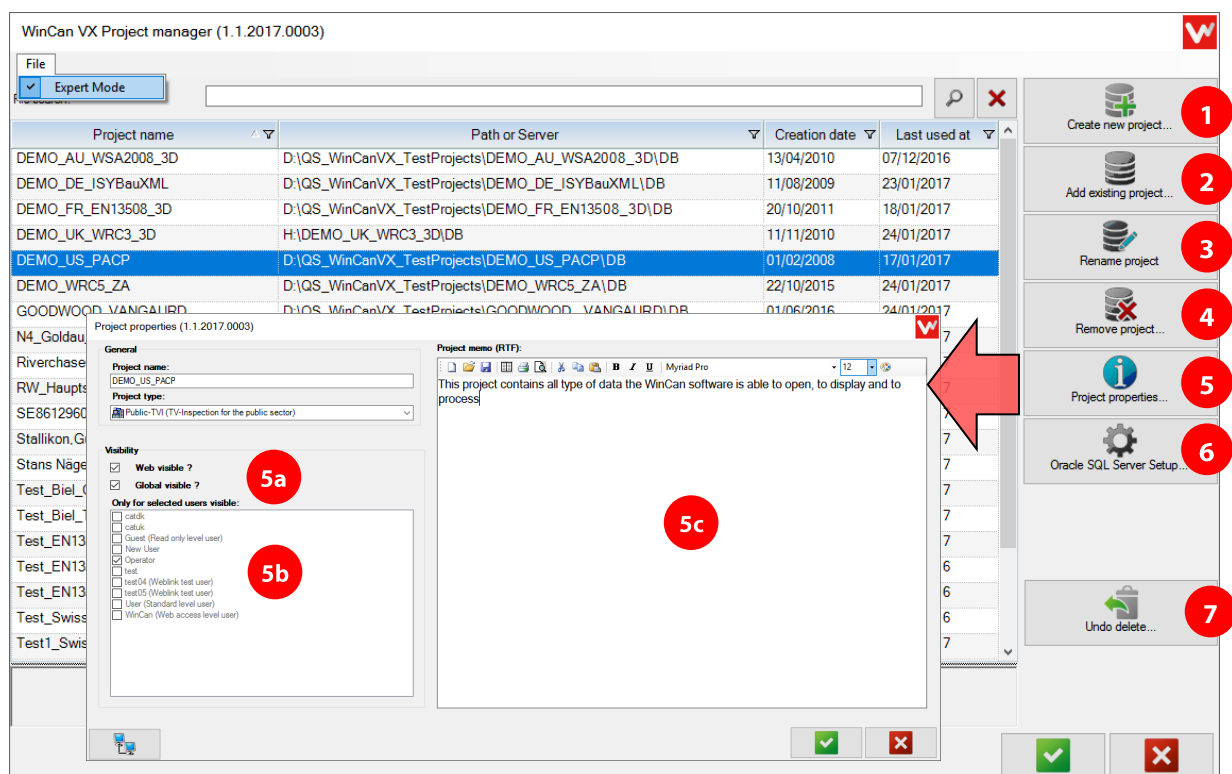
Every WinCan VX project carries two .sdf files in the DB folder by default. The file that has the suffix **\_Meta.sdf** is the metadata file for the project and **cannot** be used to open the project. It should be ignored for these purposes. This file only carries the project-specific user entries as well as the address data of the assigned participants (i.e. client, site, contractor, operators, equipment) but is none-the-less very important to the successful opening and editing of the WinCan VX project.

### 7.3 The Project Manager

For full administration of all the projects located either on a local or a network drive WinCan VX provides the user with various project management options via the *Manage Projects* button on the *Projects* ribbon:

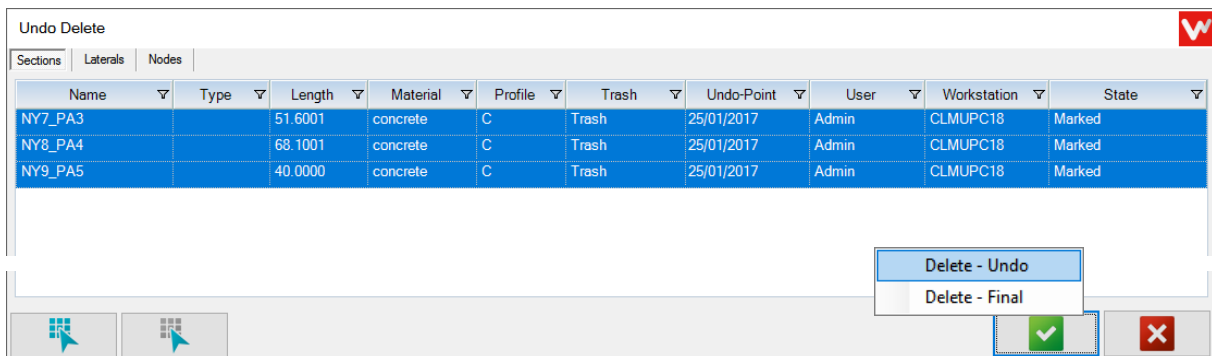




The *Project Manager* provides the user with the following options using the buttons on the right hand side of the dialog window:



1. Create a new project using the project wizard.
2. Add projects located on the local or a network drive to the list of available projects.
3. **Project Renaming:** Click this button after you have selected the corresponding project in the list of available projects. This will bring up a new small dialog box where you can enter and confirm the new project name. A project which is currently loaded in WinCan VX can also be directly renamed.
4. **Project Deletion:** First highlight the project in the list of available projects before you click this button. You can then either confirm or reject the delete action in the message box that follows. WinCan only deletes the **project links** from the project manager's list. The project itself has to be deleted in the Windows-Explorer!

5. **Project Properties:** Clicking on the *Project Properties* button displays a panel that shows the project type as well as options for user access control. Unchecking the option *Global Visible (5a)* enables the check boxes in the list field below (5b) where the availability of the the project can be set for specific user groups. Additionally, the *Project Memo (RTF)* window on the right hand side of the panel (5c) allows the user to free-type and format notes about the project for inclusion in the final outputs.
6. **Oracle/SQL Server Setup:** If this button is not in view, go to the *File* menu of the dialog window and select *Expert Mode*. The setup of this command is for expert users typically running very large projects from multiple CCTV sources. Expertise can be sought from WinCan if help is needed with establishing these types of projects.
7. **Undo Delete:** This command allows the user either to restore deleted database records (1) or to have them deleted definitely (2) from the database:

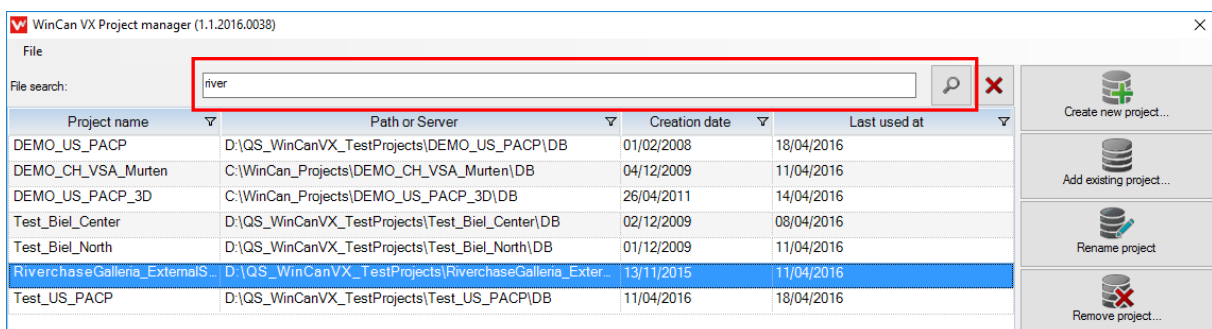



Clicking the button  allows the user to restore all records which have been deleted from the database. Hitting the button  is going to undo the record selection.

#### General Note on Deleting:

The software WinCanVX does NEVER delete a project or database records directly from the hard drive. This always lies within the user's responsibility.

The search field at the top of the project manager dialogue enables to look for a specific project within a large number of projects. Write a part of the project name into this text field and click on the magnifier icon to run the search process:

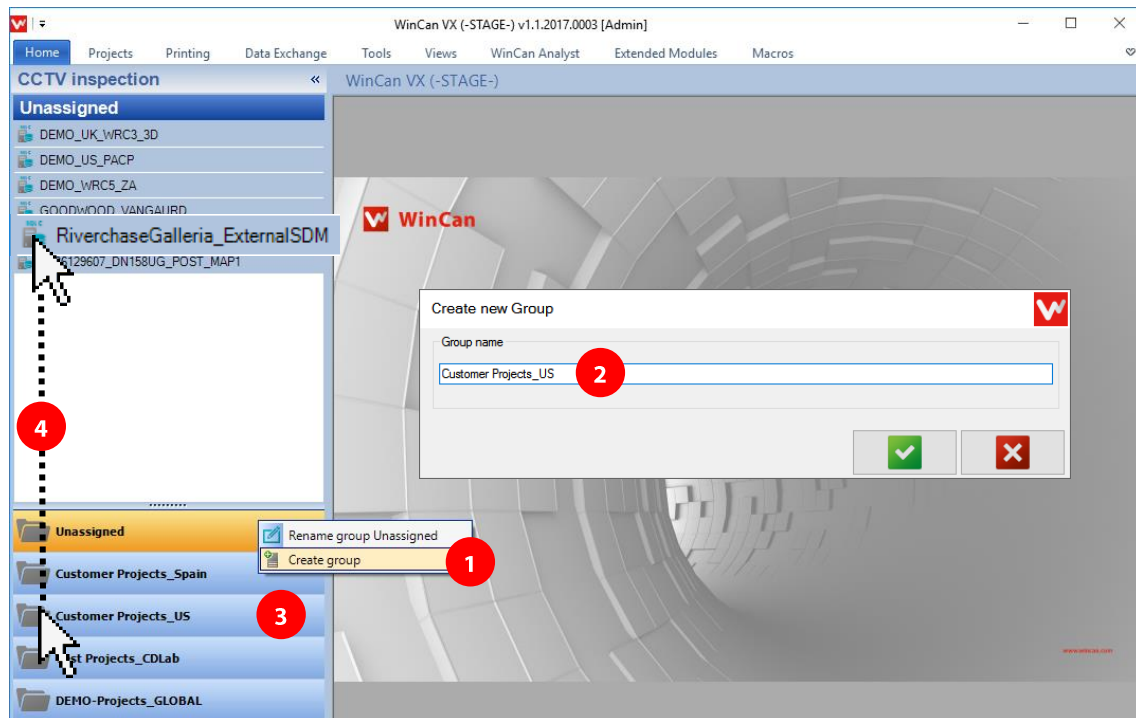


WinCanVX then is going to show you the first project that matches the search string you have entered before. The search string itself can be deleted with the delete button  right to the magnifier icon.

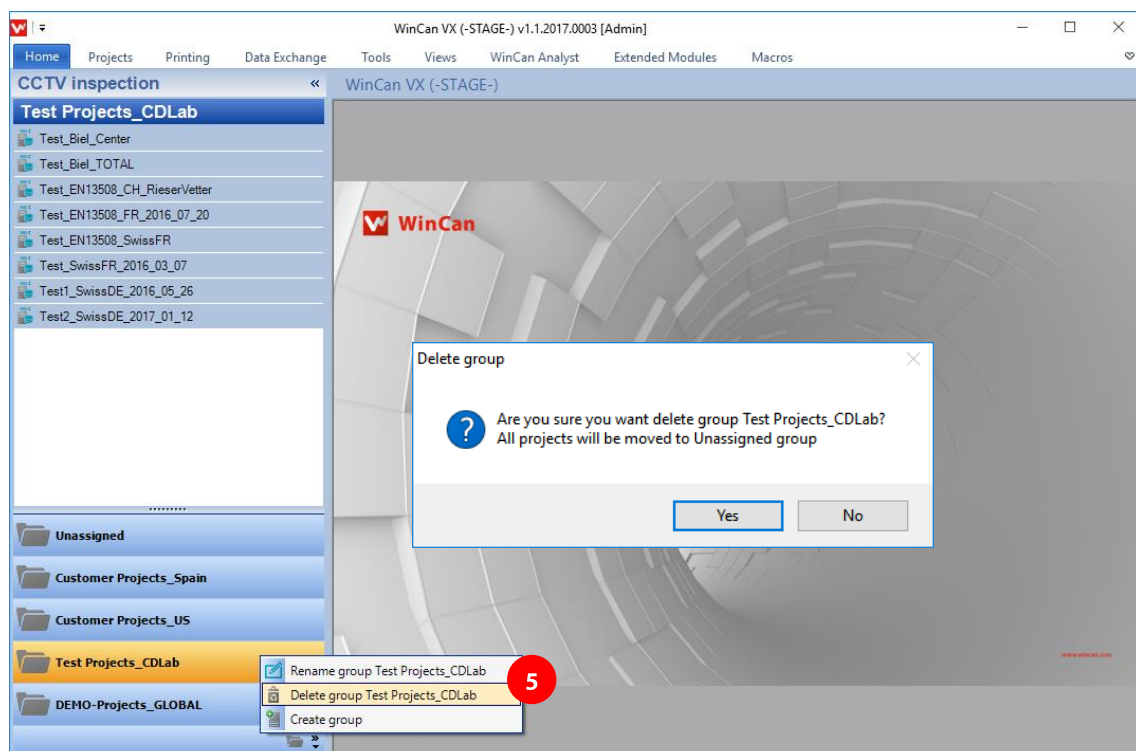
### 7.3.1 Shortcuts to existing projects:

The WinCan main screen provides a quick access to the project list available inside the project manager. This view also allows the user to create groups which existing projects can be assigned to: Right-click on the basic folder *Unassigned*, create (1) and rename (2) as many folders (groups) as needed and drag the corresponding projects from the list directly to the desired folder (3).

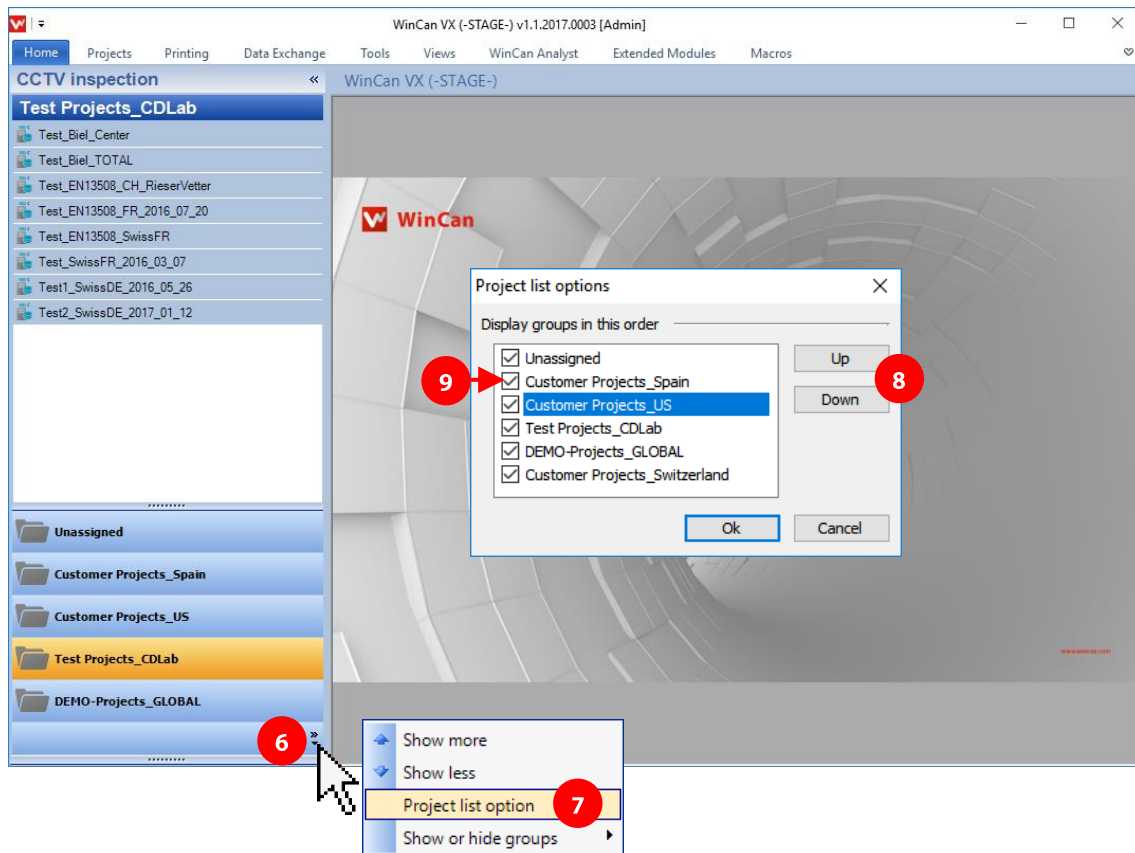
Always mind that you lay the mouse pointer over the project symbol (4) before you drag the object to the target folder:



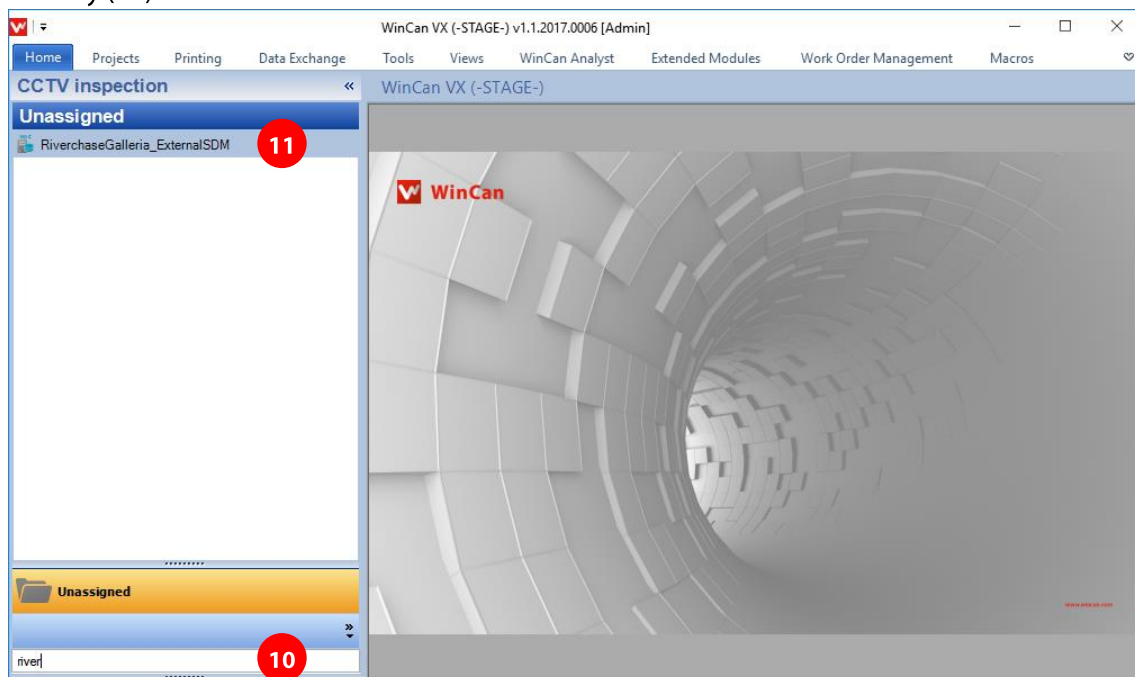
Existing folders can be moved and deleted or renamed via the context menu (5). When deleting a folder, WinCan is automatically going to move any projects back to the basic folder *Unassigned*.



At the end of the folder list an arrow button (6) is giving access to another command group. Select the command *Project list options* (7) to edit the order of the folders (8) or to specify folders you want to hide (9).

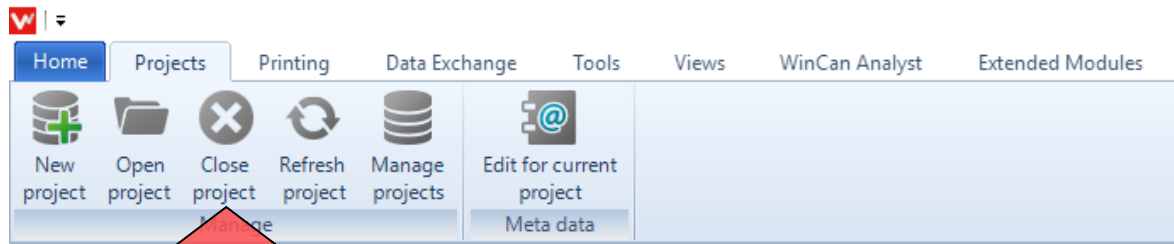


To quickly look for a specific project, simply type a part of the project name into the search field located below the group list (10) and WinCan is going to filter out the corresponding project(s) directly (11).



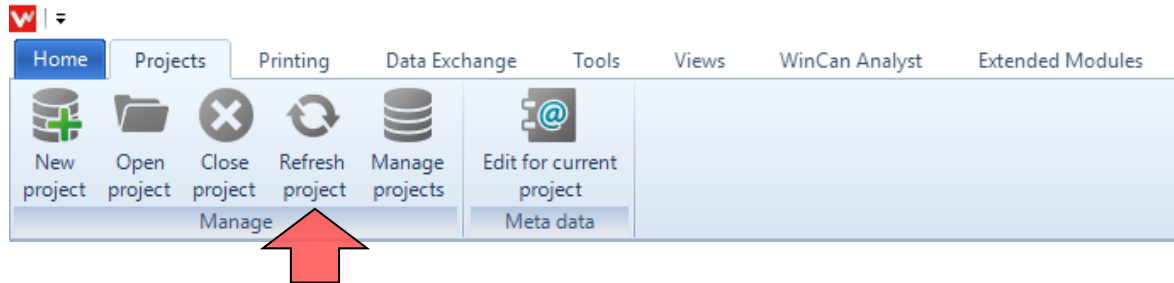
## 7.4 Closing Project

The *Close Project* button ends the current project and saves all changes in their respective directories. This is a convenient option, which takes the user back to the main screen for new projects with WinCan VX in a neutral state.



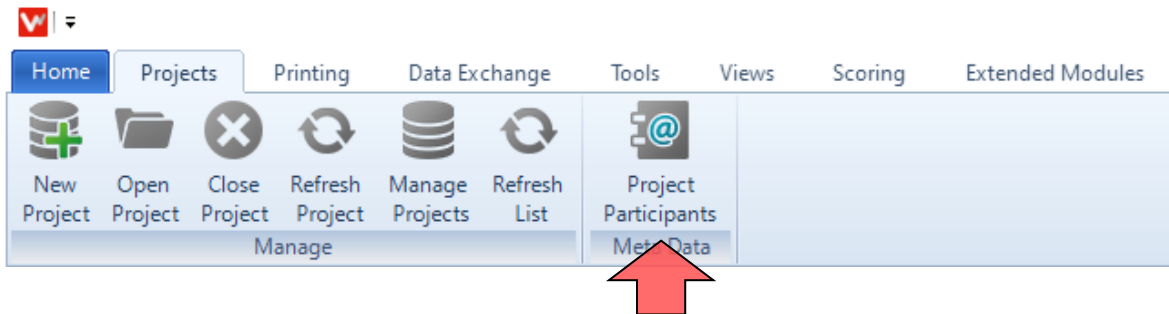
## 7.5 Refreshing Project

The *Refresh Project* command helps the user to update the current project. This is useful at various times during project work including refreshing the outputs to WinCan Map and after merging data from other projects.

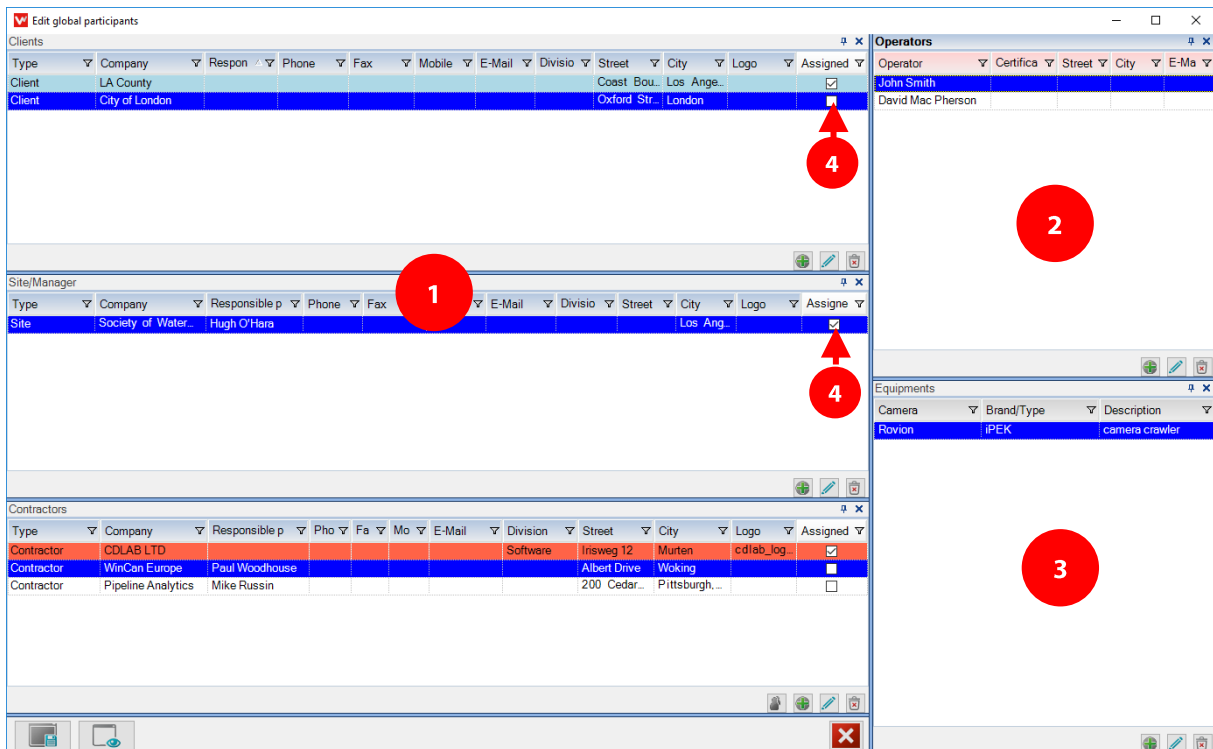


## 8 Project Participants





The *Assign Project Participants* button gives access to the address records of the client, project manager and contractor (i.e. the inspection company), in order to assign them to the current project:



The panel at the left (1) is reserved for the entry of the participants addresses and subdivided into the categories **Client**, **Site/Manager** and **Contractor**. In addition to the address data, you can enter operational resources such as staff (2), camera equipment and CCTV vehicles (3):



There are a number of action buttons in the bottom right hand corner of each of the five data panels:

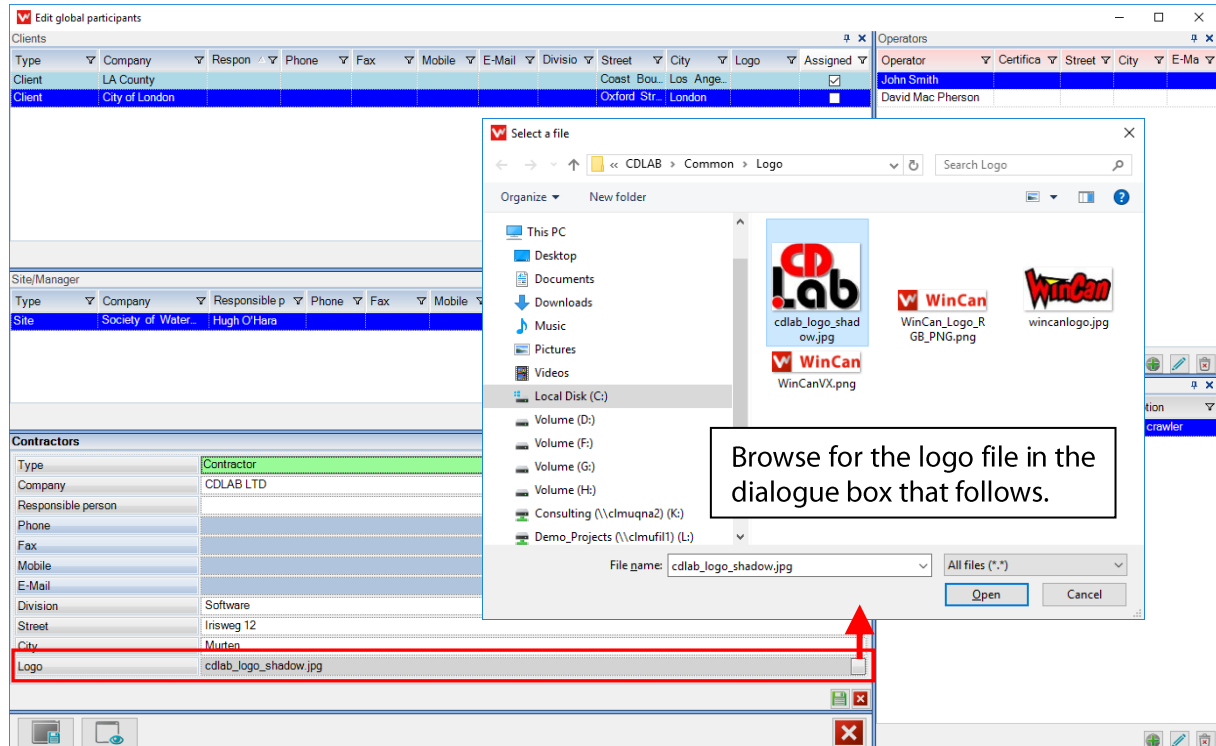
-  = Create new record
-  = Edit selected record
-  = Delete selected record
-  = Set as default contractor

You may also hover over a button to see a description of what it does.

All this data is managed within a separate database (*C:\Users\PublicDocuments\CDLab\Common\Resources\sql\CE\WCMETA.db3*) in individual tables and can be reassigned to a new project or a new job accordingly. To assign an address to the current project simply activate the corresponding check box within the field *Assign* (4). Assigned address data are thus automatically copied into the Local META-database (*[Project]\_Meta.db3*).

The address records are shown in a grid view can be edited by either double clicking on the appropriate record, or with the *Edit* button. Once the data area is open, changes can be made to the participants associated with the project.

To assign the logo to a client or a contractor (e.g. default contractor) open the entry mask for the desired address and click on the button at the right end of the logo line:



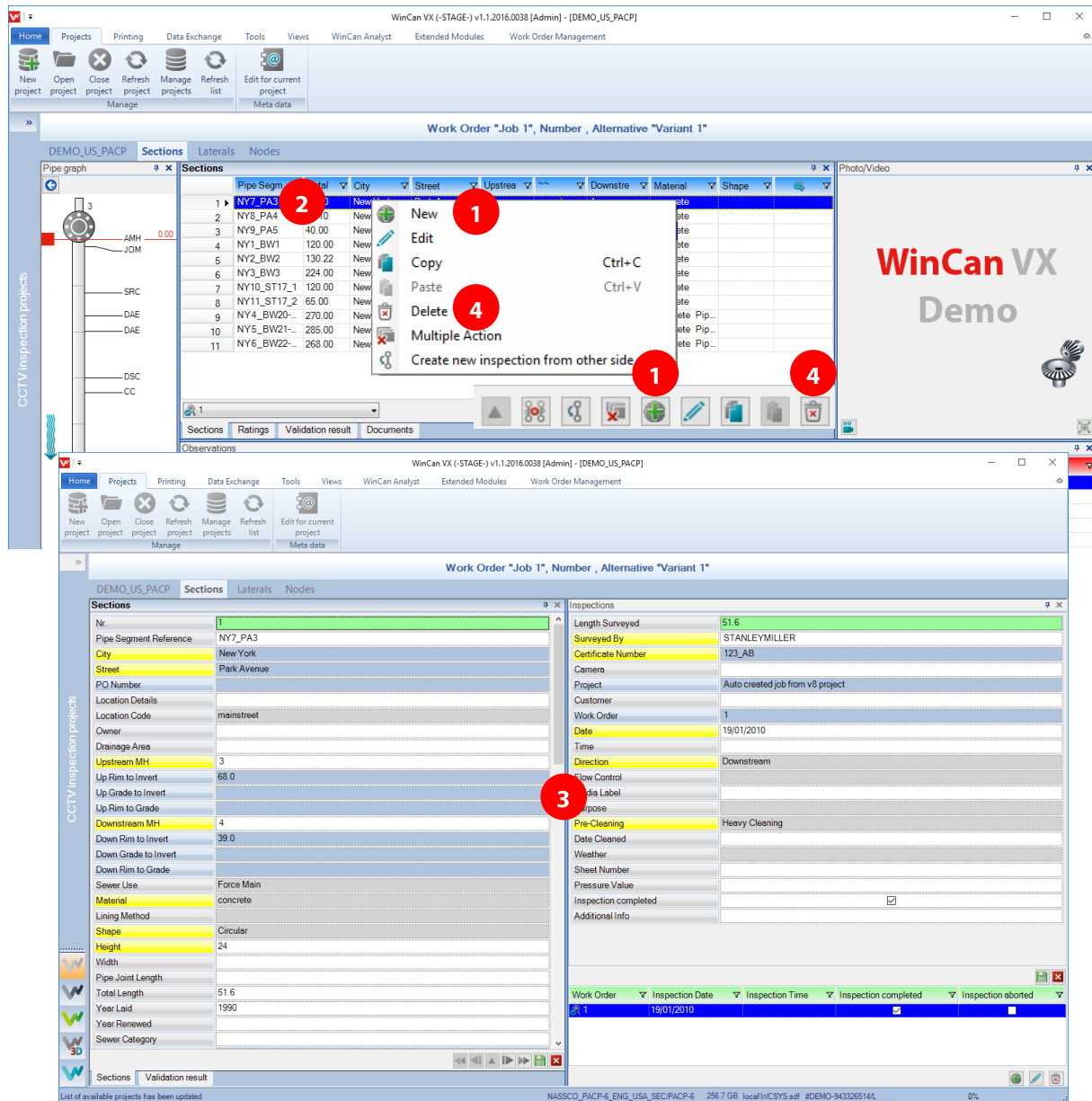
A click on the diskette icon at the bottom right hand corner of the input mask is saving the current record and brings you back to the list view.


### Note on logos:


When adding a logo to the **Contractor's** address details, this will appear at the top-left hand corner of every page in the PDF output report. When adding a logo to the **Client's** address details, this will appear once only in the PDF report, on the cover page. The logo assigned to the **Site/Manager** will not be shown on the report pages.


## 9 Creating Sections & Inspections

The project data in WinCan VX shows **section, satellite and manhole data** on the one hand and their inspection and observation data on the other. For data entry, the user can switch from a grid view (summary view) to an entry view within each category:



Click on the button  in the symbol bar at the bottom right hand corner of the section panel (1) to create a **new** section or use the context menu command *New*. The subsequent entry view then allows you to type in all section and inspection data required by the currently applied standard (3). Change from one field to the next pushing either the TAB key on your keyboard or the left mouse key. Some fields contain predefined lists (e.g. *material*) or input formats (e.g. *inspection date*) to make data entry easier.


To open an **existing** section directly in the entry view double click on the preferred section line (2). Finally click on the diskette button  at the bottom right hand corner of the input mask to save your changes and to return to the summary view.

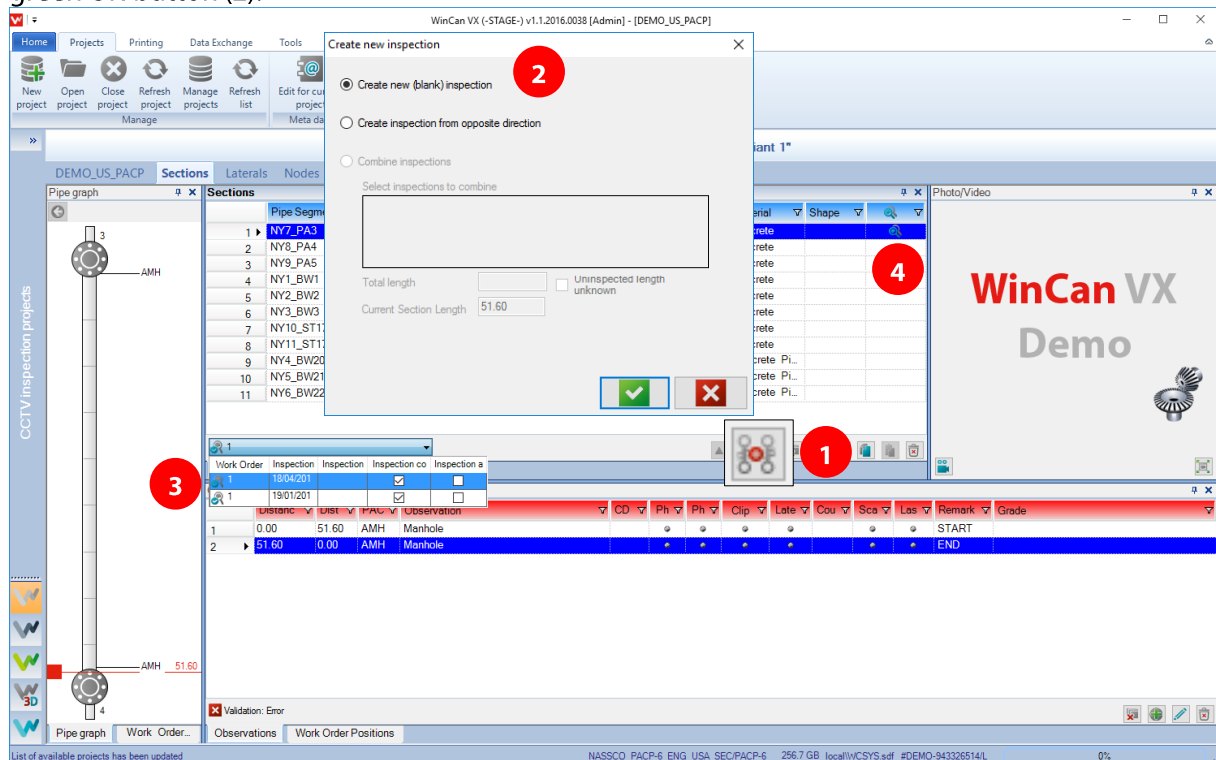
Sections are **deleted** from the summary view with the button  at the bottom right hand corner of the section panel or via the context menu command *delete* (4).

The default field colours in the input mask are set to BLUE (section fields) or RED (inspection and observation fields) respectively. YELLOW coloured fields are so-called mandatory fields that require data entry. Use the command *Home > Settings > General > Colours* to select the field colours you prefer to work with.

### 9.1 Multiple Inspections


Basically sections, satellites and manholes can in be inspected **several times** and the relevant master data do NOT need to be re-entered for subsequent surveys.

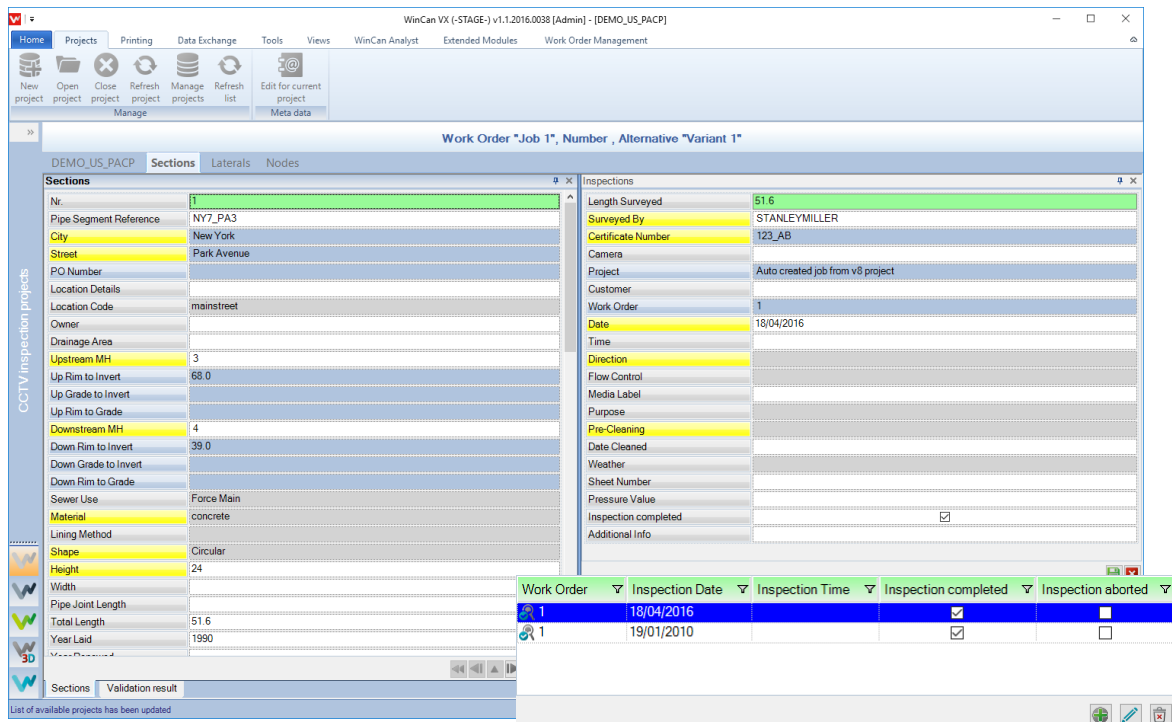
First highlight the section where a repeat survey needs to be carried out and click on the button  in the symbol bar (1) to directly assign a **new** inspection to the selected section. In the dialogue box that follows this option is already activated by default and only needs to be confirmed yet with the green OK-button (2):



A repeat survey can be done in the same direction as the original, or the opposite direction. Most of the section header information will remain the same for each survey, with the only likely changes to be date and time (WinCan VX will do this automatically) and survey direction (this will be auto-entered based on the user's selections).

Once several inspections have been assigned to a specific section they can also be selected from a list box (3) located at the bottom left corner of the section overview panel. Furthermore a magnifier symbol is set in a separate column (4) to mark all the sections with more than one survey.

Inspections basically must be deleted within the input mask where they are listed in a table below the inspection data. Click on the inspection to be deleted and hit the button :



Work Order	Inspection Date	Inspection Time	Inspection completed	Inspection aborted
1	18/04/2016		<input checked="" type="checkbox"/>	<input type="checkbox"/>
1	19/01/2010		<input checked="" type="checkbox"/>	<input type="checkbox"/>

It is possible to add as many inspections as necessary to the same section where each inspection is created for a specific purpose as shown in the possible example below:

- Inspection 1: **Standard survey** for basic pipe damage recording. It is automatically created together with a new object (main section, lateral section or manhole) as soon as the user opens the data entry panel.
- Inspection 2: Pipe condition survey after rehabilitation (rehabilitation survey).
- Inspection 3: Pipe condition survey after a given period (e.g. 5 years)...

### **Note1 on Multiple Surveys:**

*This working strategy is especially used by large (water) authorities which are managing their survey data via a **central database** (SQL or ORACLE).*

*Private pipe survey companies on the other hand usually re-enter all the section and survey data into an **empty project** when inspecting the same pipe section after a given time period, and thus will always have just one inspection assigned to each section.*

### **Note 2 on Multiple Surveys:**

*Users who are familiar with previous versions of WinCan are likely to be used to creating new survey sections each time they have to resurvey a pipe for any reason. Operators are encouraged to use this new system in WinCan VX.*

## 9.2 Merging Abandoned Inspections

If the camera is unable to pass through the pipe during a survey (e.g. due to an obstacle) you must stop the inspection and try to re-start a new survey from the opposite end. Both partial surveys must be assigned to the same section and finally need to be merged into a ONE complete survey. The following pages describe how this procedure is implemented in WinCan VX.

WinCan VX (-PROD-) v1.2019.7.6 [Admin] - [DEMO\_US\_PACP]

Home Projects Printing Data Exchange Tools Views WinCan Analyst Extended Modules Work Order Management Macros OEM Tools Admin

DEMO\_US\_PACP Sections Laterals Nodes

Pipe Graph

Sections

Pipe Segment	Total Leng	City	Street	Upstream M	Downstream	Material	Shape
1 NY7_PA3	51.6	New York	Park Avenue	3	4	concrete	
2 NY8_PA4	71.0	New York	Park Avenue	4	5	concrete	Circular 24in
3 NY9_PA5	40.0	New York	Park Avenue	5	6	concrete	
4 NY1_BW1	120.0	New York	Broadway	10	11	concrete	
5 NY2_BW2	130.2	New York	Broadway	11	12	concrete	
6 NY3_BW3	262.6	New York	Broadway	12	13	concrete	Circular 24in
7 NY10_ST17_1	120.0	New York	17th Street	1_ST17	2_ST17	concrete	Circular 18in
8 NY11_ST17_2	65.0	New York	17th Street	2_ST17	3_ST17	concrete	
9 NY4_BW20-21	270.0	New York	Broadway	20	21	Concrete Pipe...	
10 NY5_BW21-22	285.0	New York	Broadway	21	22	Concrete Pipe...	
11 NY6_BW22-23	268.0	New York	Broadway	22	23	Concrete Pipe...	

Observations


Distan	Distan	PACP	Observation	CD1	Photo 1	Photo 2	Clip
1 0.00	0.00	AMH	Upstream Manhole, Survey Begins				
2 0.00	0.00	MWL	Water Level, 0% of cross sectional area				
3 10.00	-10.00	DSC	Deposits Settled Compacted, 5 %of cross sectional area, from 0...				
4 12.00	-12.00	TF	Tap Factory Made at 10 o'clock, 6inch dim, within 8 inch				
5 24.00	-24.00	DSC	Deposits Settled Compacted, 5 %of cross sectional area, from 0...				
6 32.00	-32.00	TF	Tap Factory Made at 2 o'clock, 6inch dim, within 8 inch				
7 32.00	-32.00	FC	Fracture Circumferential from 6 o'clock to 8 o'clock				
8 37.00	-37.00	MSA	Survey Abandoned				

Not inspected length 3

1

2

Enter your section and inspection data as usual and start damage recording. As soon as the camera is unable to continue for any reason you will have to stop the survey and enter the appropriate codes (e.g. **survey abandoned** (1)).

Click on the button  (2) afterwards. WinCan VX then is going to copy all the inspection header data from the first survey into the new one and automatically inverts the inspection direction.

WinCan VX (-PROD-) v1.2019.7.6 [Admin] - [DEMO\_US\_PACP]

Home Projects Printing Data Exchange Tools Views WinCan Analyst Extended Modules Work Order Management Macros OEM Tools Admin

DEMO\_US\_PACP Sections Laterals Nodes

Pipe Graph

Sections

Pipe Segment	Total Leng	City	Street	Upstream M	Downstream	Material	Shape
1 NY7_PA3	51.6	New York	Park Avenue	3	4	concrete	
2 NY8_PA4	71.0	New York	Park Avenue	4	5	concrete	Circular 24in
3 NY9_PA5	40.0	New York	Park Avenue	5	6	concrete	
4 NY1_BW1	120.0	New York	Broadway	10	11	concrete	
5 NY2_BW2	130.2	New York	Broadway	11	12	concrete	
6 NY3_BW3	262.6	New York	Broadway	12	13	concrete	Circular 24in
7 NY10_ST17_1	120.0	New York	17th Street	1_ST17	2_ST17	concrete	Circular 18in
8 NY11_ST17_2	65.0	New York	17th Street	2_ST17	3_ST17	concrete	
9 NY4_BW20-21	270.0	New York	Broadway	20	21	Concrete Pipe...	
10 NY5_BW21-22	285.0	New York	Broadway	21	22	Concrete Pipe...	
11 NY6_BW22-23	268.0	New York	Broadway	22	23	Concrete Pipe...	

Observations

Distan	Distan	PACP	Observation	CD1	Photo 1	Photo 2	Clip
1 0.00	0.00	AMH	Manhole				
2 0.00	0.00	MWL	Water Level, 0% of the vertical dimension				
3 22.00	-22.00	TF	Tap Factory Made at 12 o'clock, 6inch dim, within 8 inch				
4 32.00	-32.00	MSA	Survey Abandoned				

Not inspected length 3

3

2

Next run the survey from the opposite section end until the camera is reaching the site where you had to stop the first survey part. Enter again the appropriate codes (e.g. **survey abandoned** (3)), which may be completed by a specific remark.

WinCanVX is showing now both survey parts in the list box below the section overview panel (4). Furthermore, a magnifier symbol is set in a separate column (4a) to label all the sections with more than one survey.

The screenshot shows the WinCan VX software interface. On the left is a 'Pipe Graph' showing a vertical pipe with labels 'AMH', 'MWL', 'TF', and 'MSA'. The main area is a 'Sections' list with columns: Pipe Segment, Total Leng, City, Street, Upstream M, Downstream, Material, and Shape. Below this is a 'Work Order' table with columns: Work Order, Purpose, Inspection Date, and a magnifier icon (4a). The magnifier icon is a red circle with a white magnifying glass, used to label sections with more than one survey.

Pipe Segment	Total Leng	City	Street	Upstream M	Downstream	Material	Shape
1 NY7_PA3	51.6	New York	Park Avenue	3	4	concrete	
2 NY8_PA4	71.0	New York	Park Avenue	4	5	concrete	Circular 24in
3 NY9_PA5	40.0	New York	Park Avenue	5	6	concrete	
4 NY1_BW1	120.0	New York	Broadway	10	11	concrete	
5 NY2_BW2	130.2	New York	Broadway	11	12	concrete	
6 NY3_BW3	262.6	New York	Broadway	12	13	concrete	Circular 24in
7 NY10_ST17_1	120.0	New York	17th Street	1_ST17	2_ST17	concrete	Circular 18in
8 NY11_ST17_2	65.0	New York	17th Street	2_ST17	3_ST17	concrete	
9 NY4_BW20-21	270.0	New York	Broadway	20	21	Concrete Pipe...	
10 NY5_BW21-22	285.0	New York	Broadway	21	22	Concrete Pipe...	
11 NY6_BW22-23	268.0	New York	Broadway	22	23	Concrete Pipe...	

Work Order	Purpose	Inspection Date
1		01/01/2010
1		06/01/2020

Now, create another survey hitting the command *Tools > Combine abandoned inspections* to merge the partial surveys:

The screenshot shows the WinCan V software interface. The 'Tools' menu is open, and 'Combine Abandoned Inspections' is highlighted with a red arrow. Other tools visible include Auto Create Laterals, Auto Connection, Insert New Manhole, Move Inspection, WinCan Validator, Manage Web Projects, Pro Touch, Project Documents, and Reports.

The software then automatically recognizes all sections with partial surveys within the current project. Mark the sections via the corresponding check box (5).

The screenshot shows the 'Combine Abandoned Inspections' dialog box. It contains a table with columns: Section, Upper node, Lower node, Direction 1, Length 1, Direction 2, Length 2, Total Insp. length, New length, and New Direction. The 'Section' column has a check box (5) next to 'NY8\_PA4'. The 'Total Insp. length' column shows '69.00' (6a) and the 'New length' column shows '71.00' (6). Below the table are checkboxes for 'Show only most recent inspections', 'Show modified inspections (changed since previous merge)', 'Auto-calculate new length', and 'Mark abandoned inspections as deleted'. The 'Auto-calculate new length' checkbox is checked (6). There are also 'OK' and 'Cancel' buttons.

Section	Upper node	Lower node	Direction 1	Length 1	Direction 2	Length 2	Total Insp. length	New length	New Direction
<input checked="" type="checkbox"/> NY8_PA4	4	5	->	37.00	<-	32.00	69.00	71.00	->

Always mind that the option *Auto-calculate new length* is enabled (6) to have the totally inspected length calculated (6a).

You may also type values provided by maps into the field *New length* (6b): the software then calculates the difference between the section length and the inspected length and shows the uninspected area in the pipe graph as well as on the inspection report page.

## Creating Sections & Inspections

The merged and abandoned surveys can now be selected directly from the list box (7) below the section overview panel:

The screenshot shows the WinCan VX interface with the 'Sections' panel active. The 'Pipe Segment R' table lists various pipe segments with their total lengths, cities, streets, and upstream/downstream manholes. Below this, the 'Work Order' table shows inspection details for different work orders. A red circle highlights the 'Inspection Date' column in the 'Work Order' table, which is labeled with a red '7'.

Work Order	Purpose	Inspection Date
1		01/01/2010
1		06/01/2020
1		06/01/2020

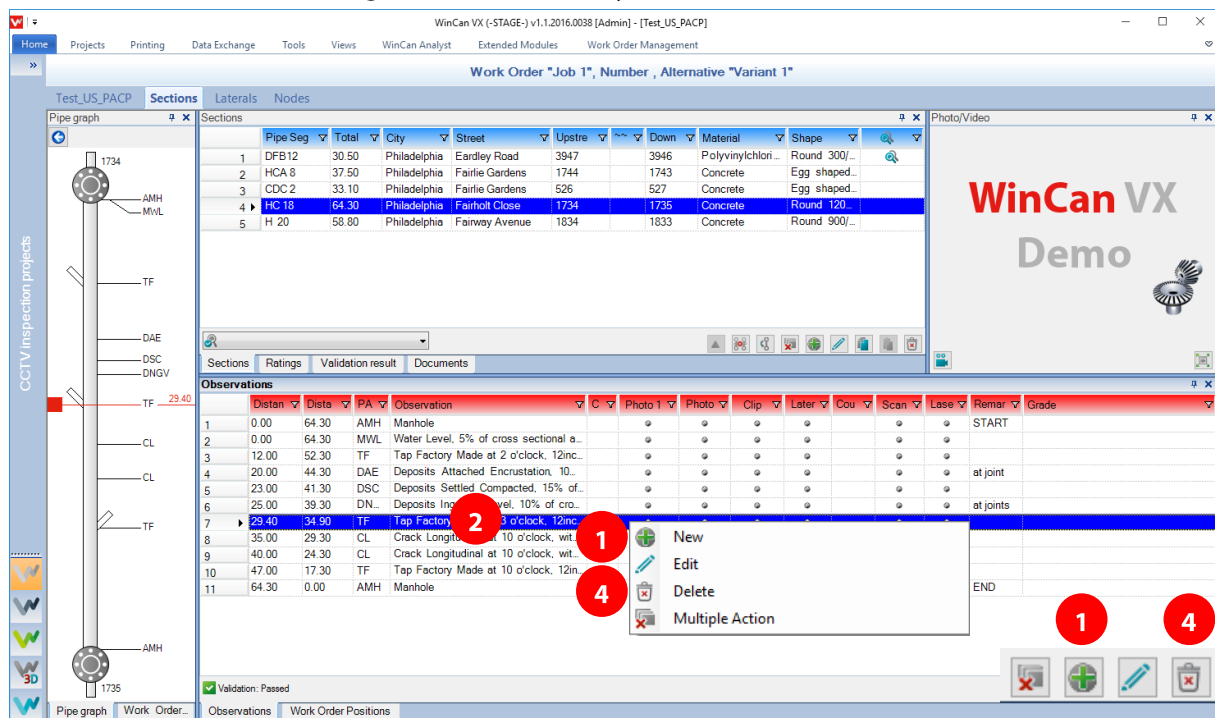
At last you may delete both abandoned surveys listed in the inspection table below the input mask after you have merged them to a combined survey:

The screenshot shows the WinCan VX interface with the 'Inspections' panel active. The 'Inspection' table lists various inspection details, including the length surveyed, surveyed by, certificate number, camera, project, customer, work order, date, time, direction, flow control, media label, purpose, pre-cleaning, date cleaned, weather, sheet number, pressure value, inspection completed, and additional info. A red circle highlights the 'Inspection Date' column in the 'Inspection' table, which is labeled with a red '7'.

Work Ord	Purpo	Inspection D	Inspection Ti	Inspection comple	Inspection abor
1		01/01/2010	10:58	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1		06/01/2020	11:15	<input type="checkbox"/>	<input checked="" type="checkbox"/>
1		06/01/2020	16:14	<input type="checkbox"/>	<input checked="" type="checkbox"/>

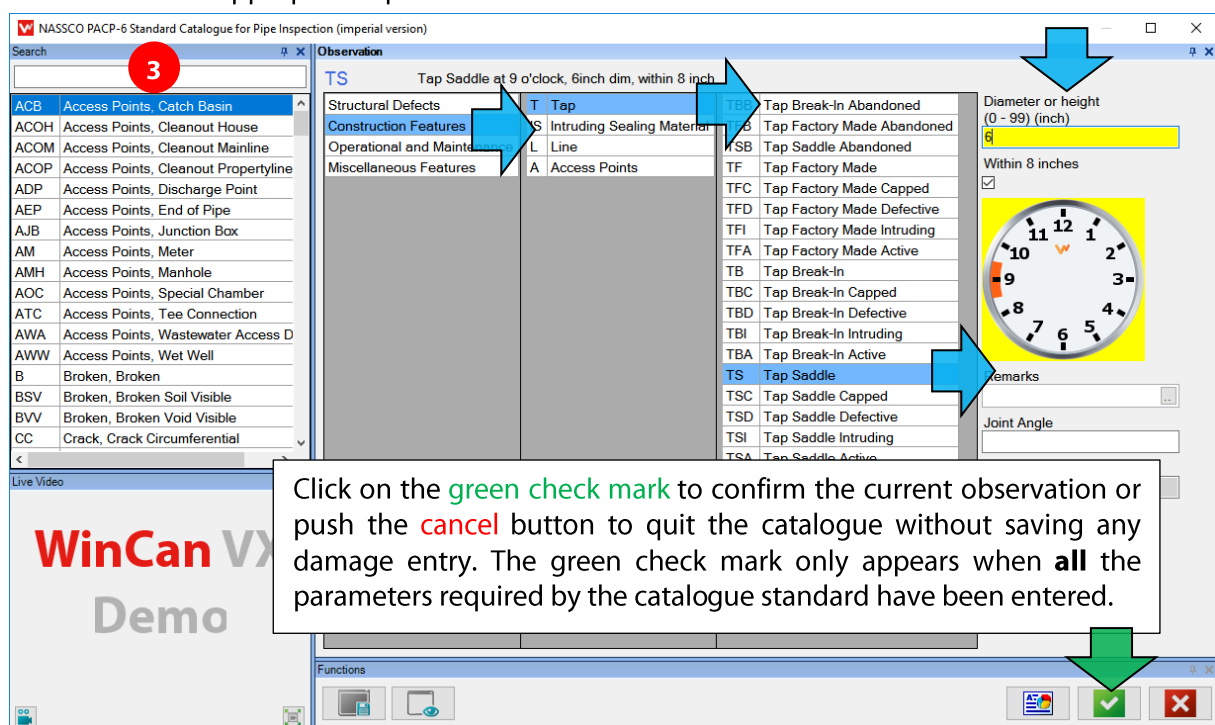
## 10 Observations

New sections in WinCan VX always show an **empty** observation area without any grid structure. Use the buttons in the symbol bar at the bottom right hand corner of the observation panel to create a **new** (1) or to **delete** (4) an existing observation or use the corresponding right-click menu command. To edit an **existing** observation directly double click on the observation text (2):



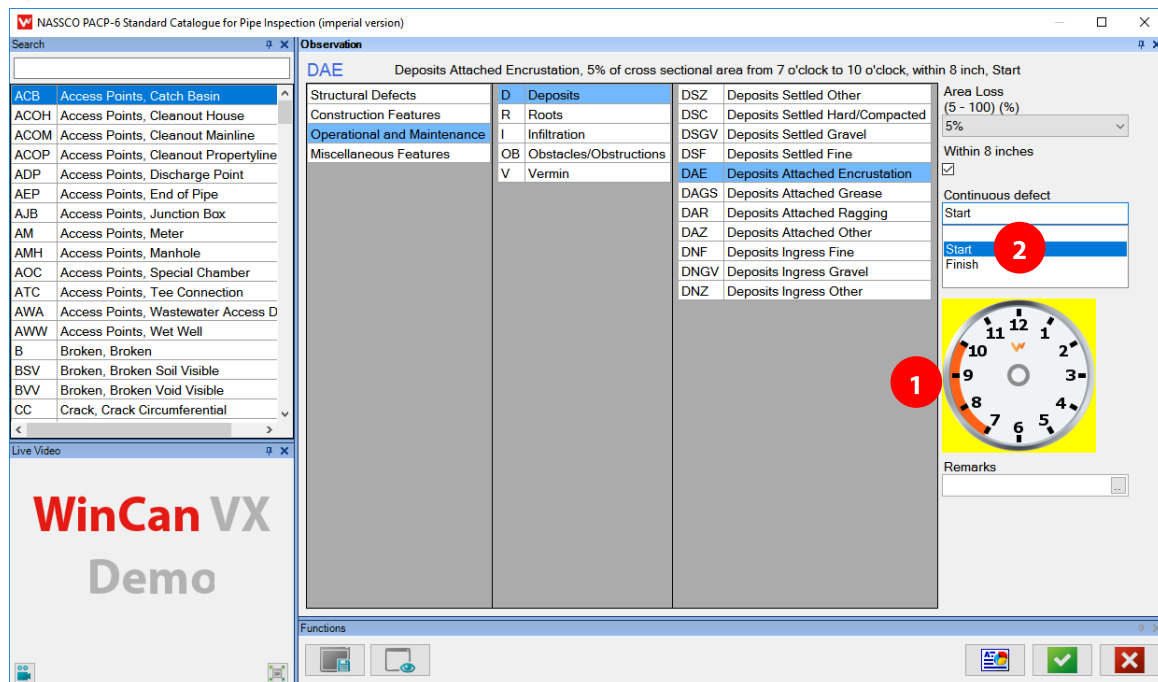
In both cases the **damage catalogue** the current project is based on will automatically be opened in a separate panel. Use the TAB key on your keyboard or the mouse to jump from one category to the next in order to describe the damage in accordance with the standards for your region.

You may directly enter the observation code or a key word into the text field at the top left hand corner of the panel (3), and all the codes containing that word will be listed, from where you can select the most appropriate option:



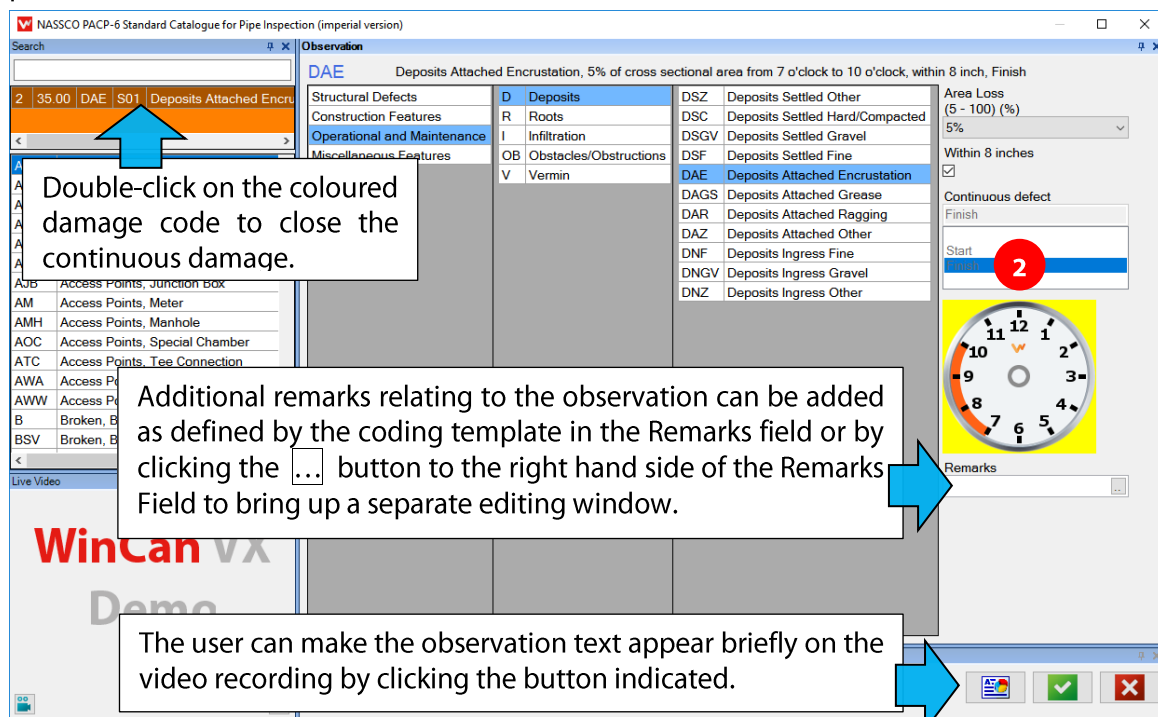
## 10.1 Additional Input Parameters

Some damage catalogues (e.g. PACP, WRC, WSA, NZPIM, EN-13508) require the input of additional parameters to accurately describe the observation. WinCan VX lists these yellow-marked input fields by default to the right of the catalogue window:



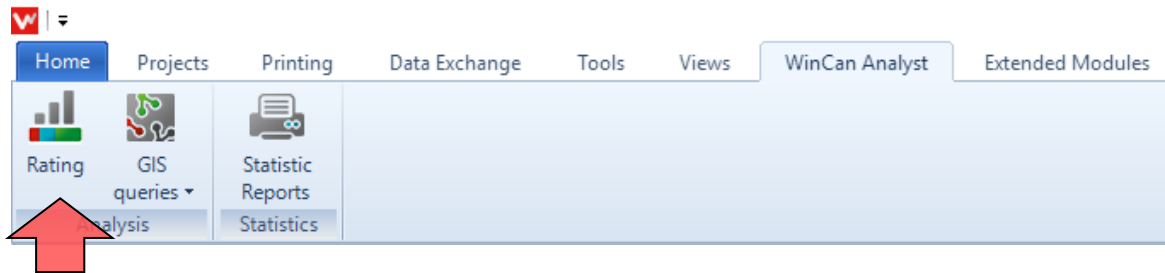
Circumferential damage extents must be described with clock positions (example 3 o'clock or from 5 to 7 o'clock). If the clock is displayed you can directly click on a clock position to locate the damage. To describe a larger damage extent select clockwise two pointer positions (1). If the clock symbol is missing use the corresponding text fields to enter the pointer positions.

Some observations can be described as continuous. In such cases, it is necessary to select and highlight the text **Start** (2) in the list box before confirming the observation. At all subsequent observation entries, the description of the observation **End** automatically appears in the catalogue panel until the user selects it to confirm the end of the continuous observation:



## 10.2 Damage Grading Scores

Some standards (e.g. PACP, WRC, WSA, NZPIM) apply an automatic damage assessment (also known as damage scoring or condition grading) whereas others allow the user to set the value manually. To manually run the grading system, select the *Rating* button from the *WinCan Analyst* tab:



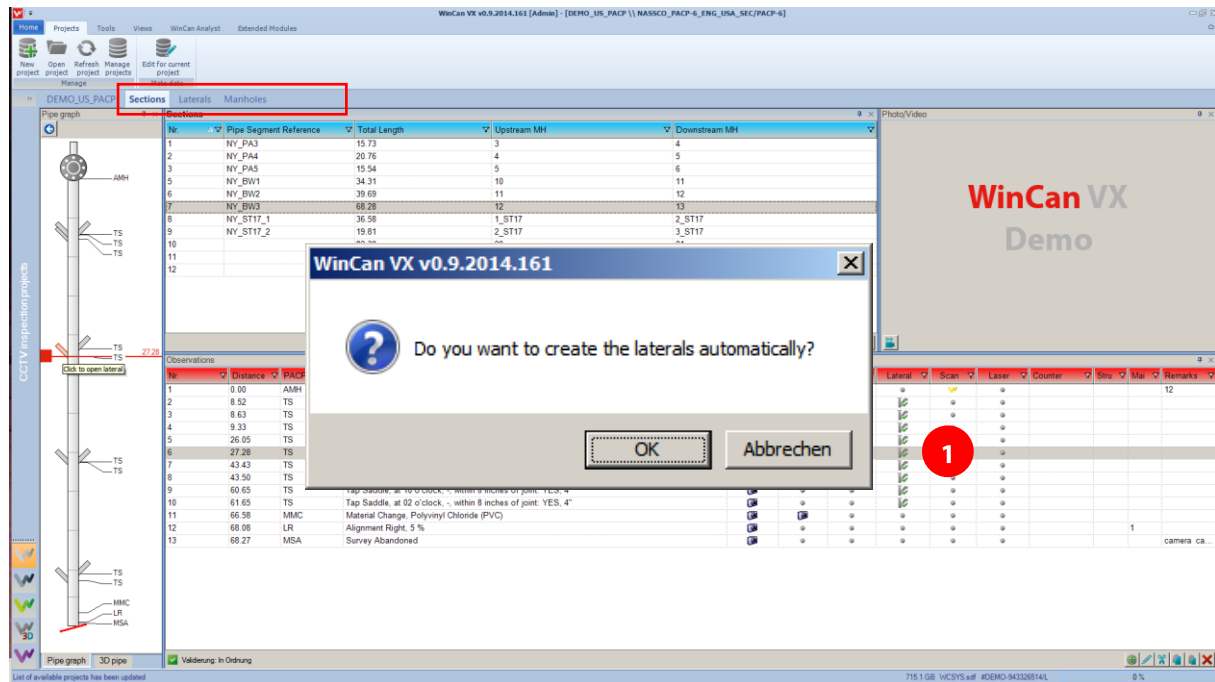
Observations that have been graded can also be printed in specific colors, usually predefined by the corresponding damage standard (e.g. WRC).

In accordance with the standards that describe the way in which these grades are calculated, the user should take note that the values are offered as a guideline only, and are not always available for all types of pipe material.

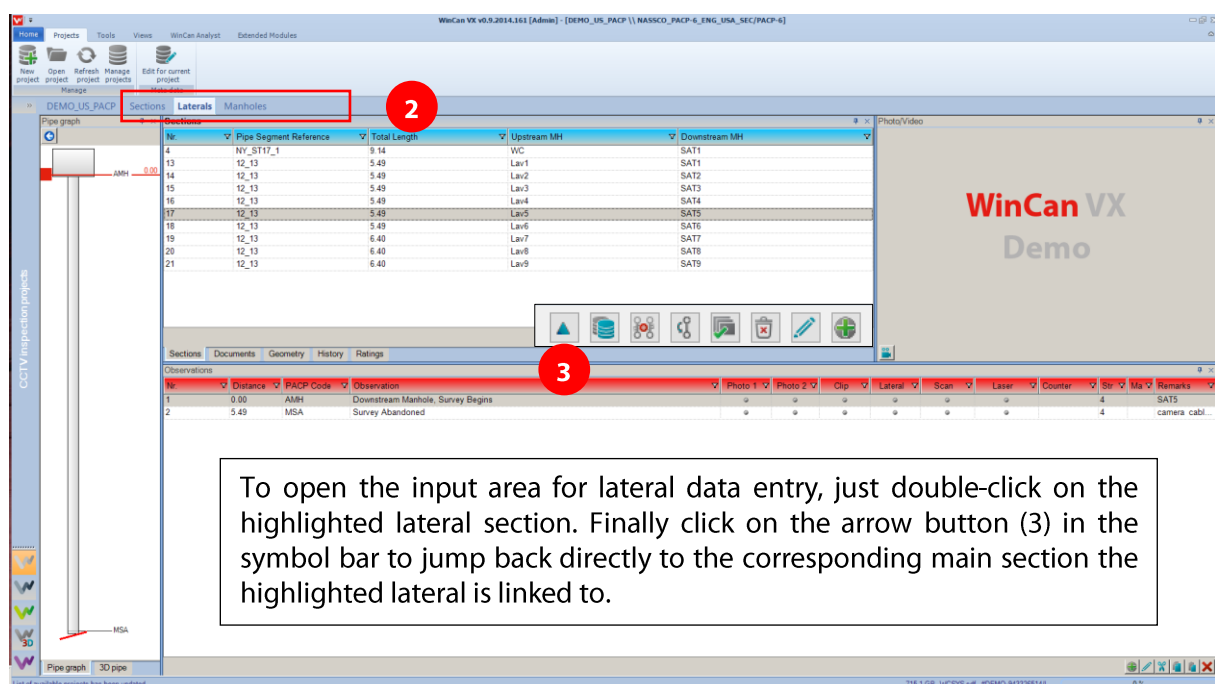
## 11 Lateral Sections (AKA Satellite Sections)

Lateral (or satellite) sections are pipe lines connected to the public main sewer sections. WinCan VX uses different tabs to clearly separate these two types of pipe lines from each other. As soon as the survey has been finished or abandoned, WinCan VX may ask the user whether the laterals found during that survey should automatically be created, depending on the options that are selected in *Home > Settings*.

The operator can also click the *Auto create laterals* button in the *Tools* tab at any time and the software will identify all the potential satellite connection points in the existing survey data and prompt to create the corresponding lateral sections:



The connection between a lateral and the corresponding main section will be labelled in the column *Sat* of the observation panel (1). Double-clicking on the lateral icon in this column will directly jump to the tab *Laterals* (2) and highlight the lateral section linked to the previously selected main section:



**Notes on data entry for main sewer and lateral sections:**

The input masks for section data and laterals contain two default list items for the field *SectionType*:

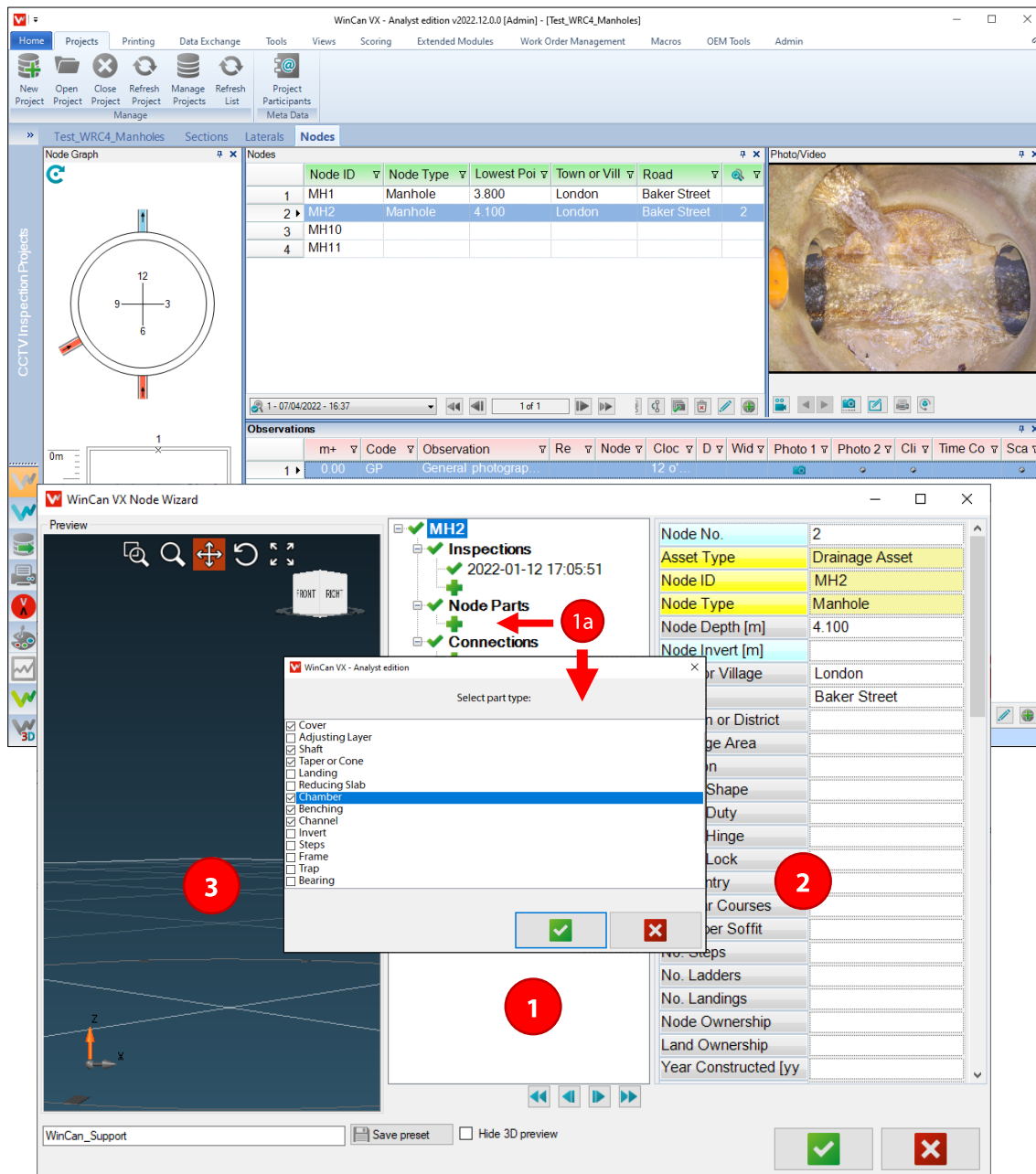
The screenshot shows the WinCan VX Demo 1 interface. At the top, there are three tabs: 'Sections', 'Laterals', and 'Manholes'. The 'Sections' tab is selected and highlighted with a red box. Below the tabs, the 'Sections' form is displayed. The 'Line Type' field is highlighted in yellow. A dropdown menu is open for 'Line Type', showing two options: 'Section' (green) and 'Lateral' (blue). A red arrow points from the 'Lateral' option to the 'Sections' tab, indicating that selecting 'Lateral' will move the record to the 'Laterals' category.

If the user selects the list item *Section* WinCanVX is going to create a record in the category **Sections** whereas the selection of the list item *Lateral* will move the record automatically into the category **Laterals**.

## 12 Recording Manholes or Nodes

The manhole category group contains the same grid view as for sections and laterals. Upstream and downstream node points that define the beginning and the end of a pipe section are automatically created within the same WinCanVX project. Node points can be any start or end point including manholes, gullies, inspection chambers catch pits and connection to other pipes.

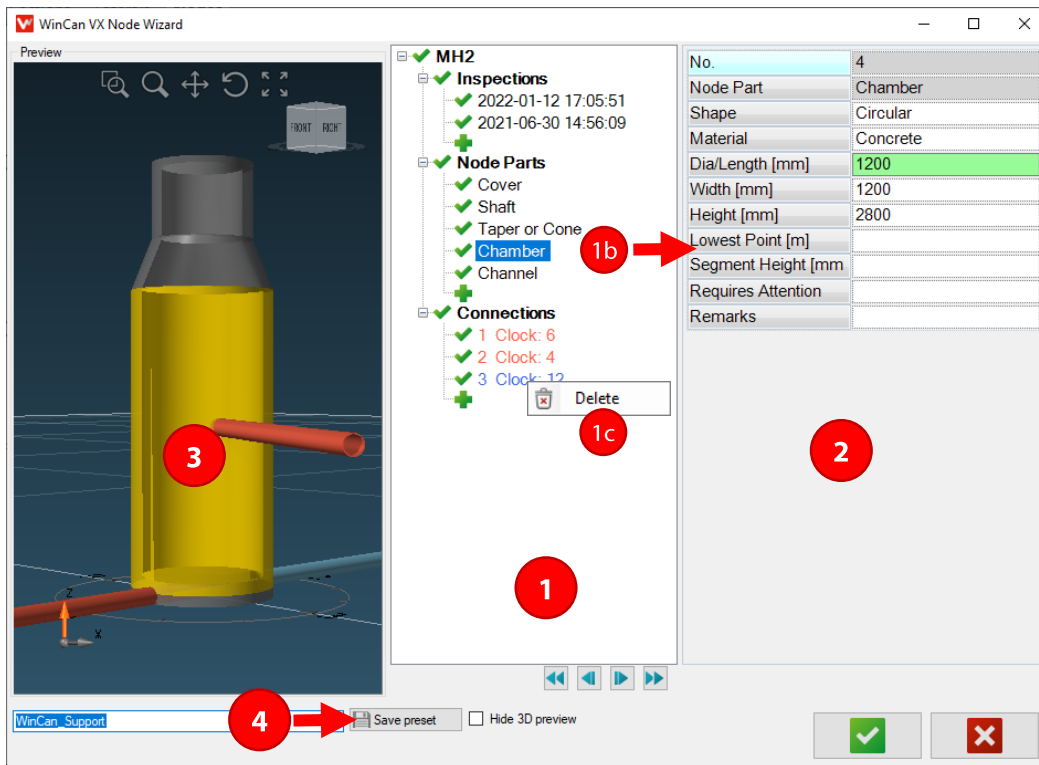
Double-click on a manhole record in the grid view to complete data entry with the *Manhole Wizard*. It provides an input mask that allows the user to create manhole parts, inlets and outlets using the 3D-graph as a data entry guideline. The user thus can easily keep the overview to the data he entered for a specific manhole and is also able to manage and edit manhole data directly and intuitively than using the classic way via separate input panels.



The **central** part of the wizard (1) shows the data groups (inspections, manhole parts, inlets, outlets) in a vertical order. Start entering data for each group from top to bottom.

Double-click on the corresponding PLUS-icon (1a) to create new items (i.e. manhole parts). The data group *parts* shows a list of all available manhole parts in a separate dialogue box, so you can select all required parts at once in case of complex manhole structures.

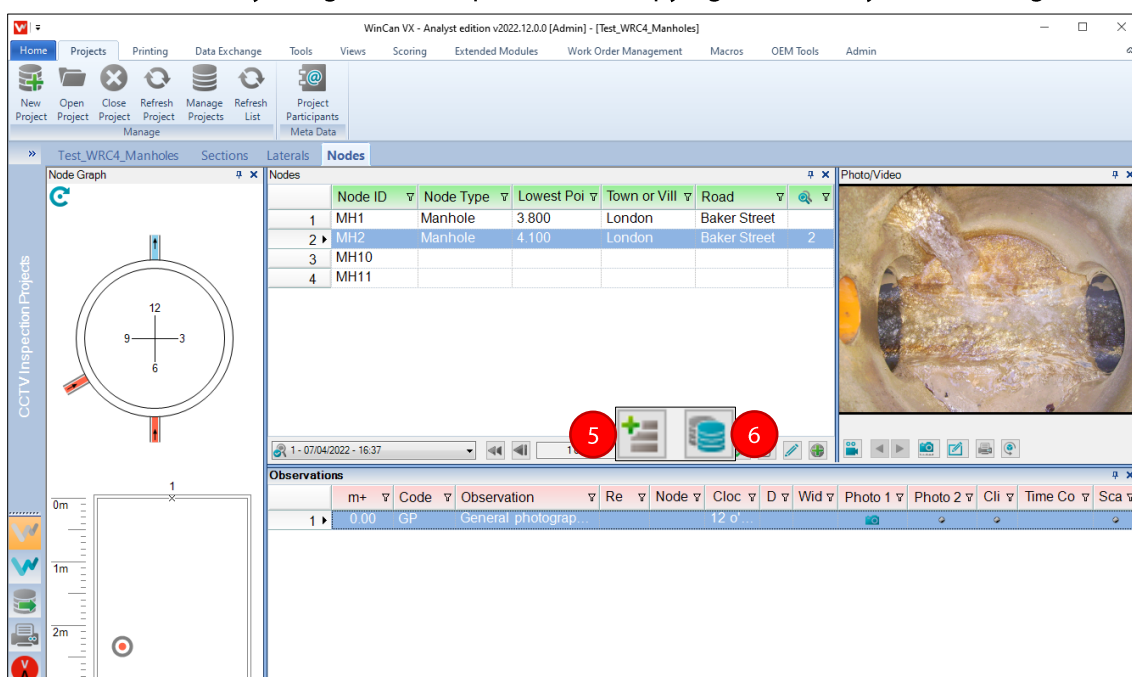
Click on an existing item within a data group to open the corresponding input mask (1b) or delete an item via the corresponding context menu command (1c). In addition you may move upward or downward any manhole part via *Drag &Drop*:



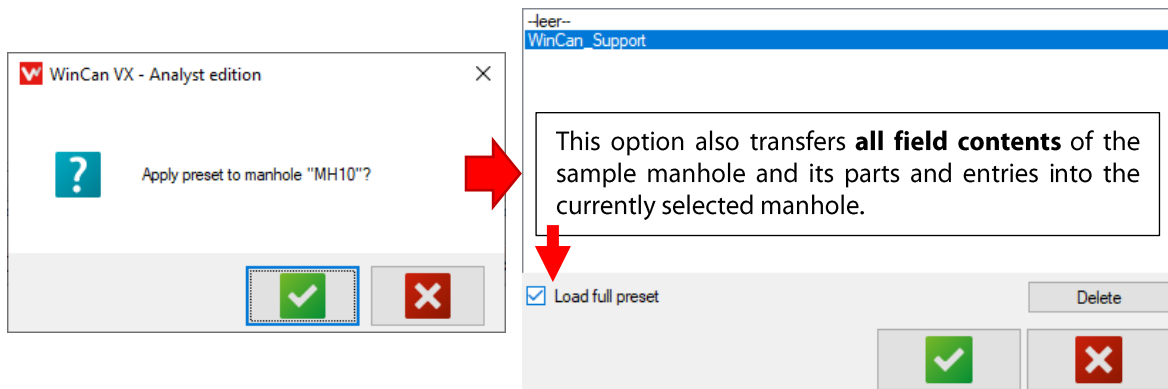
The **right** part of the wizard (2) shows the input mask which is always linked to the currently selected item.

The 3D-view in the **left** part of the wizard (3) is visualizing the manhole structure, as soon as you have typed the dimensions to the first manhole part (cover, cone, chamber).

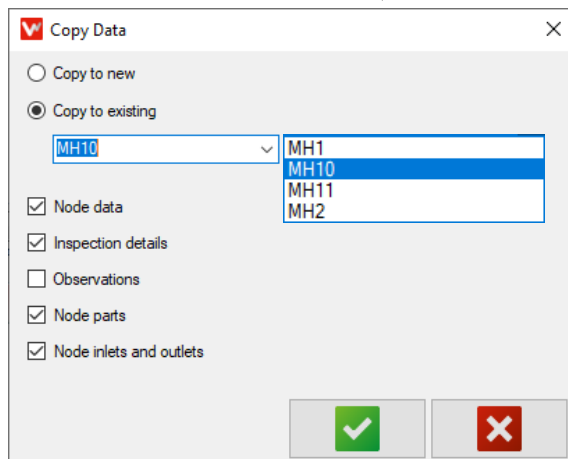
If you realize that the bulk of the manholes to be inspected inside the current project are equal or similar regarding their structure and dimension, you may save the whole information about a selected sample manhole as a preset (4) named accordingly. Data entry for new manholes thus can be done fast and easy using either this preset (5) or copying data directly from existing manholes (6):



Highlight the desired manhole and click on the button *Apply preset* (5). Confirming the messages with the green OK-buttons in the dialogue boxes below will then copy the data to the currently selected manhole as defined in the preset (e.g. *WinCan\_Support*).



On the other hand you can highlight a manhole and transfer its data directly into a new or an existing manhole using the button *Copy data* (6):



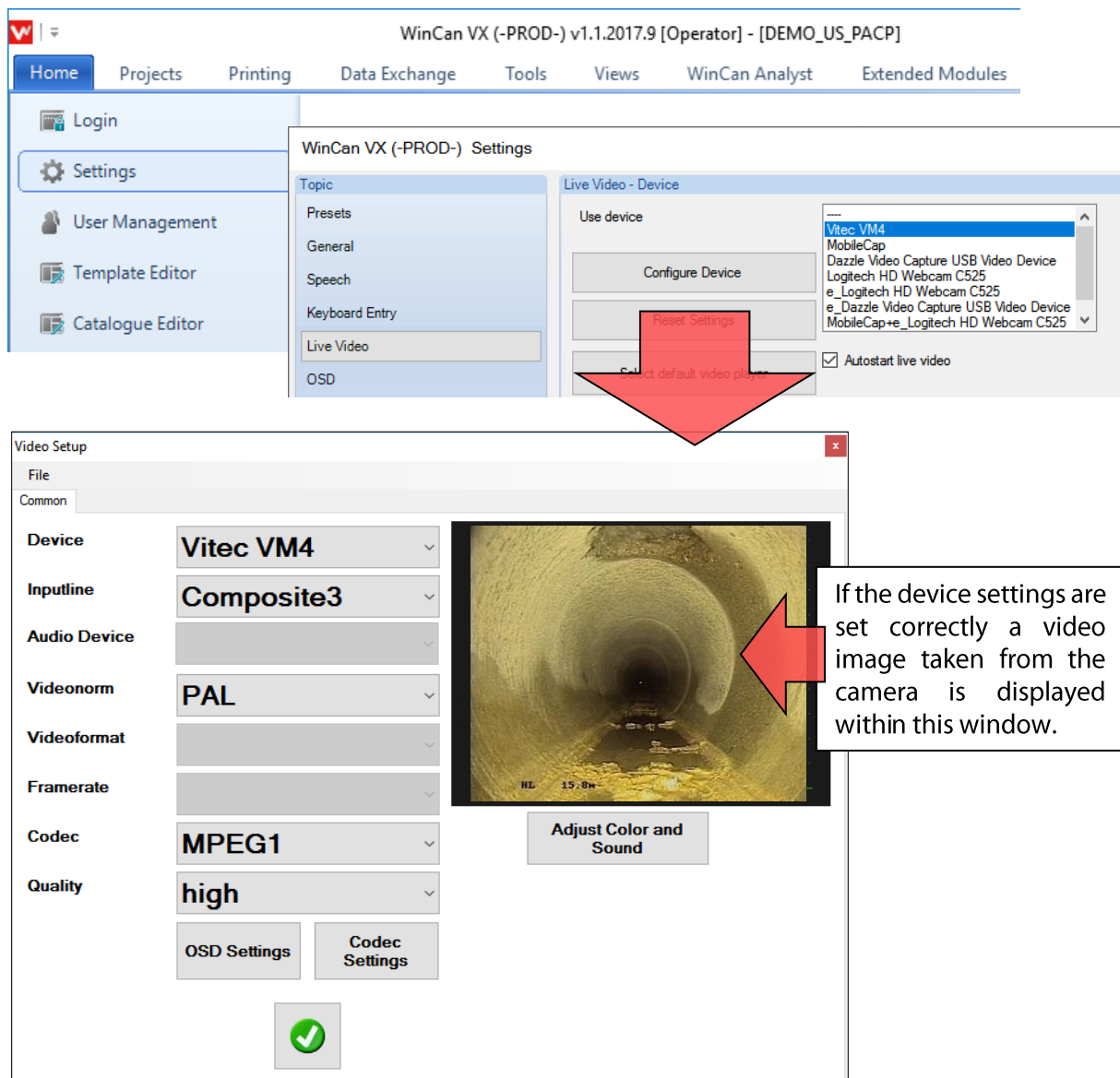
Confirm the data transfer at last hitting the green OK-button.

## 13 Video Digitization

The recording/digitizing of a video signal is done either via an internal (PCI/PCI-Express card from the company VITEC (1)) or an external MPEG video card (Sensoray 2253) from the company Sensoray (2). Also WDM-based digitizing cards (e.g. DFG/USB2pro (3)) available on the free market are supported.



The video signal can be taken from a TV camera, a video recorder any video feed signal. The video capture device can be selected in the dialogue box under *Home > Settings > LiveVideo*. A click on the button *Configure Device* is opening another dialogue box providing all the options to activate the camera signal:



See **section 5.5** for detailed description.

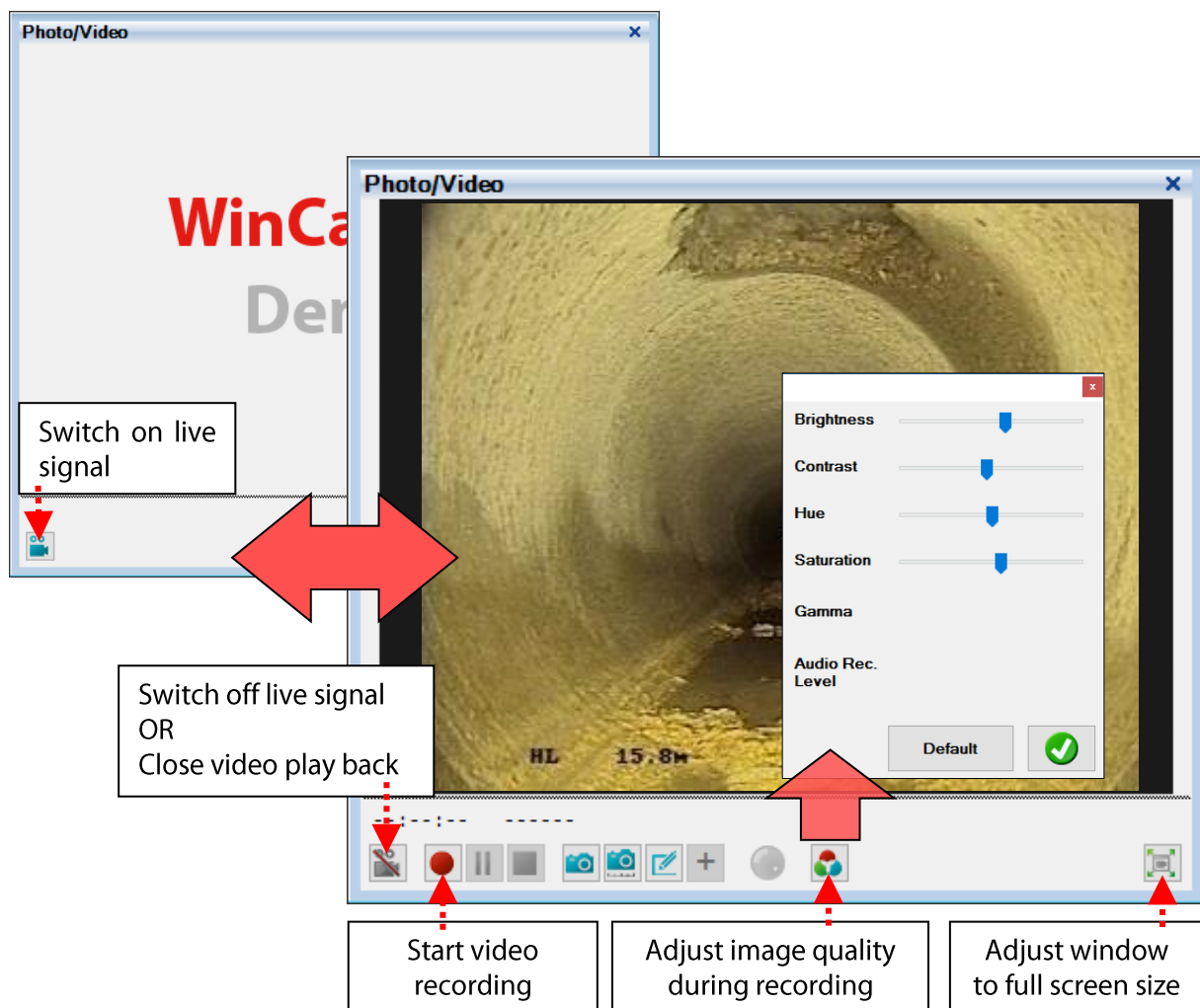
## 14 Photo/Video Panel

After the first launch of WinCan VX the video window is located in the upper right corner of the main screen. You may grab this window at the title bar, move it wherever you prefer and also enlarge it accordingly on a second screen. When the TV-camera is switched off the WinCan logo is shown within this window by default. The video window supports three different operational modes:

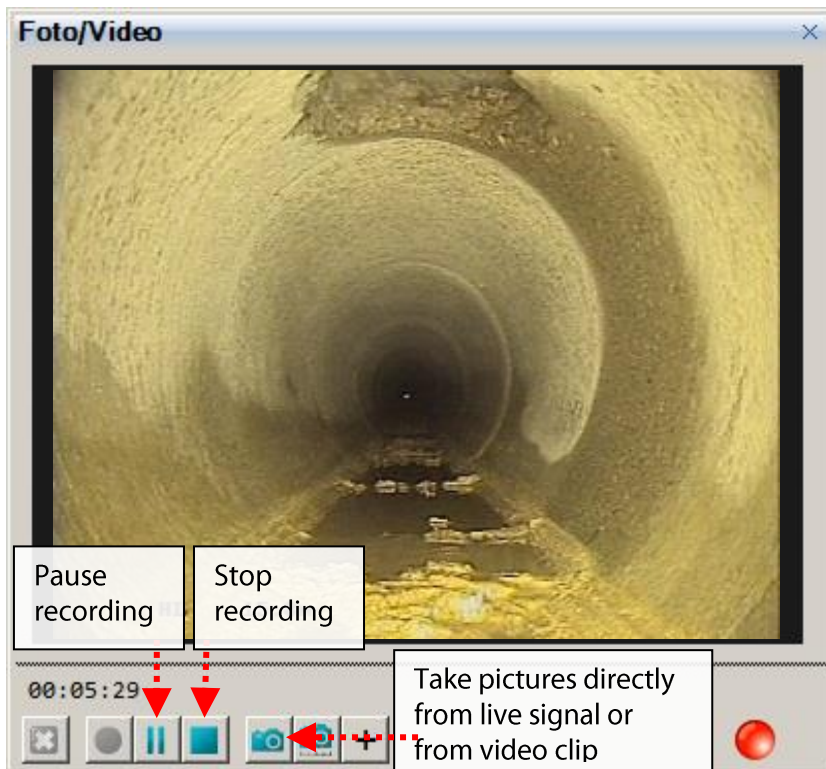
- **Recording mode:** Displaying and recording of a **live signal** transmitted by a TV camera.
- **Clip playback mode:** Playback of **video clips** recorded via a TV camera. If recorded via external systems (e.g. camera systems with integrated video digitization or external digital video recording systems connected to a TV camera) and finally **imported** into WinCan VX, the software producer can NOT give any guarantee that those video clips will be able to be played back without any error or quality loss.
- **Photo display mode:** Display of **photos** taken directly with the TV-camera connected to the PC. Pictures taken with a commercial pocket camera can easily be imported too.

### 14.1 Recording and Play Back of Video Clips

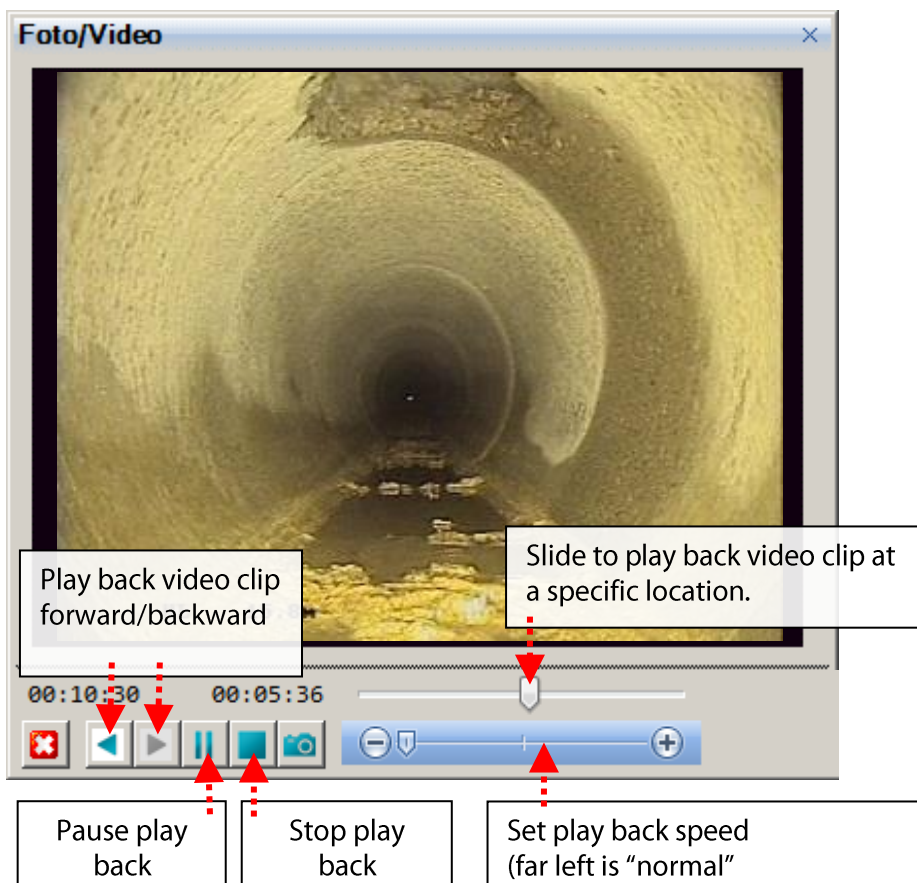
There's usually one recorded video clip per pipe section to visualize the damage profile of the current section. Switch on the live signal and then click on the red dot to start recording as described below:



During the observation entry within the catalogue panel recording is AUTOMATICALLY paused and also resumed AUTOMATICALLY after confirming the code. Before you start recording check whether the corresponding **option** in *Home > Settings > General* is **activated**.



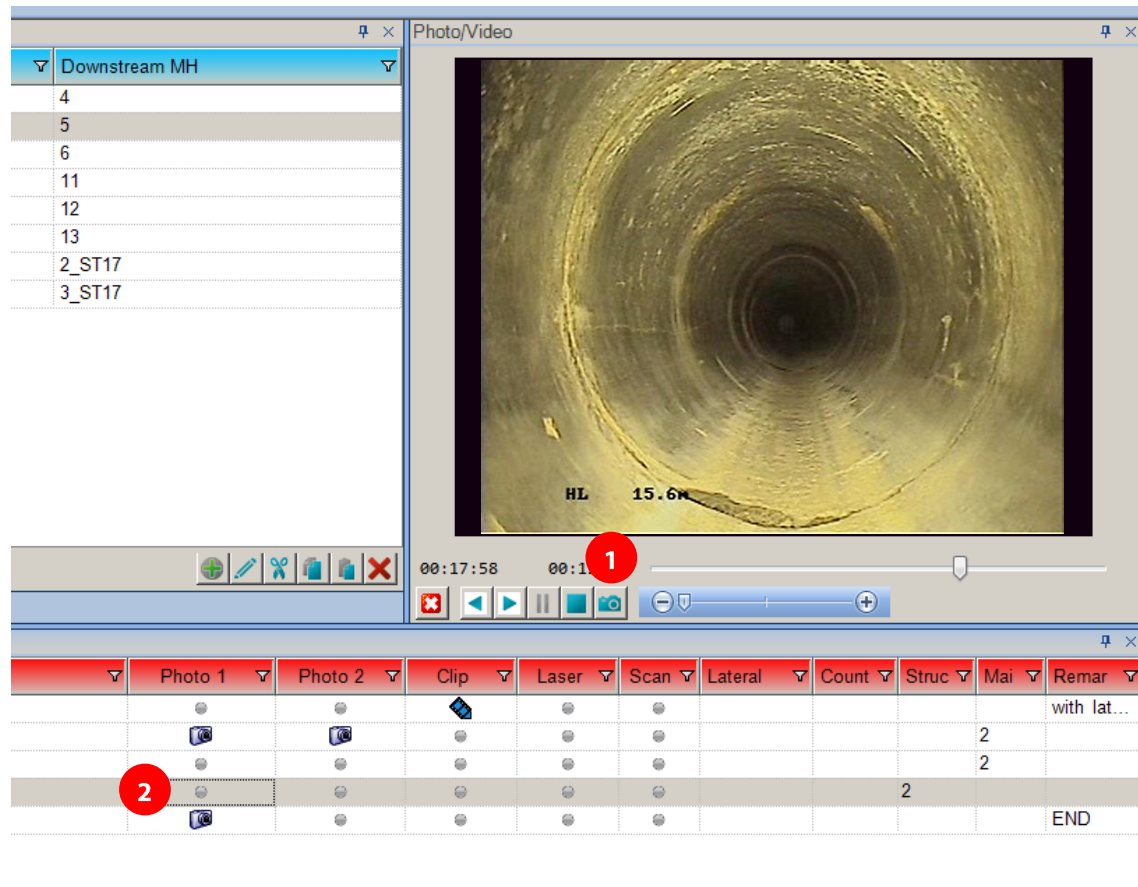
The videos are saved immediately in the project sub-folder *video* and linked to the first observation by default. A double-click on the film-strip icon in the *Clip* column starts playing back the recorded video clip:



## 14.2 Taking Pictures

You can take two photos per observation, either from the live signal directly, or from an existing video clip.

- Drive the camera crawler to the preferred location in the pipe OR start playing an existing video clip.
- Stop the camera OR pause the video clip at the damage point.
- Create a new observation to the current section.
- Push the photo button (1) in the video window or double-click on the grey bullet (2) in the observation columns *Photo1* and *Photo2* to take a photo of the current camera/video position:



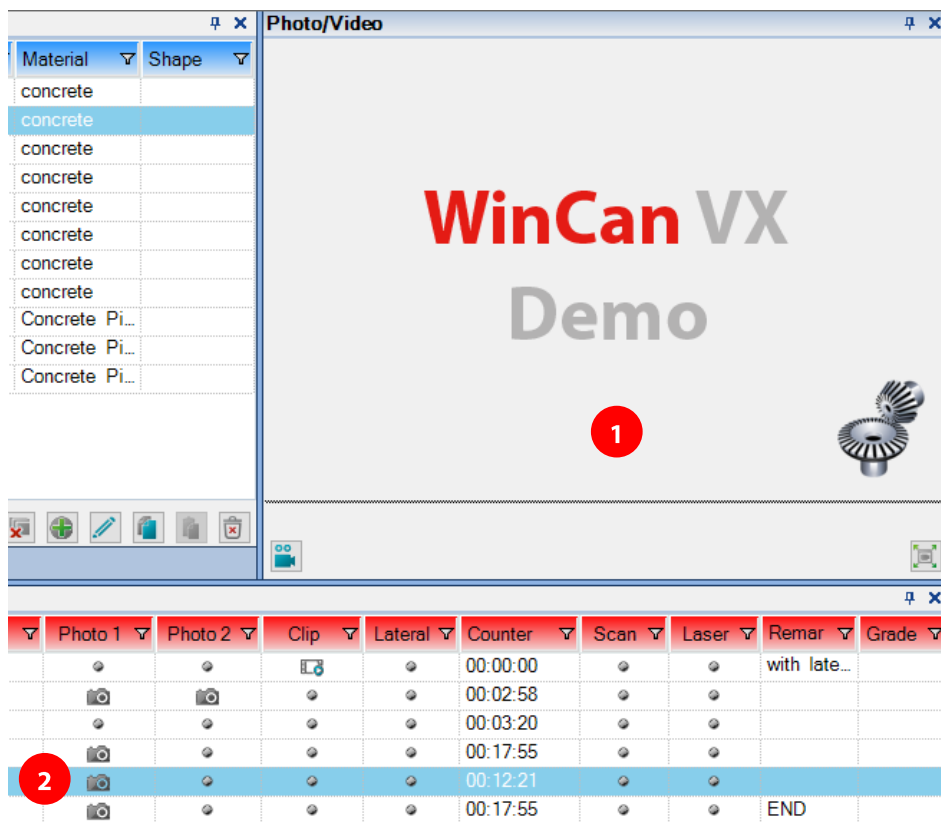
The pictures are immediately stored into the project sub-folder *Picture* and linked to the corresponding observation.

### Note on replacing existing media files:

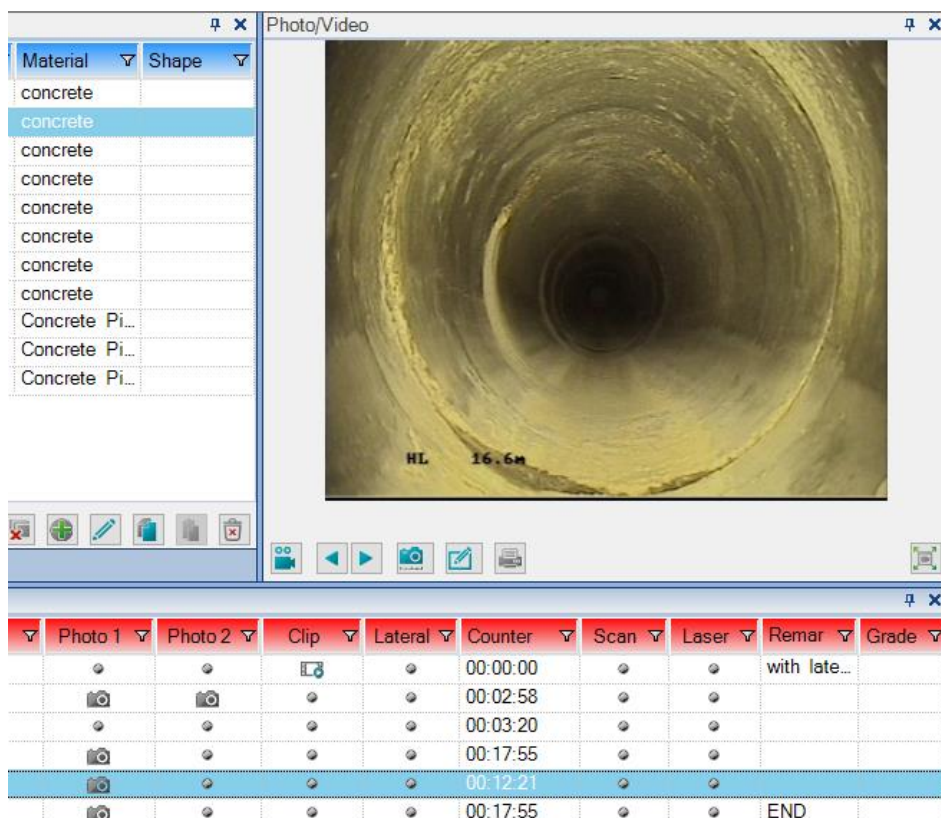
To replace existing video clips or photos directly during a running survey (i.e. the camera is switched on), just double-click on the corresponding film or photo icon and confirm the message below with YES:

### 14.3 View Pictures

To view pictures in the video window, first ensure that the live feed is turned off (1), then just double-click on the corresponding photo icon (2) in the column *photo1* or *photo2*.

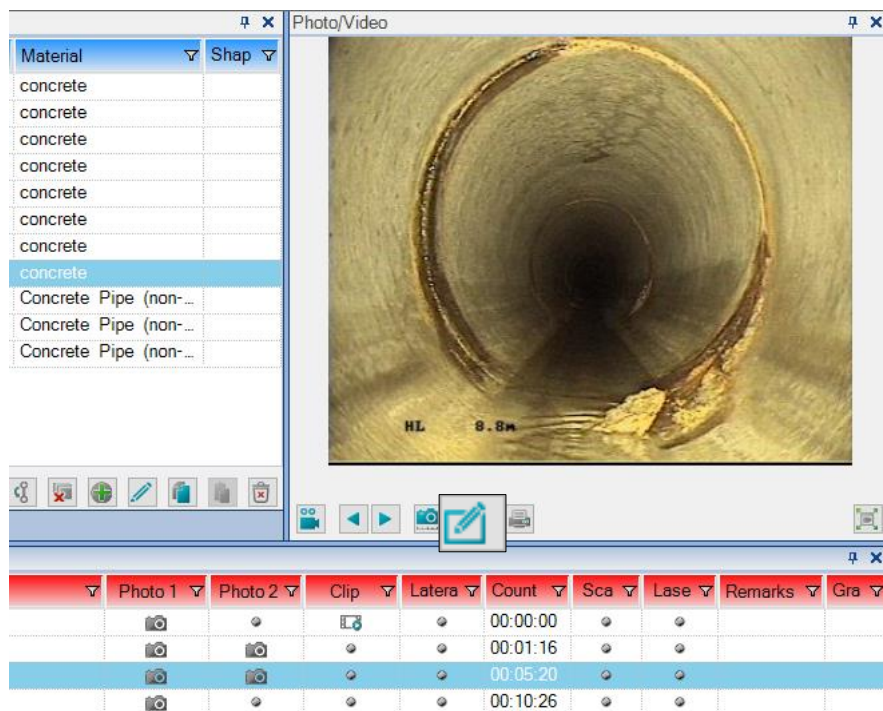


The corresponding picture is finally shown in the video window:

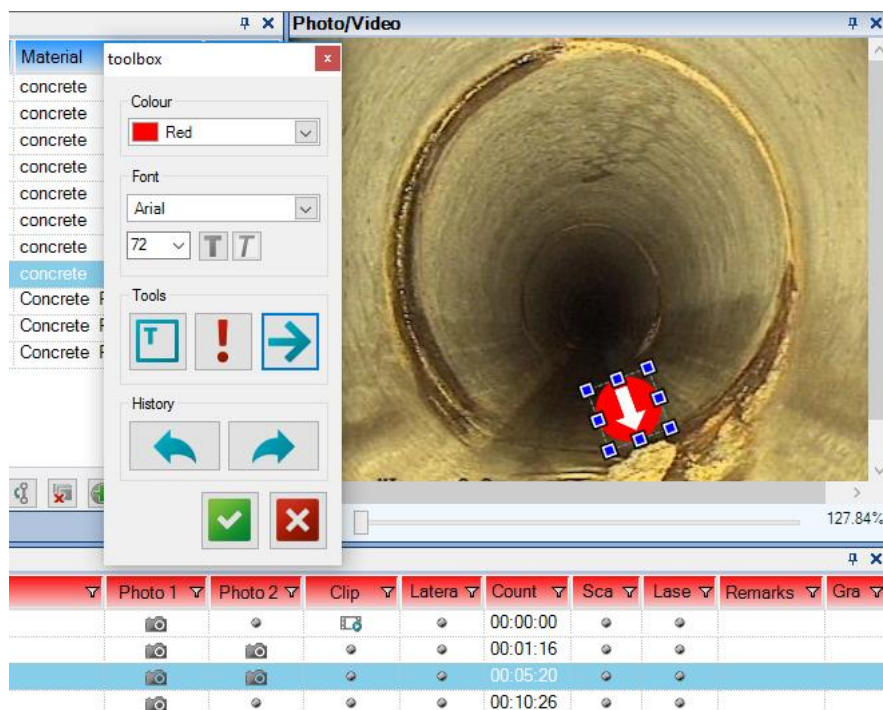


## 14.4 Mark Damage Points on Photos

Open the corresponding damage photo and click on the PENCIL icon to open the dialogue box that provides the labelling tools:



Select the appropriate label type, set its colour and drag it directly into the picture keeping the left mouse key pressed. The label can then be rotated and moved freely:



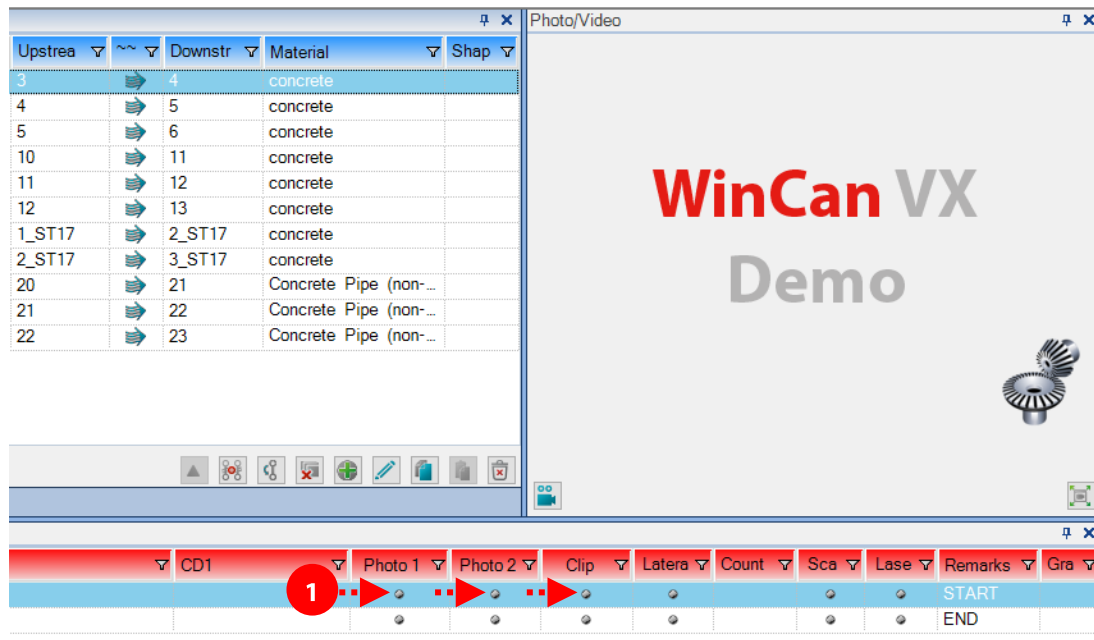
As soon as you click on the green OK-button the picture is going to be saved together with the label and automatically replaces the previous picture file.

### Note on labels:

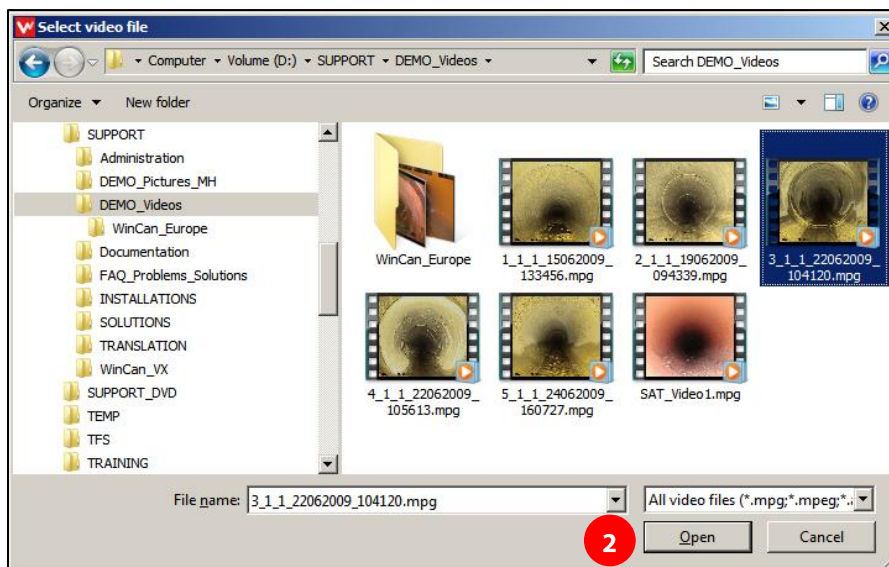
Once a label has been set and saved on the picture it can NOT be removed anymore.

## 14.5 Import video clips and photos

To add a picture or video from an external source such as a pushrod camera, pocket camera or mobile phone, first ensure the source file is attached to, or saved on the PC and also be sure that the live video feed is disabled. Then, double-click on a grey bullet in the columns *photo1*, *photo2* or *film* within an observation line and a Windows dialog box will open allowing you to navigate to and select the appropriate file:



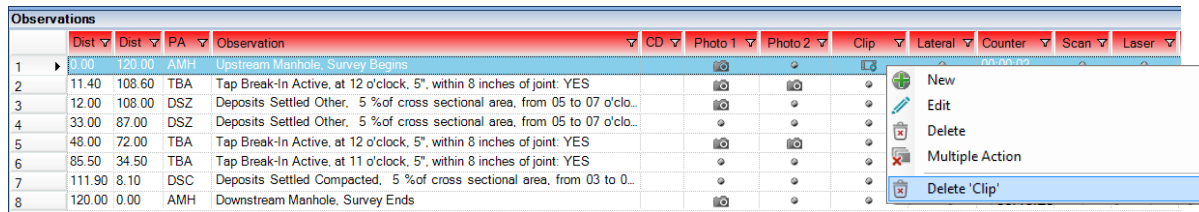
Then, double-click on a grey bullet (1) in the columns *photo1*, *photo2* or *film* within an observation line and a Windows dialog box will open allowing you to navigate to and select the appropriate file:



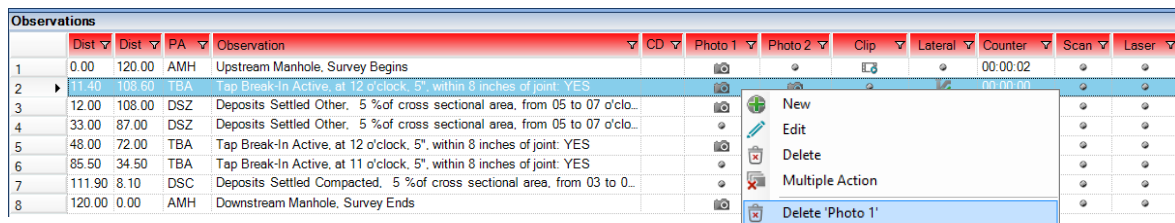
The original file in the source location or on the source device will not be altered or moved. WinCan VX will make a copy of the file to the required location in the project folder.

## 14.6 Deleting video clips and photos

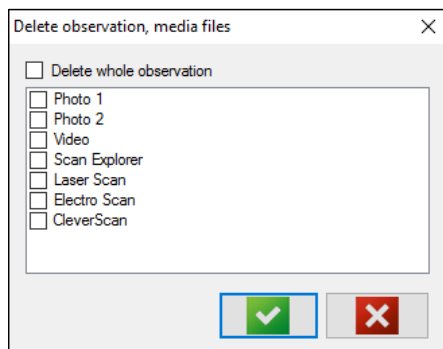
Right-click on the observation line with the **video clip** to be deleted and select the context menu command *Delete Clip*:



Right-click in the photo column and the observation line that contains the **pictures** to be deleted and select the context menu command *Delete Photo1* or *Delete Photo2*:



Further deletion options are available by hitting the command *Delete* which will bring up this dialog window where the user can select either the whole observation or a selection of parts from it for deletion:



### Note on picture deletion:

This process will NOT delete ANY video clip or photos from the hard disk. Deleted media files instead are automatically moved into in the corresponding project sub-folder *\Trash\Video\Sec* (for section clips), *\Trash\Video\Node* (for manhole clips), *\Trash\Picture\Sec* (for section photos) or *\Trash\Picture\Node* (for manhole photos).

## 14.7 Renaming Media Files

WinCan VX creates unique file names in the background for every video clip recorded and every photo taken. However, all the media file names contain a part that is customized at the beginning of the name with the *section* or *start node* ID, thereby retaining the unique file index required by the operating system while still making the file easy to locate.

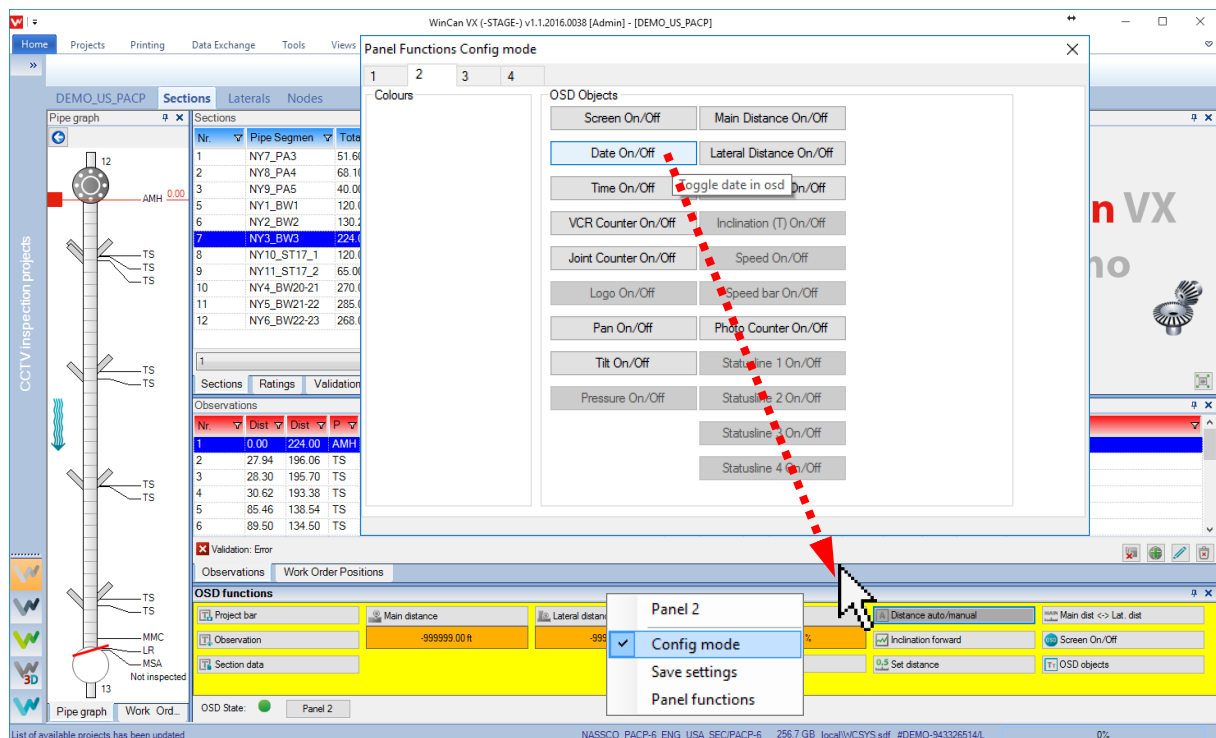
## 15 Controlling On-Screen-Display (OSD)

All prerequisites and settings needed for proper OSD control via WinCanVX are described in detail **in section 4.3**. This section on the other hand is going to describe how the operator is able to control the text display directly from WinCanVX during recording using a set of buttons located in the OSD panel.

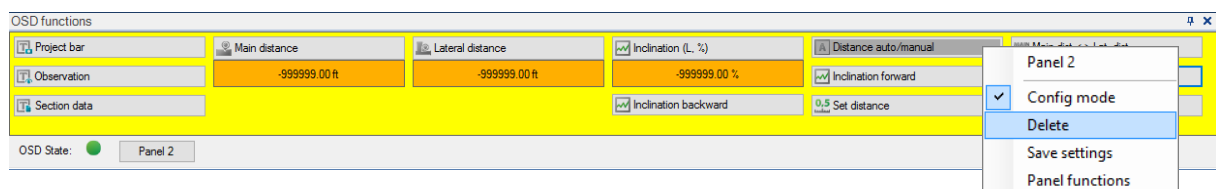
### 15.1 Configuration of the OSD panel

The OSD panel, usually displayed at the lower edge of the WinCanVX main screen, already contains a default set of control buttons which can be customized at any time.

Click with the right mouse button in an empty area of this panel to activate the *configuration mode*: the background colour of the panel then switches from GREY to YELLOW and a dialogue box is popping up showing you all the control buttons supported by the currently connected OSD device. The buttons can easily be dragged into the OSD bar keeping the left mouse key pressed:

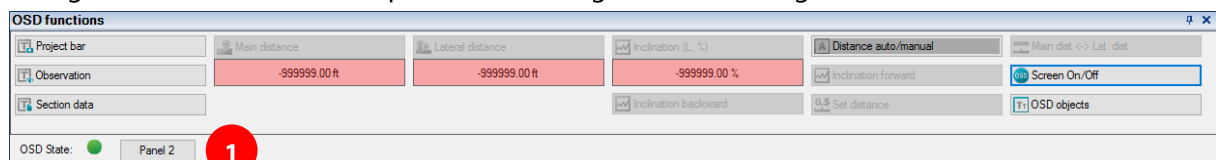


Select the context menu command *Save Settings* to save the layout of the control buttons in the OSD bar...

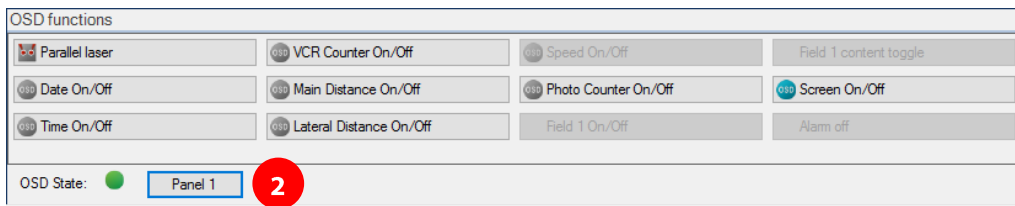


... or re-activate the configuration mode to *delete* any unneeded control button from the OSD panel using the corresponding context menu command.

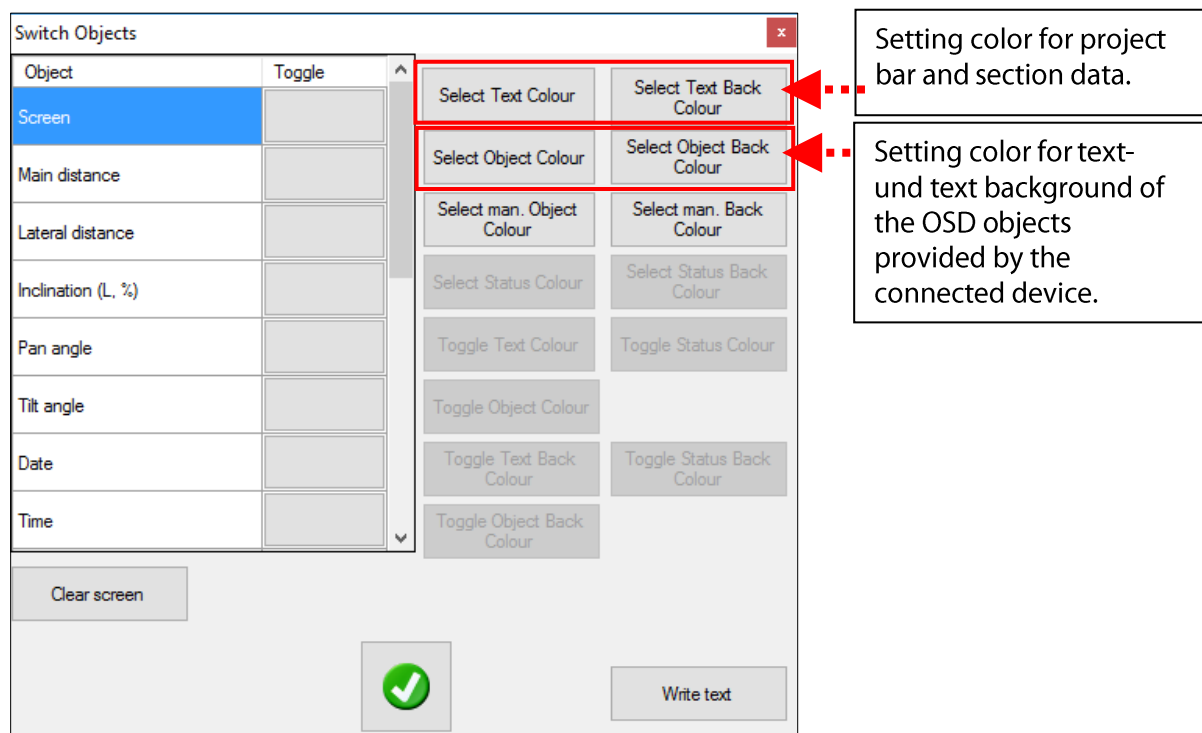
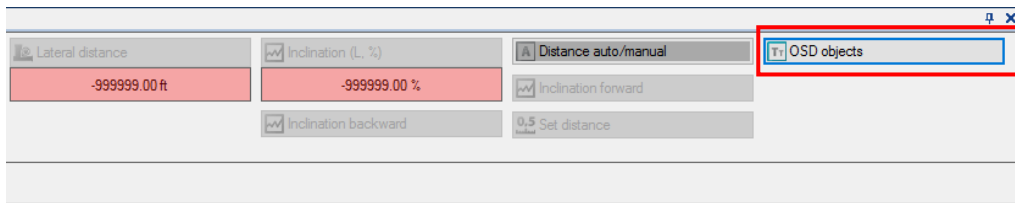
Deactivate the configuration mode via the corresponding context menu command and the background colour of the OSD panel is switching back to GREY again:



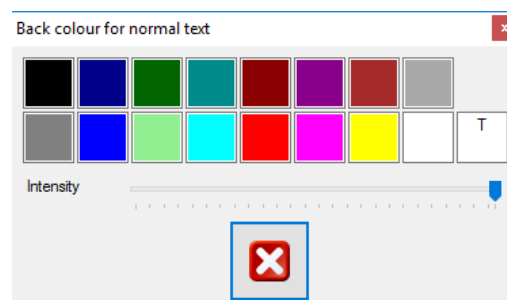
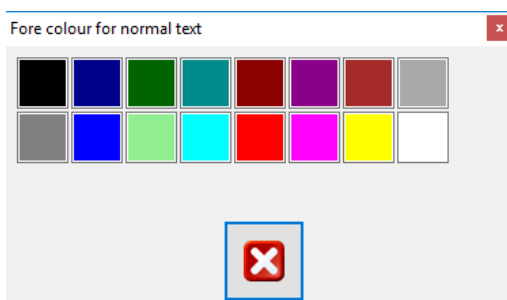
The buttons *Panel2* (1) and *Panel1* (2) respectively allow the user to toggle between two default sets of control buttons within the OSD panel:



Colors for text and text background must be defined via the button *OSD-Objects* that gives access to an additional dialogue box which finally contains the function buttons needed.



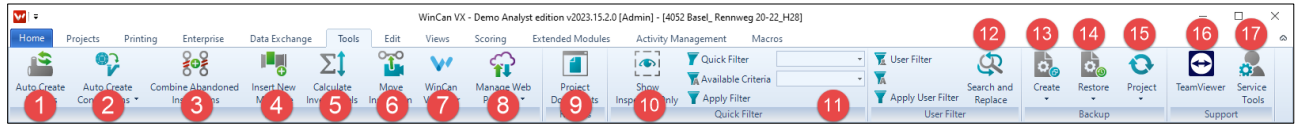
Click on the highlighted buttons above to open another dialogue box that finally allows to choose the preferred color from a palette:



## 16 General Program and Project Management Tools

Besides the basic features that have been described in the previous chapters, WinCan VX provides a couple of additional project and database edition tools which are located under the tabs *Tools* and *Edit*. The following pages give a short description for each command button.

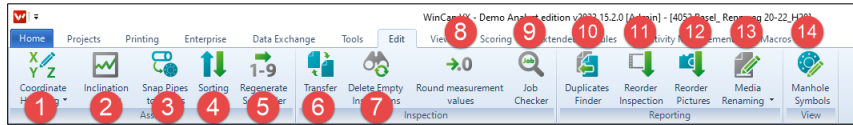
The descriptions of frequently used commands are marked in bold letters



1. Detect OP-Codes for laterals and create a lateral which is linked to the section at the corresponding position.
2. Create a lateral for each manhole entry (inlet and outlet)
3. **Merge two abandoned inspections for the same section into one single inspection**
4. Insert a new manhole into an existing section and split it into two separate sections
5. Calculate the altitude of the manhole bottom above sea level (important for WinCan 3D)
6. Attach an inspection of a specific section to another section
7. Run the tool WinCan Validator to check the validity of your project data: the validator lists all errors / conflicts the user must resolve prior to a data export.
8. **Upload projects to your workspace on the WinCan Web CLOUD and manage project uploads**
9. **Attach documents (PDF, JPEG, PNG) to the current project. The corresponding files will automatically be copied into the project sub-folder *Misc\Docu*.**
10. **Show all inspected sections (that contain at least one observation).**
11. **Filter tools. See next chapters for more details**
12. **Search/Replace command. See next chapters for more details**
13. Create a backup of the current program settings. The backup file will automatically be saved into the folder *C:\Users\PublicDocuments\VXBackup*.
14. Restore program settings based on an existing backup file (e.g. after reinstallation of WinCan VX on a new computer)
15. Create a backup copy of the current project.
16. **Launch a TeamViewer session for quick trouble shooting via remote access to your computer by a support team member.**
17. Get direct access to important system directories as well as to diagnosis tools (e.g. *DebugMonitor*) in order to get specific error log files.

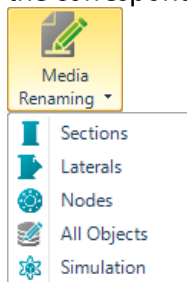
## 17 Database Edition Tools

The descriptions of frequently used commands are marked in bold letters



1. Clear existing object coordinates for sections and laterals (i.e. start and end point coordinates). When reopening Map the missing coordinate values are recalculated from the corresponding node coordinates (important for Map and WinCan 3D)
2. Recalculate or export inclination data of the current section
3. Link sections to the corresponding upstream/downstream manholes without any gap in between (important for WinCan 3D).
4. **Sort sections in ascending or descending order and re-initialize the sort order number. See next chapters for more details.**
5. Re-initialize the sort order numbers without sorting the records.
6. Transfer section or manhole data from the previous into the current record.
7. Run a search over all sections inside the current project, find empty inspections (without observations) and delete them.
8. Delete unnecessary decimal places in certain value fields
9. Assign a section inspection to the desired job
10. Find duplicated records in the current project, especially after merging several source projects into a target project. Sections with the same section name and the same upstream/downstream manhole names are recognized as duplicates and can be deleted. Always create a backup copy of your project before you run this command!
11. Run a search over all sections inside the current project and sort multiple inspections in descending order by the corresponding inspection date.
12. [Command used by Austrian customers only.](#)
13. **Rename video and photo file names using either country specific templates or customized field combinations.**

Hit this command button in order to apply a selected media naming template step by step to the corresponding object group (i.e. section, laterals or manholes) or to all objects at once.



If the previously defined field combination does not generate unique file names, some video clips and photos will not be renamed and thus not overwritten.

Simply modify the media name template accordingly under *Home > Settings > Media Renaming* and run the renaming procedure again.

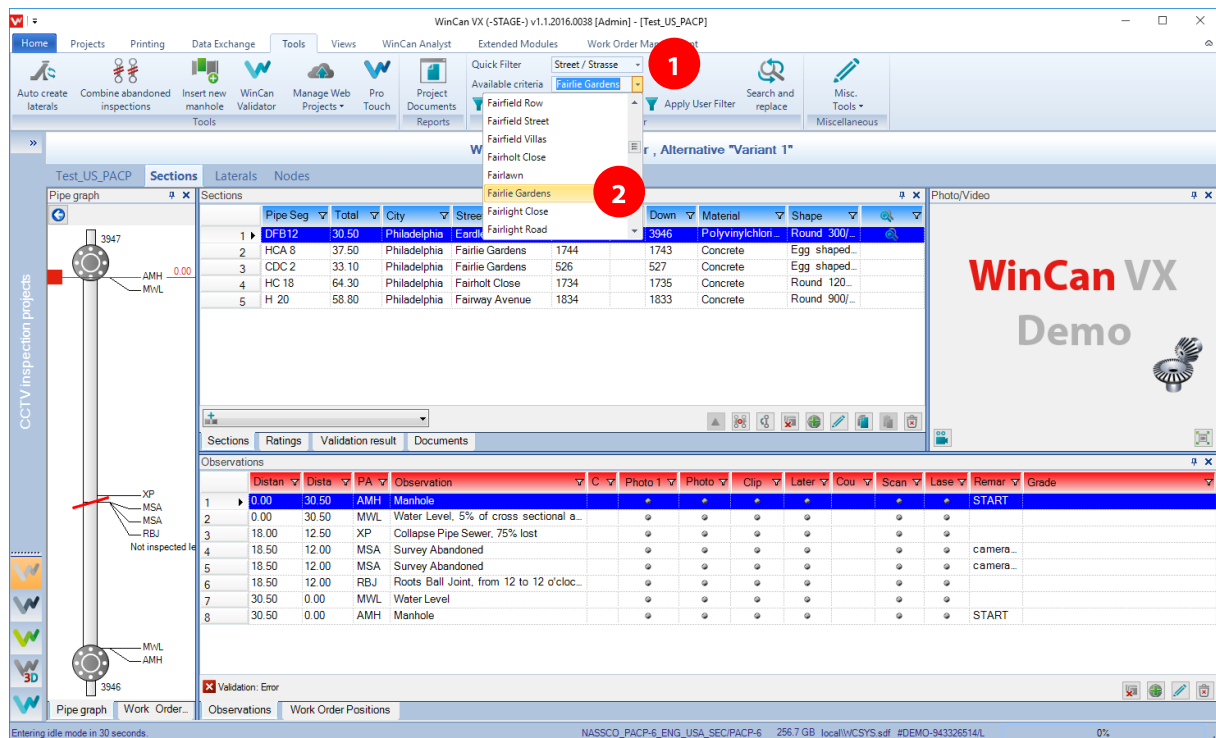
14. Open the dialogue box to customize the default symbols for manholes or connection points on the inspection report page: assign the same text to the desired icon, that you already typed into the upstream and downstream field of the section data input mask.

## 18 Filtering records

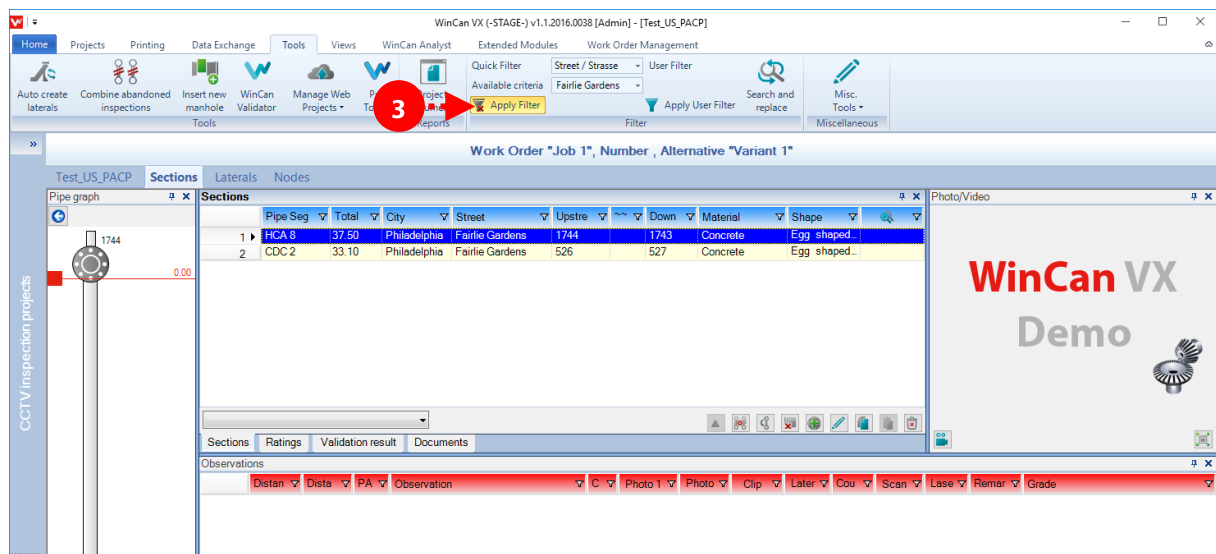
If the current project contains a large data amount you can easily detect the desired objects applying the filter functionalities provided by WinCan VX. You may either use the **AutoFilter** (Quick Filter) to run a quick search on the project database or the **extended filter** (User Filter) to define more complex filter criteria.

### 18.1 AutoFilter (QuickFilter)

The **AutoFilter** works with a list of pre-defined columns, containing a list of available criteria based on text you entered before (2). Once you click on the icon *Apply Filter*, the database is filtered and shows all records (highlighted in yellow) that match the criteria selected directly from the list.

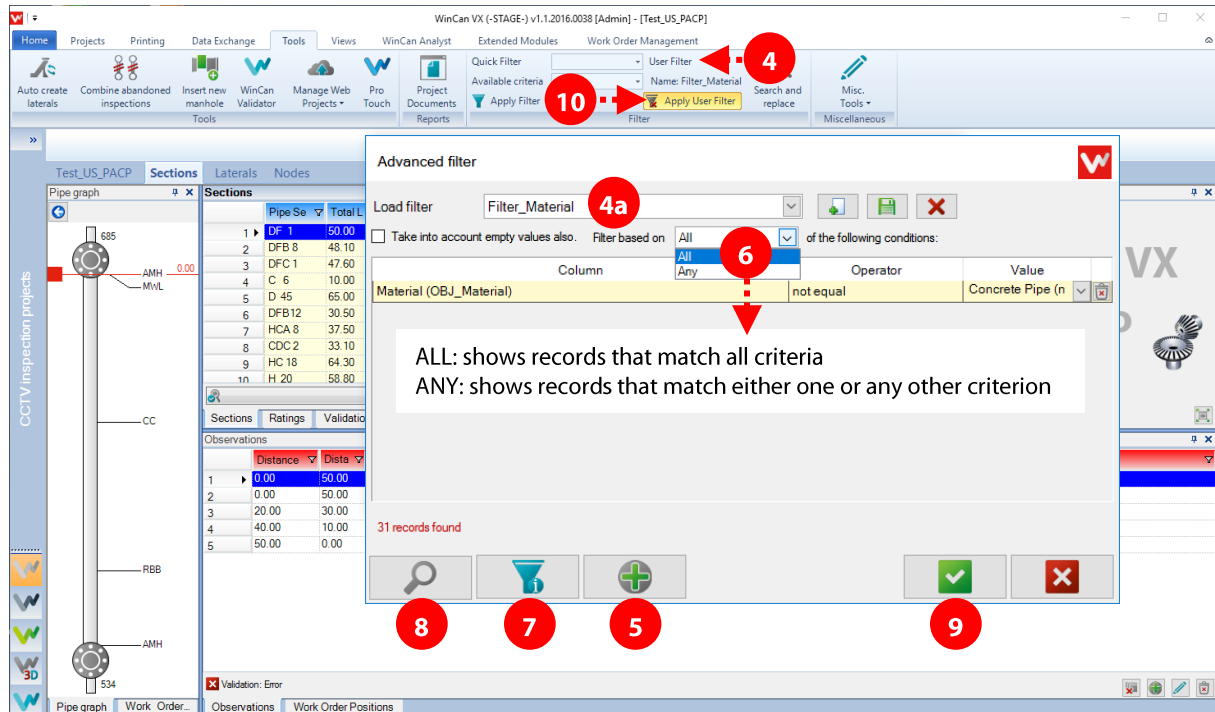


Click again on the highlighted filter button to quit the filter mode and to re-display all the records:



## 18.2 Extended Filter (UserFilter)

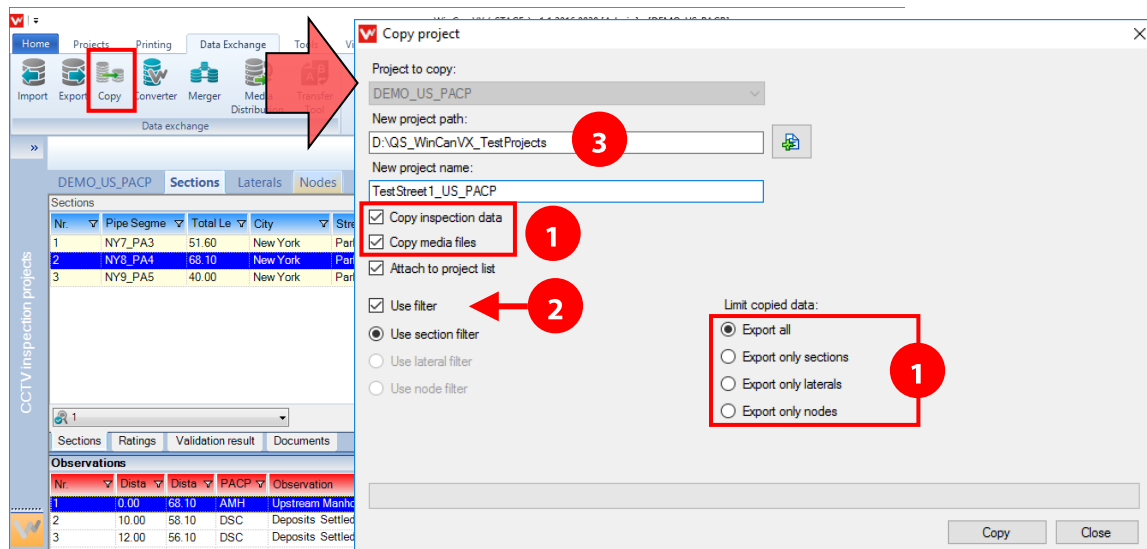
The **extended filter** (4) on the other hand enables the user to link different criteria together and to query the project database in a more sophisticated way. The query always must be saved with a specific name (4a) before defining the criteria. Always hit the PLUS-button (5) to add additional criteria.




Hitting the filter button (7) is displaying the number of records within the filter dialogue that match the criteria (6). Next push the magnifier button (8) to run the filter query and click on the green tick button (9) to confirm it. The filter result is finally displayed in the overview panel. Click again on the highlighted filter button (10) to quit the filter mode and to re-display all records.

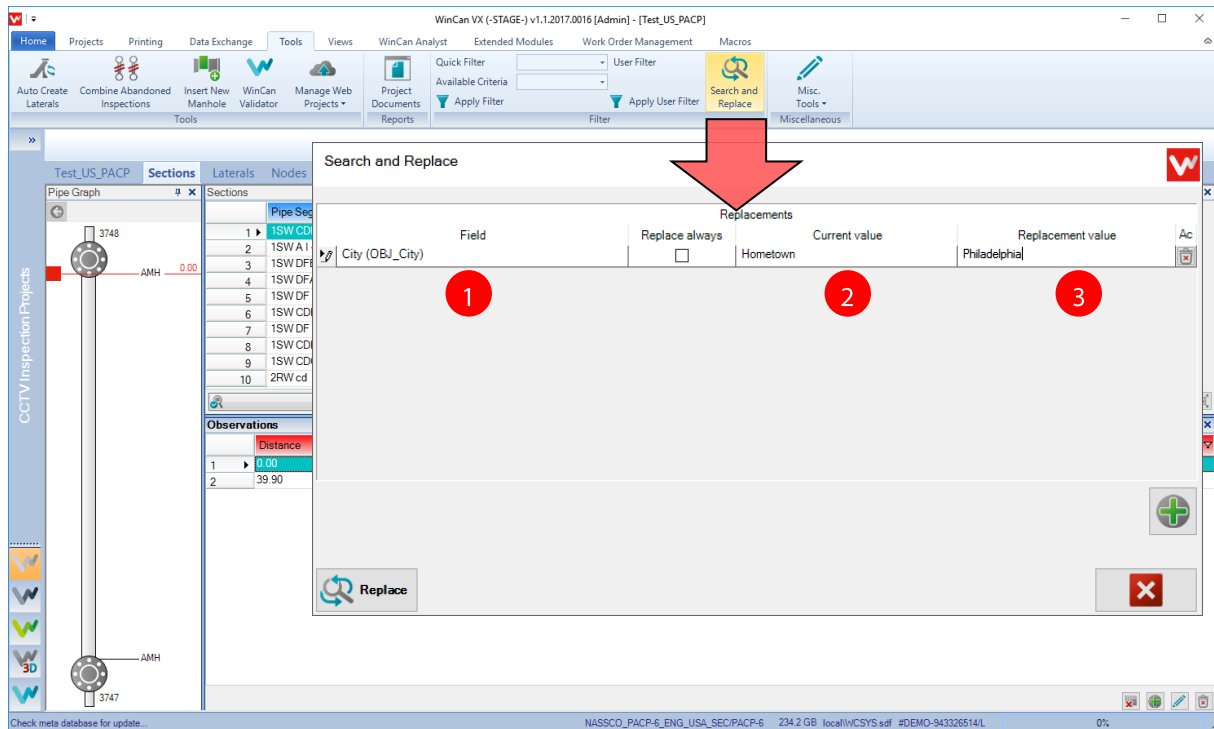
## 18.3 Exporting Filtered Data

The tab command *Data Exchange > Project Export* is going to copy the current filter result into a new project, which is automatically created in the background. The user hereby gets the possibility to limit the copy process to certain object categories or data types (1). If the option *UseFilter* is switched off (2) the whole project will be copied to the target folder (3):



## 19 Searching for and replacing data entries


In order to be able to correct database entries, WinCan provides a search/replace functionality. First select the field(s) (1) containing the entries to be replaced and enter the original text (2) as well as the new text (3) into the corresponding columns. You may also imply more than one field per searching/replacing process using the button . Finally hit the REPLACE button to run the command:

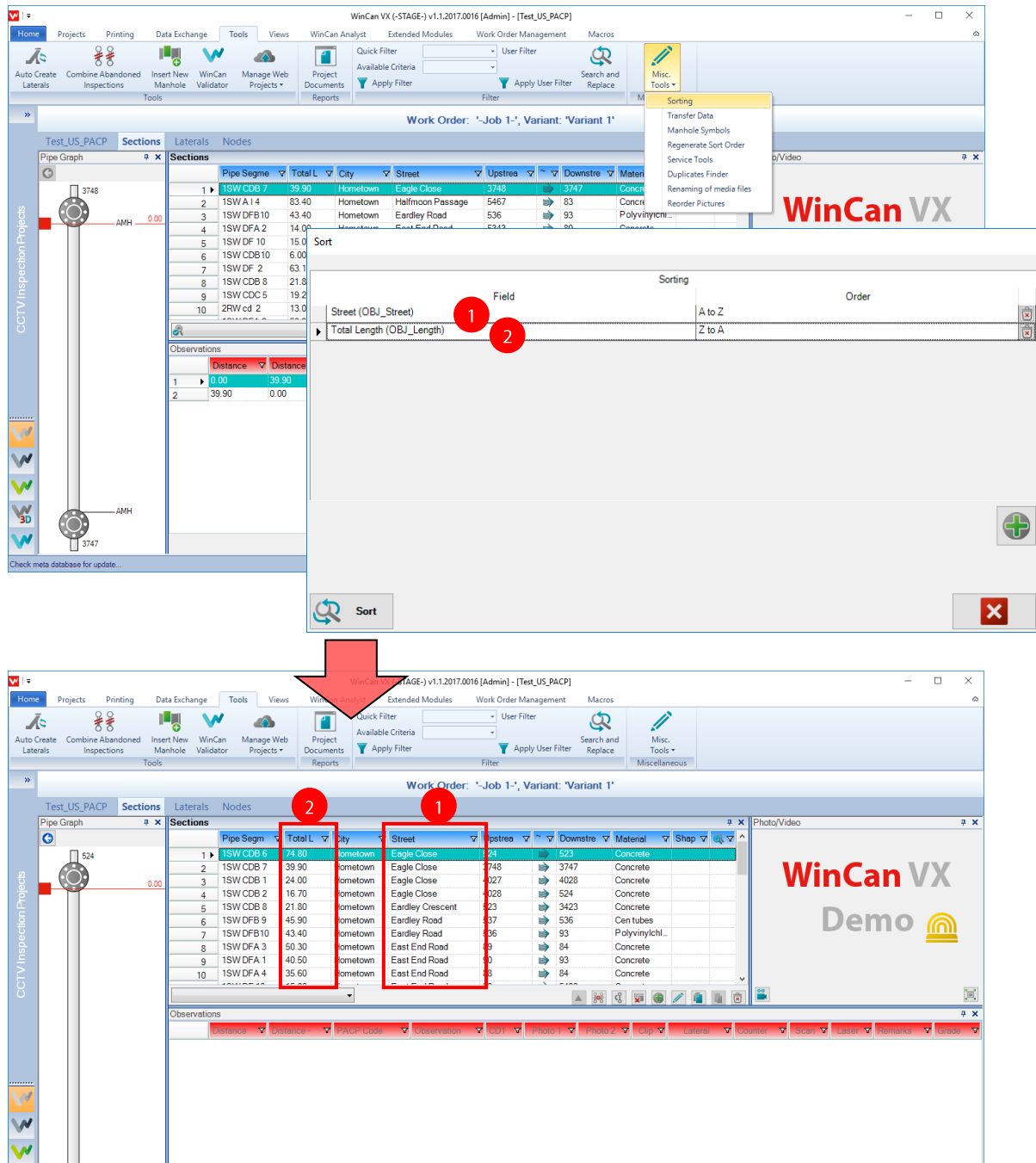


If the check box *Replace always* is enabled, WinCan VX is going to overwrite the old text with the new text for **all** records. It therefore recommended to keep this option **disabled** per default.

In case you want to replace certain field contents only within a specific group of sections, you may filter these records previously. The *Search/Replace* functionality thus is able to take into account the filtered sections only.

## 20 Sorting records

Some end users prefer the inspection reports printed in a specific order. The command *MiscTools > Sorting* provides a panel that allows the user to re-order the sections according to predefined sorting criteria which are applied hierarchically. Hitting the button  adds a new criterion. The sections in the example below are sorted first according to the field *Street* (ascending order) and second according to the field *Total Length* (descending order):



The screenshot shows the WinCan VX software interface. The 'Sorting' dialog box is open, displaying two sorting criteria: 'Street (OBJ\_Street)' and 'Total Length (OBJ\_Length)'. The 'Field' column is set to 'Street (OBJ\_Street)' and the 'Order' is 'A to Z'. The second criterion, 'Total Length (OBJ\_Length)', is set to 'Z to A'. A red arrow points from the 'Sort' button in the dialog box to the main data table in the software. The data table shows the following sections:

Pipe Segm	Total L	City	Street	Upstream	Downstream	Material	Shap
1SW CDB 6	74.80	hometown	Eagle Close	524	523	Concrete	
1SW CDB 7	39.90	hometown	Eagle Close	3748	3747	Concrete	
1SW CDB 1	24.00	hometown	Eagle Close	4027	4028	Concrete	
1SW CDB 2	16.70	hometown	Eagle Close	4028	524	Concrete	
1SW CDB 8	21.80	hometown	Eardley Crescent	323	3423	Concrete	
1SW DFB 9	45.90	hometown	Eardley Road	37	536	Cen tubes	
1SW DFB 10	43.40	hometown	Eardley Road	36	93	Polyvinylchl	
1SW DFA 3	50.30	hometown	East End Road	9	84	Concrete	
1SW DFA 1	40.50	hometown	East End Road	0	93	Concrete	
1SW DFA 4	35.60	hometown	East End Road	8	84	Concrete	

After you hit the button *Sort* in the dialogue box the sections are put into the preferred order and will also be printed accordingly.

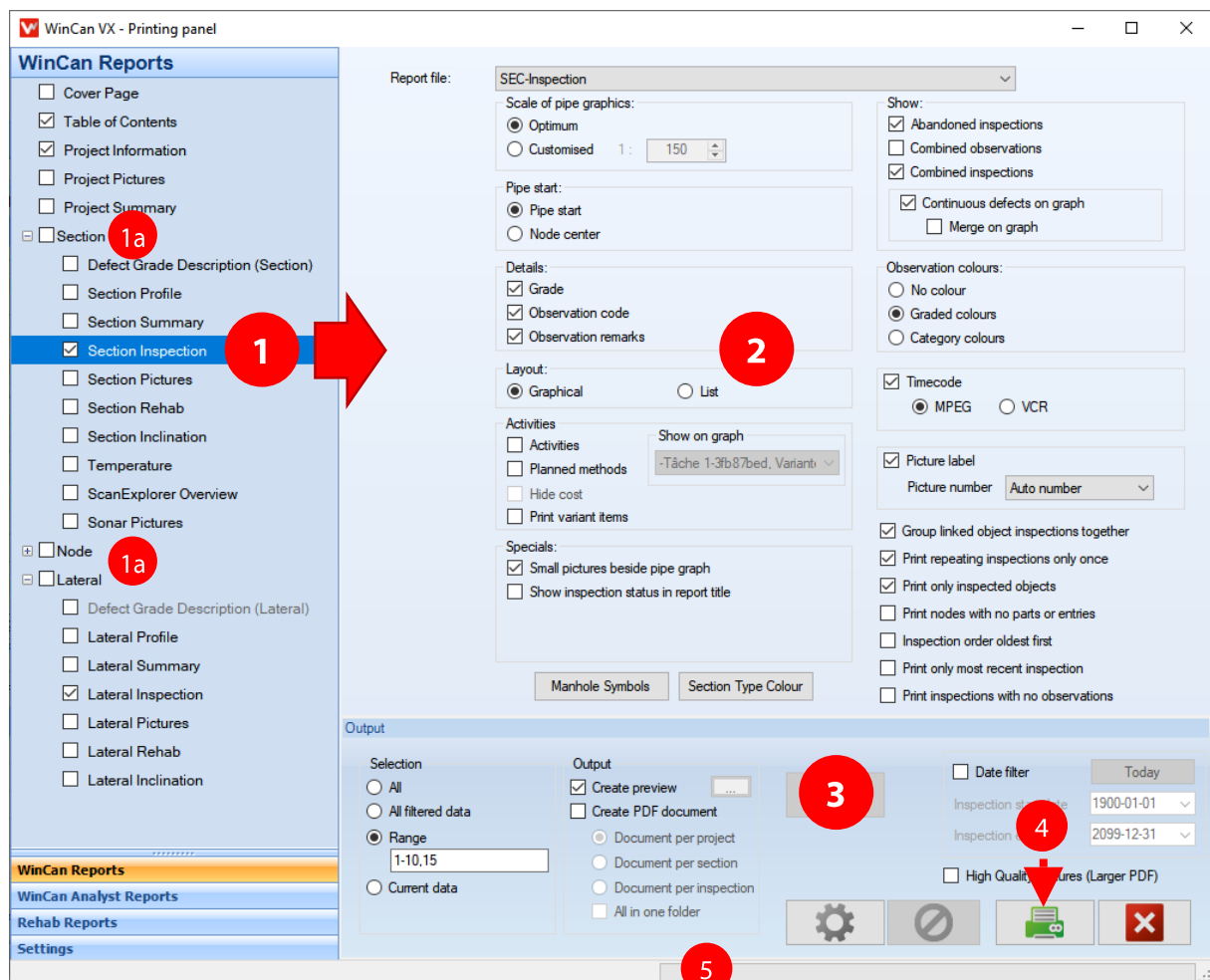
## 21 Data Output

After data entry has been completed there are four different ways that the user can publish and share the project data:

- Printing the inspection report to paper directly in the CCTV truck or the office.
- Saving and sending the inspection report as a PDF file.
- Burning/copying project data to external media (CD, DVD, HDD, USB drive) as a *Viewer* package.
- Uploading the project directly to the cloud and sending a corresponding web link to the end customer.

### 21.1 Printing Inspection Reports

Select the tab command *Printing > Printing Panel* in the WinCanVX main screen to print the current project data as you prefer. WinCan VX provides up to 26 different types of reports with their own default settings:

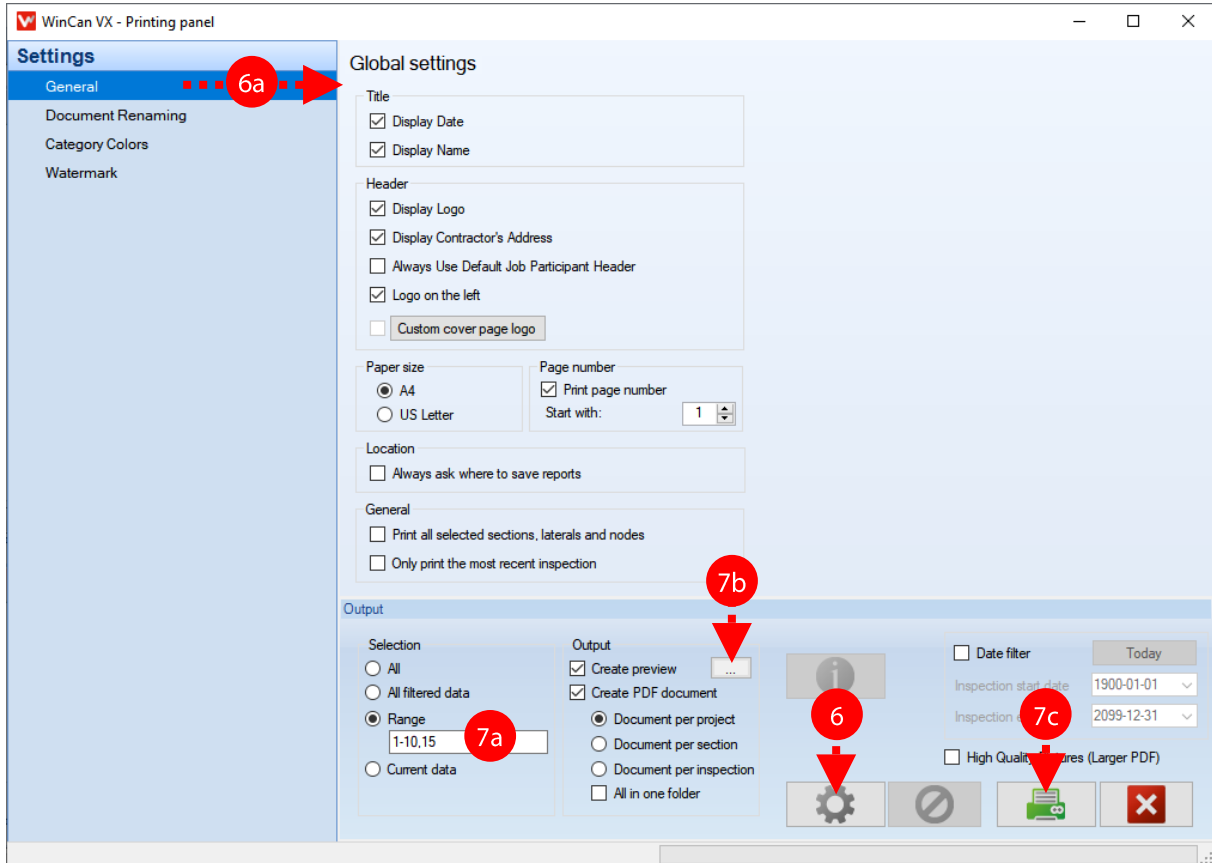


1. This part of the dialog box lists all the report types currently provided by WinCanVX: Open the corresponding **main group** (1a) for sections, manholes or laterals and select the desired reports for the print-out.
2. This area contains all printing options for the report type selected in the part 1.
3. This part provides the output options for all the enabled report pages.
4. Click the print button (4) to either get a preview of the enabled reports or to create a corresponding PDF-file. Depending on the project size, this may take several minutes and you can follow the progress in the status bar (5).

Hitting the gear icon left to the printing button (6) gets a direct access to *general* printing options (6a) which are enabled/disabled per default.

In case you want to print the inspection report on header-paper with a pre-printed logo, you must make sure that **all options** inside the option group *Header* are **disabled**.

Wide contractor logos, that may fill up the major part of the page header, appear well sized as soon as the option *Display Contractor's Address* has been **disabled**:



A group of sections or single sections can be printed once the radio button *Range* is selected: you may type "1-10" if you want to set a section group or you may type "1,5,10,15", if you want to set a number of single sections. Both spellings can also be combined as shown in the illustration above (7a).

A PDF-file is created only when pushing the printing button **after** you enabled the option *Create document > Document per project* and browsed for the desired file path (7b). Otherwise the software sets the default file path for PDF reports automatically to `\\project name\\Misc\\Docu.`

## 21.2 Printing Inspection Reports with Classification Colours

The inspection report may also be printed with coloured observation text. This requires a damage grade which has to be set in the observation table; use the predefined value list available in the field *Grade* (1) for that purpose.

Call up the printing dialogue afterwards and select the report type *Defect Grade Description* (2). Right to the legend text the user may now select a specific colour for the corresponding damage class from a color palette: the corresponding panel opens when pushing the arrow button right to the color field (3).

Always make sure the grade values are taken from the *Grade* column you prefer (4). This customized classification legend is saved automatically in the background:

The screenshot displays the WinCan VX software interface. The main window shows a project overview with a table of sections. A 'WinCan VX - Printing panel' is open, showing the 'WinCan Reports' section. The 'Defect Grade Description' report type is selected. The 'Report file' is set to 'SEC-LegendOfClassification'. The 'Grade fields' section shows a list of fields, with 'OBS\_RateValue' selected. The 'Color palette' is visible, showing a color gradient from green to red. The 'Observations' table is also visible, showing columns for 'Nr.', 'Dist', 'Dist', 'P', 'Observation', 'CD', 'Phot', 'P', 'Clip', 'La', 'Cou', 'Sca', 'Las', 'Remark', and 'Grade'.

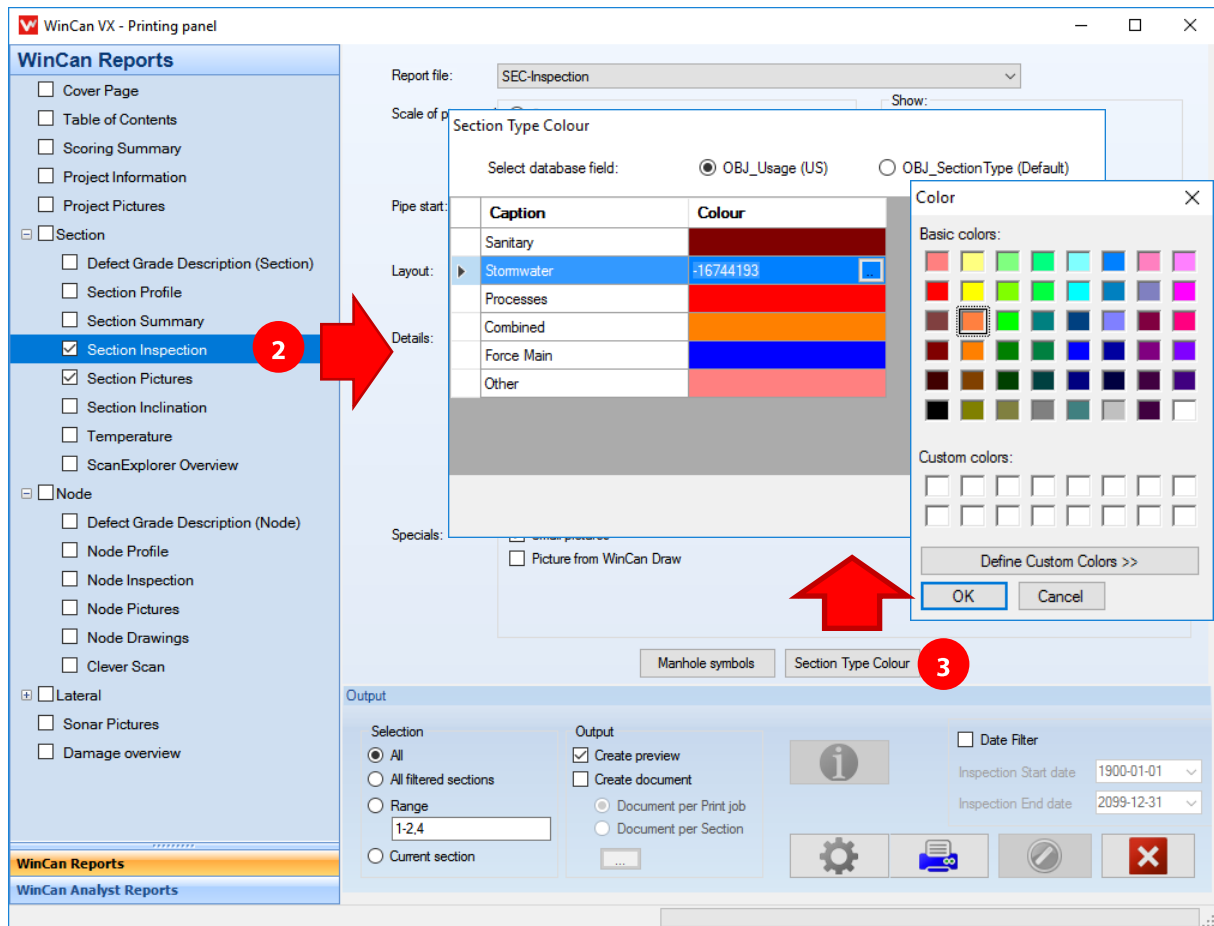
Nr.	Dist	Dist	P	Observation	CD	Phot	P	Clip	La	Cou	Sca	Las	Remark	Grade
1	0.00	112.55	AMH	Upstream Manhole, Survey Begins										
2	35.24	77.31	TS	Tap Saddle, at 10 o'clock, - within 8 inches...										
3	112.55	0.00	TS	Tap Saddle, Intakes, at 02 o'clock - - wit										

Hit the button to add another defect grade description or click on the icon to reset the customized legend to default.

## 21.3 Printing Inspection Reports with coloured Pipe Graph

Many damage code standards are working with a predefined list for the field *SectionType* in order to easily define it for each section. Before printing the report the user may also specify colors for different section types in order to have the pipe graph printed in the corresponding color. Call up the printing dialogue, select the report typ *Section Inspection* (2) and click on the button *Section Type Colour* (3) below the option list.

The small dialogue box that appears next allows you to assign a color to each section type when clicking on the color cell right to the section text via a color palette:



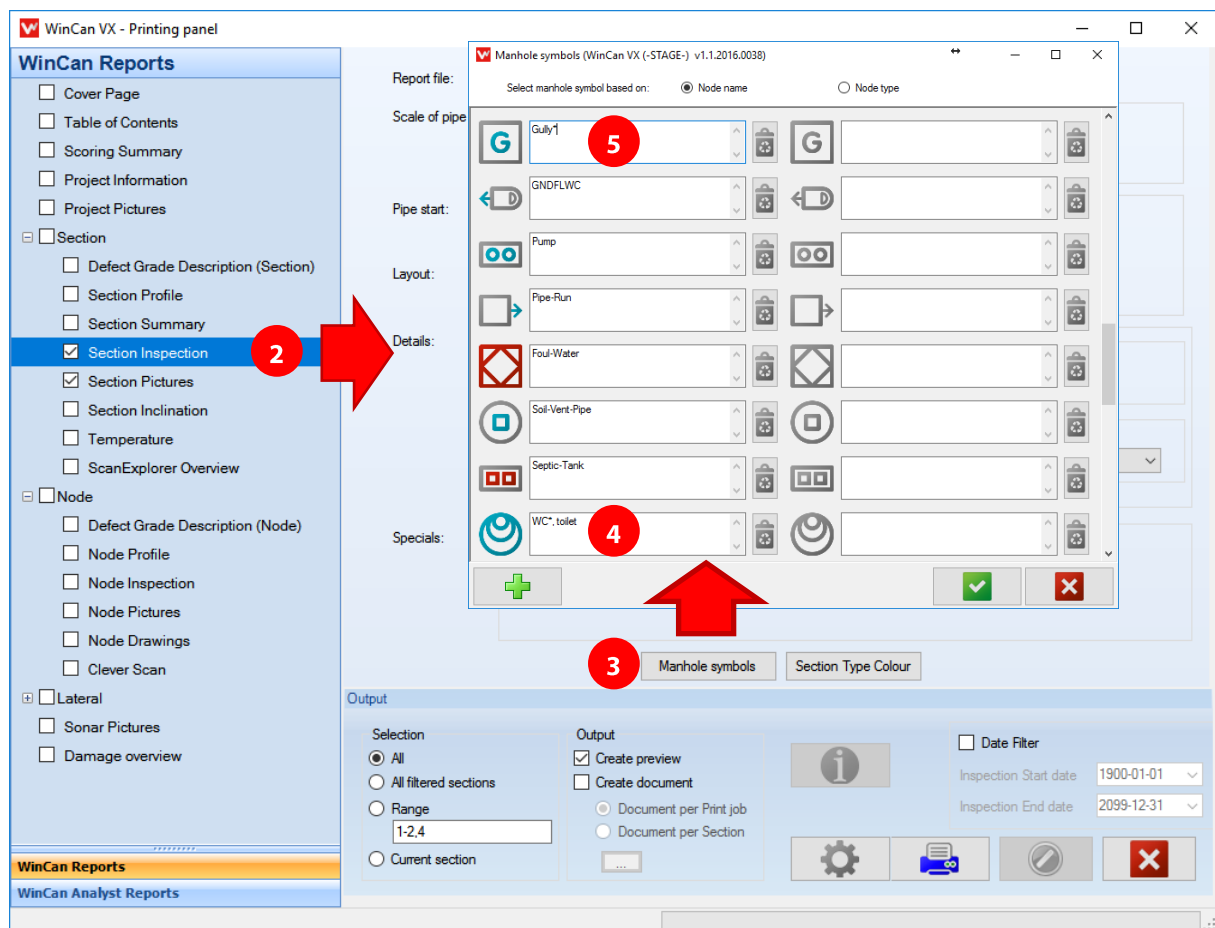
### Note on colours on TV-reports:

Some standards like WRC only allow a set of predefined colours to be applied for observation text as well as for the pipe graph.

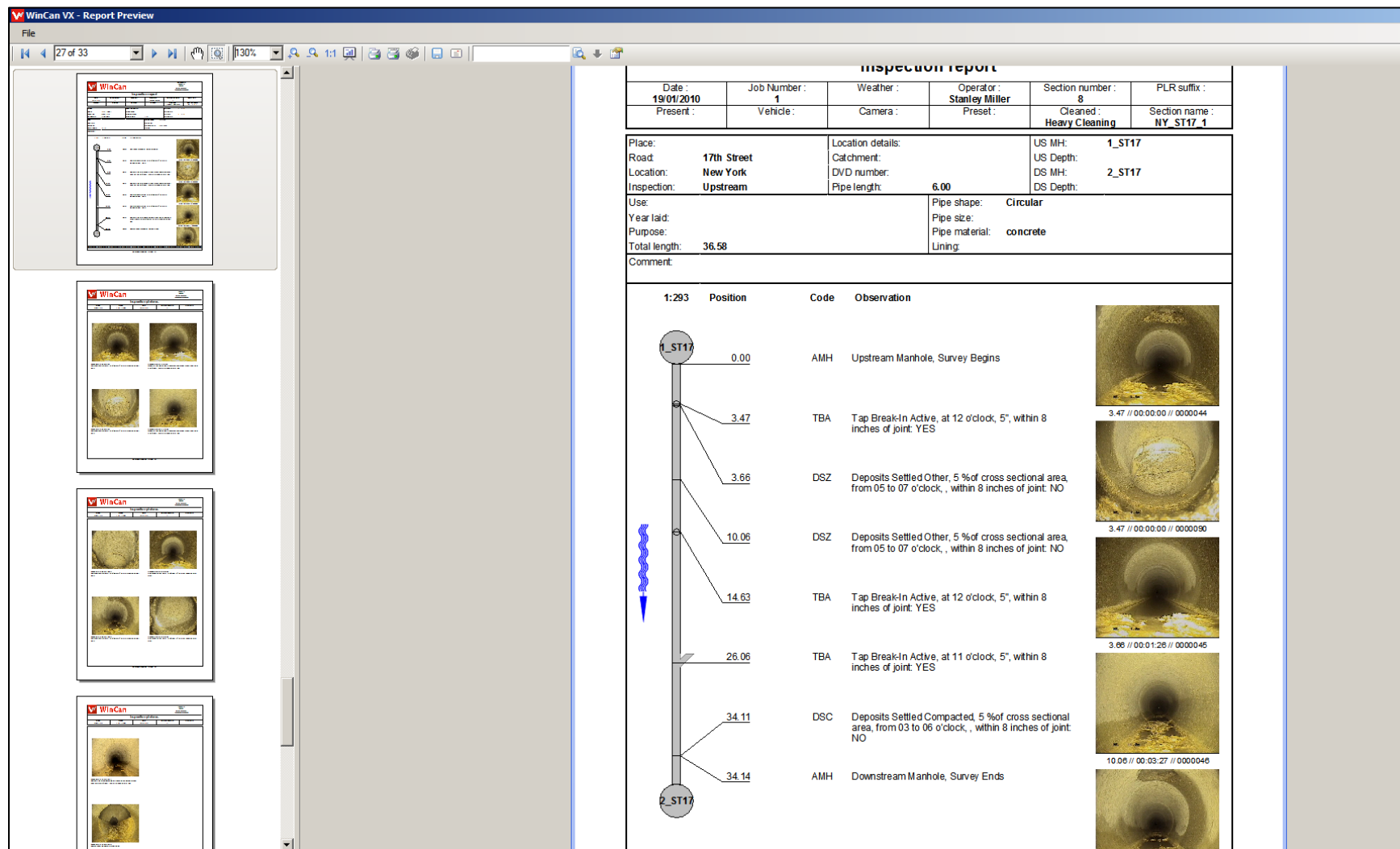
## 21.4 Printing Inspection Report with Connection Point Symbols

The fields *Upstream Manhole* and *Downstream Manhole* in most cases contain information regarding manholes. For pipelines whose upper and lower ends consist on connection points other than manholes it makes sense to have the default grey circle on the inspection report replaced with more meaningful symbols. Please follow the instructions below to get the result you finally prefer.

- Enter the correct term for the upper connection point (e.g. WC, toilet, kitchen drain, roof, road gully etc.) as well as for the lower connection point (e.g. main pipe, collector, catch basin, creek, river, lake, sea etc.) into the corresponding fields *Upstream Manhole* and *Downstream Manhole*.
- Next click on the tab command *Printing > Print*, select the report type *Section Inspection (2)* in the printing dialogue and click on the button *Manhole Symbols(3)* below the option list.
- Enter exactly the same term you've already typed into the fields *Upstream Manhole* and *Downstream Manhole* again into the text field right to the desired symbol. Mind the orthography of the terms entered and save all descriptions with a click on the green OK-button. Multiple entries within this text field must be separated with a comma (4):

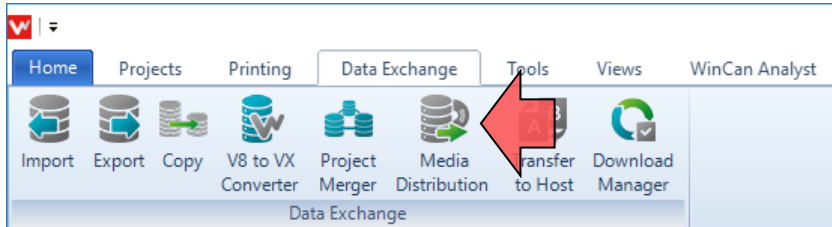


The placeholder "\*" (5) allows the software to recognize also parts of the text typed into the fields *Upstream Manhole* and *Downstream Manhole*. So the user may count up all connection points of the same type (WC1, WC2, WC3 etc.) and the desired symbol will appear on the inspection report in all these cases.

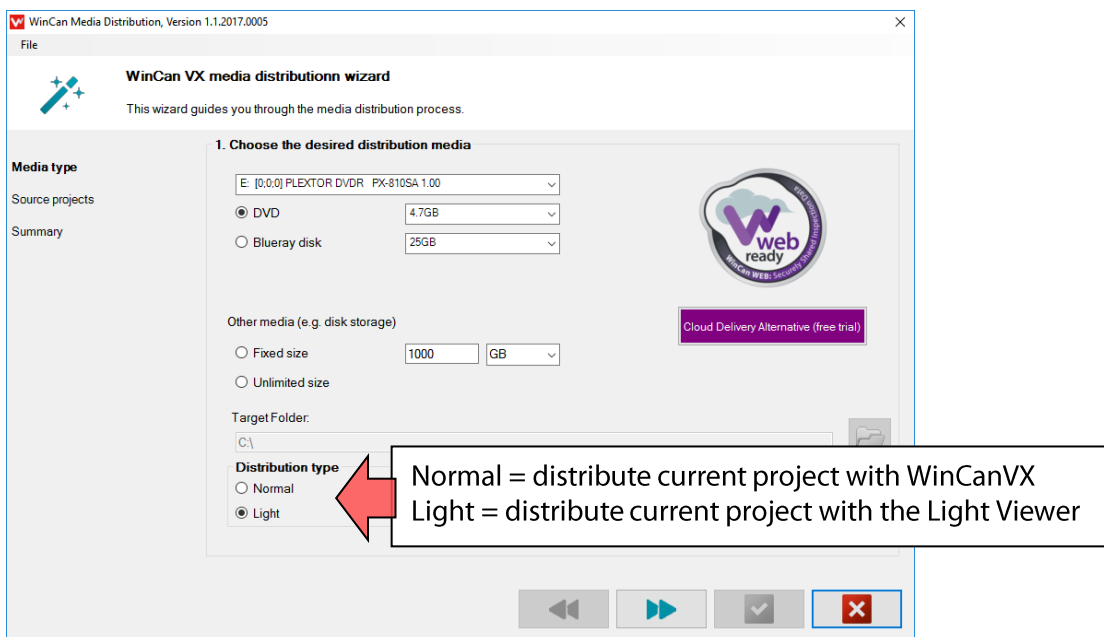


## 21.5 Distributing projects to DVD, USB & HDD

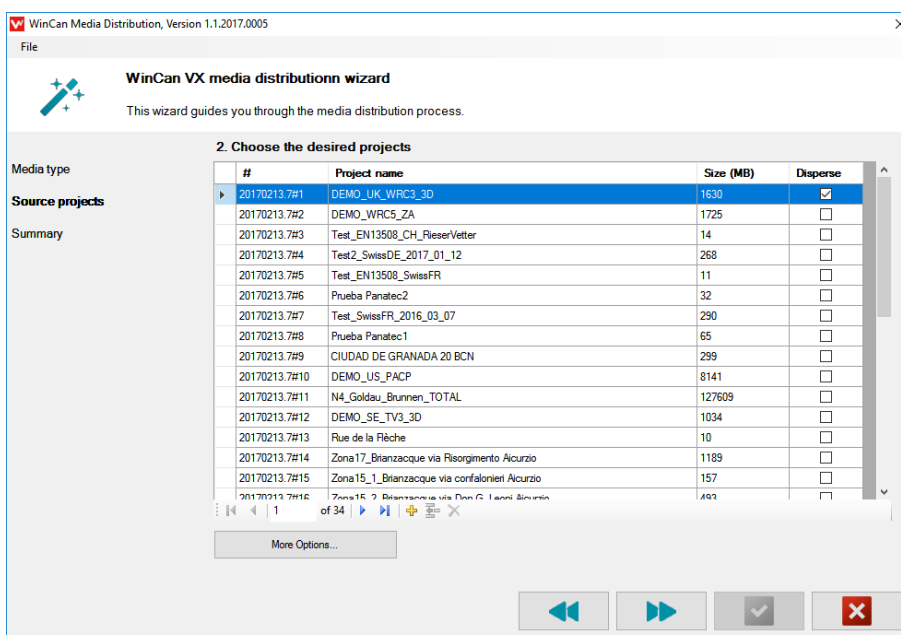
Like in previous versions of WinCan, the project data can be distributed on DVD or any kind of removable disk. Click on the icon *Data Exchange > Viewer Export* to run this module. A wizard will then guide you through the process to gather the information needed to run the distribution process, and to copy the whole project on one or more disks depending on its size:



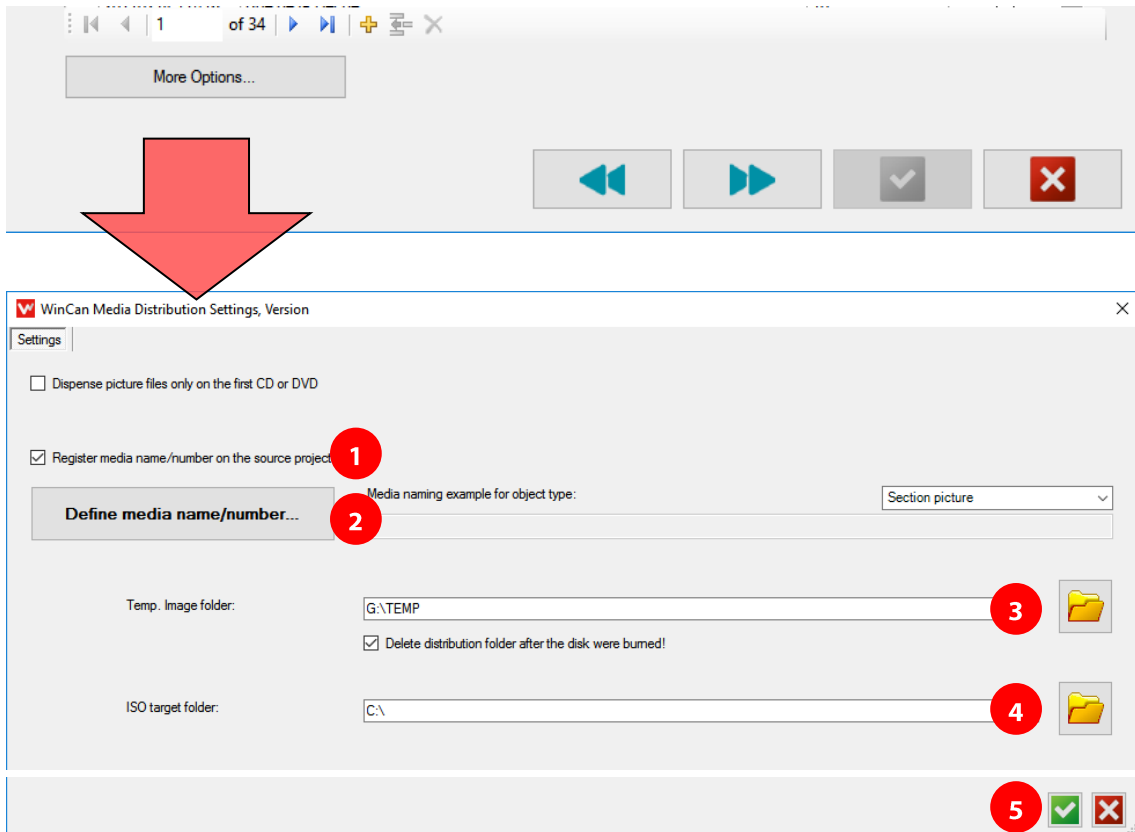
Select the drive you want to have the data distributed on and click on *Next* to continue:



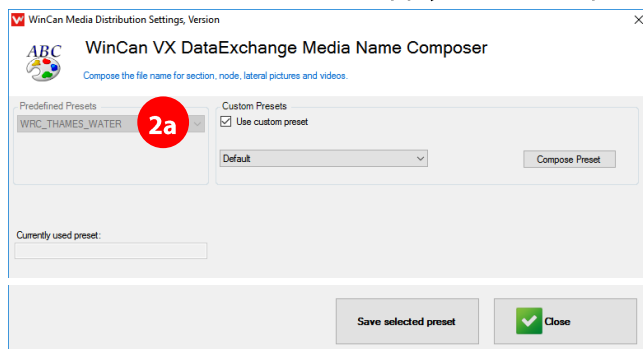
Select the project to be distributed and click *Next*:



Hitting the button *More Options...* opens another dialogue box to modify the distribution settings:



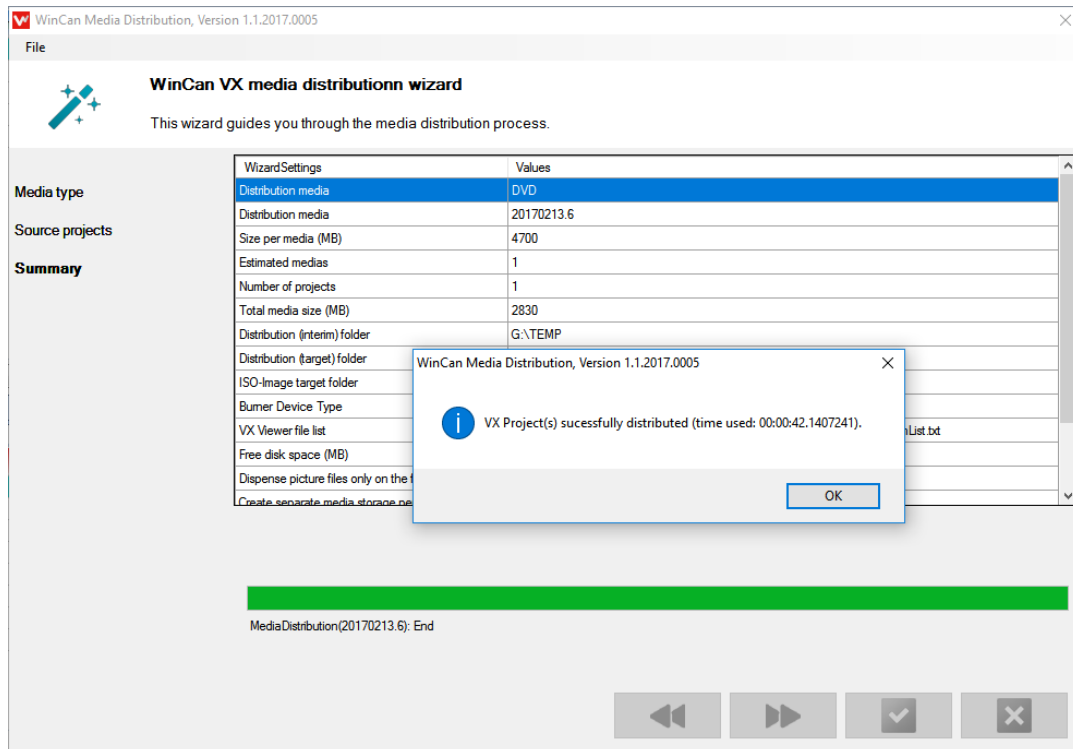
1. Enable this option to get the disc name written into the corresponding inspection field (*i.e.* *INS\_VideoRef*).
2. Clicking this button is going to open a further dialogue for renaming picture and video files. Unskilled users are advised to apply the default presets (2a):



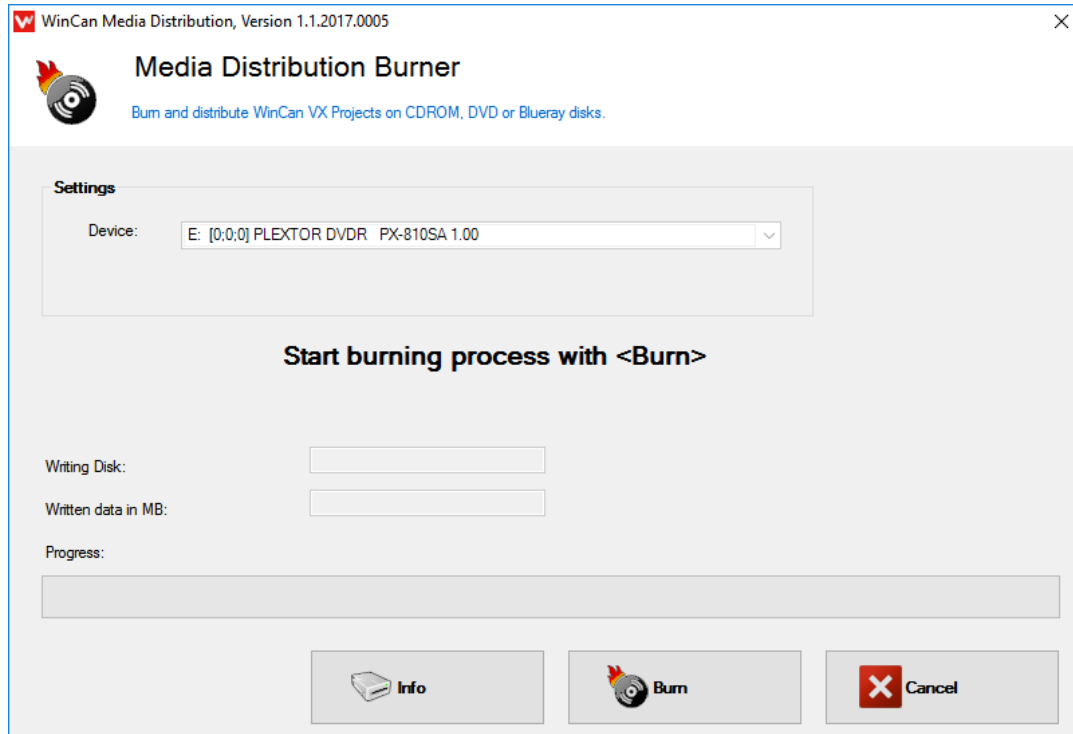
3. Set or check the path for the temporary image folder. An image of the distributed data is usually created in the folder *C:\Users\Public Documents\CDLAB\Common\Images* and used for immediate burning with the WinCan burning software.
4. Set the path of the target folder where the distributed data should be saved as an ISO-file (compressed data package). ISO-files can be burnt later on another computer with any external burning software.

Finally push the green OK-button (5) to confirm all settings and to get back to the Media Distribution Wizard.

WinCan will now show a summary of the options that have been selected and clicking *Next* again will start the process of creating the intermediate data store in preparation for writing. This may take a few moments depending on the size of the project:



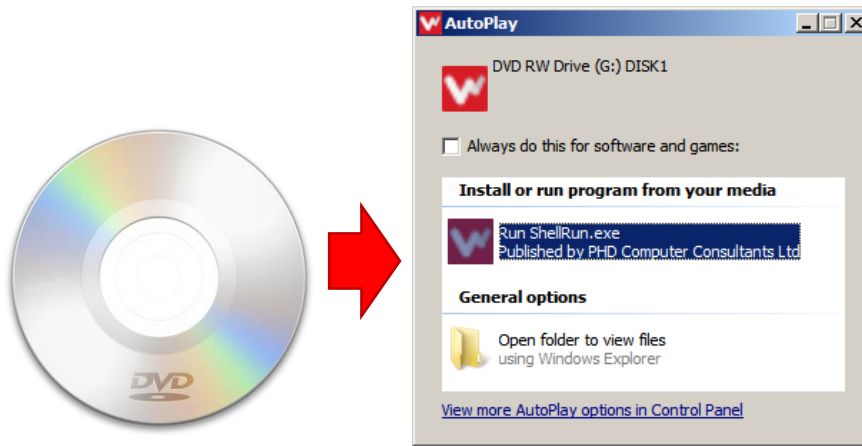
Click *OK* to engage the burning module, then click on the *Burn* button to start the burning process:



## 21.6 How the End User Views the Output

The end customer can view the project data delivered on the external data storage medium in WinCan VX or in the WinCan Light Viewer on any Windows computer. Both software applications run automatically in the viewer mode and are entirely **license free**.

After inserting the disc into the corresponding drive the following Windows message pops up:



A click on the 'Run Program' option will start WinCan VX and show the project data directly in the viewer mode:

Pipe Seg	Total L	City	Street	Upstrea	Downst	Material	Shape
1 DF 1	50.00	Philadelphia	Fairfield R.	685	534	Concrete	Egg shap..
2 DFB 8	48.10	Philadelphia	Earlham S.	538	537	Concrete	Round 90..
3 DFB12	30.50	Philadelphia	Eardley R.	3947	3946	Polyvinylc..	Round 30..
4 HCA 8	37.50	Philadelphia	Fairlie Gar..	1744	1743	Concrete	Egg shap..
5 CDC 2	33.10	Philadelphia	Fairlie Gar..	526	527	Concrete	Egg shap..
6 HC 18	64.30	Philadelphia	Fairholt CL..	1734	1735	Concrete	Round 12..
7 H 20	58.80	Philadelphia	Fairway A..	1834	1833	Concrete	Round 90..
8 2016-04-1..	0.00	Philadelphia	Fairholt CL..				

Dis	Dist	P	Observation	C	Photo	Photo	Clip	Late	Cou	Scan	Laser	Remarks	Grade
1	0.00	64.30	A.. Manhole									START	
2	0.00	64.30	M.. Water Level: 5% of cross sectional area										
3	12.00	52.30	TF Tap Factory Made at 2 o'clock, 12inch dim										
4	20.00	44.30	D.. Deposits Attached Encrustation, 10% of cross section..									at joint	
5	23.00	41.30	D.. Deposits Settled Compacted, 15% of cross sectional a..										
6	25.00	39.30	D.. Deposits Ingress Gravel, 10% of cross sectional area f..									at joints	
7	29.40	34.90	TF Tap Factory Made at 3 o'clock, 12inch dim										
8	35.00	29.30	CL Crack Longitudinal at 10 o'clock, within 8 inch, Start, 2i.. S01										
9	40.00	24.30	CL Crack Longitudinal at 10 o'clock, within 8 inch, Finish... F01										
10	47.00	17.30	TF Tap Factory Made at 10 o'clock, 12inch dim										
11	64.30	0.00	A.. Manhole									END	

The viewer mode automatically blocks all program functions for data entry and processing. If the end customers (e.g. engineers, local water authorities) need to post-process the data, then they will need to purchase a valid WinCan license.

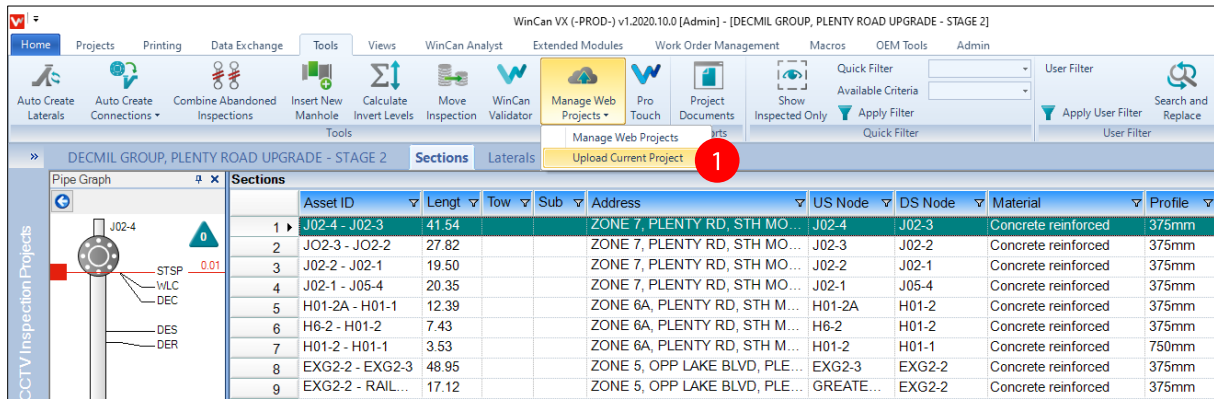
Note that launching a project distributed on a DVD together with WinCanVX will take up to 3 minutes until the main interface shows all data.



## 21.7 Uploading projects to the cloud

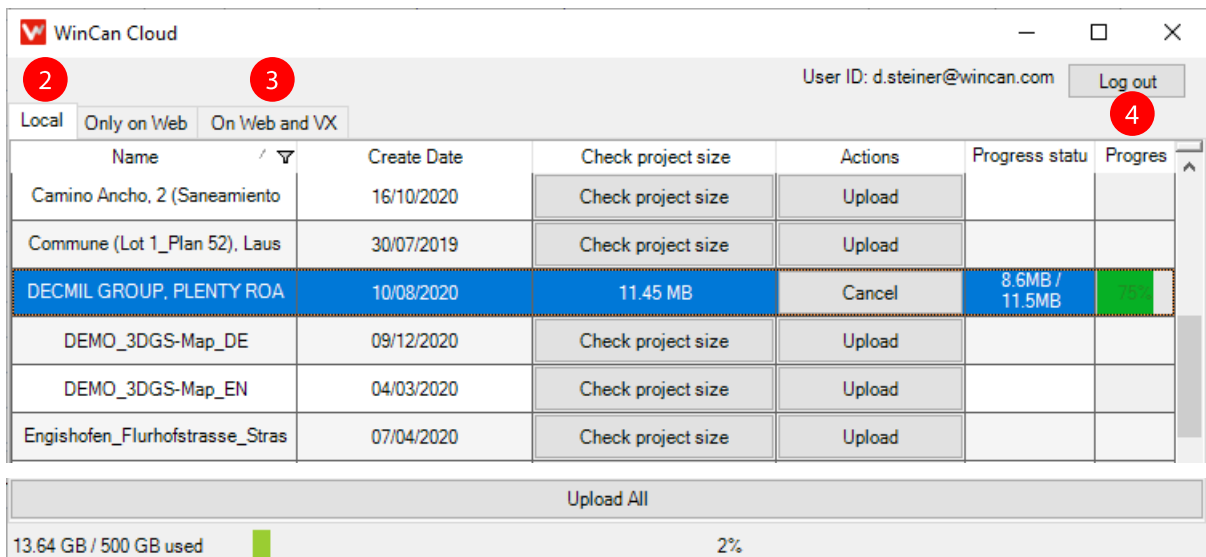
This new service allows the CCTV-companies to upload their survey data to a host server, where it can be downloaded from at any time and on any spot on the world by an end customer. So this procedure is able to fully replace the sending of survey data as paper reports or as a batch of DVDs.

In order to upload a project, open it in WinCanVX and hit the command *Tools > Manage Web Projects > Upload Current project* (1):



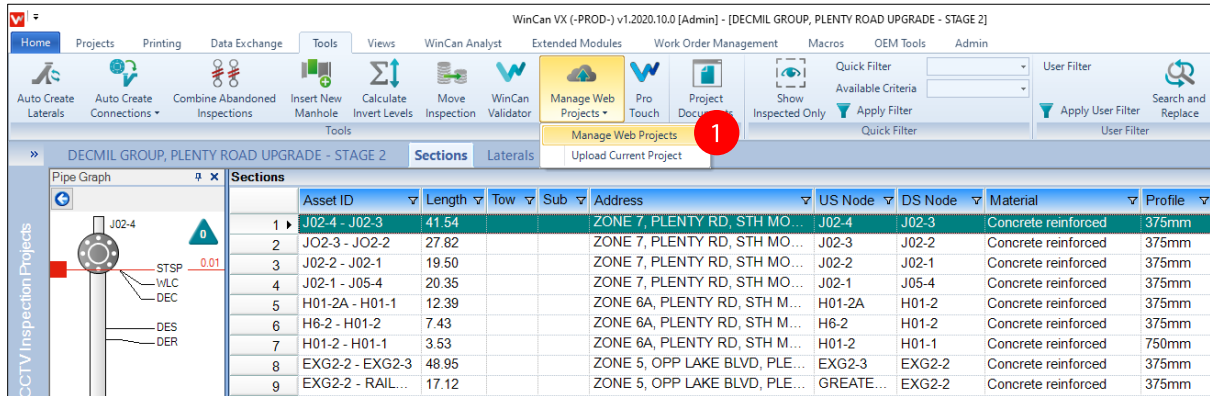
The panel that follows shows the status of the process in the progress bar. Besides that, it provides you a list of all available projects on the local hard drive (2) and those which have already been uploaded (3).

You can thus manage your personal web space directly in WinCanVX. Use the button Log in/Log out (4) to enter the profile data of your personal web space.

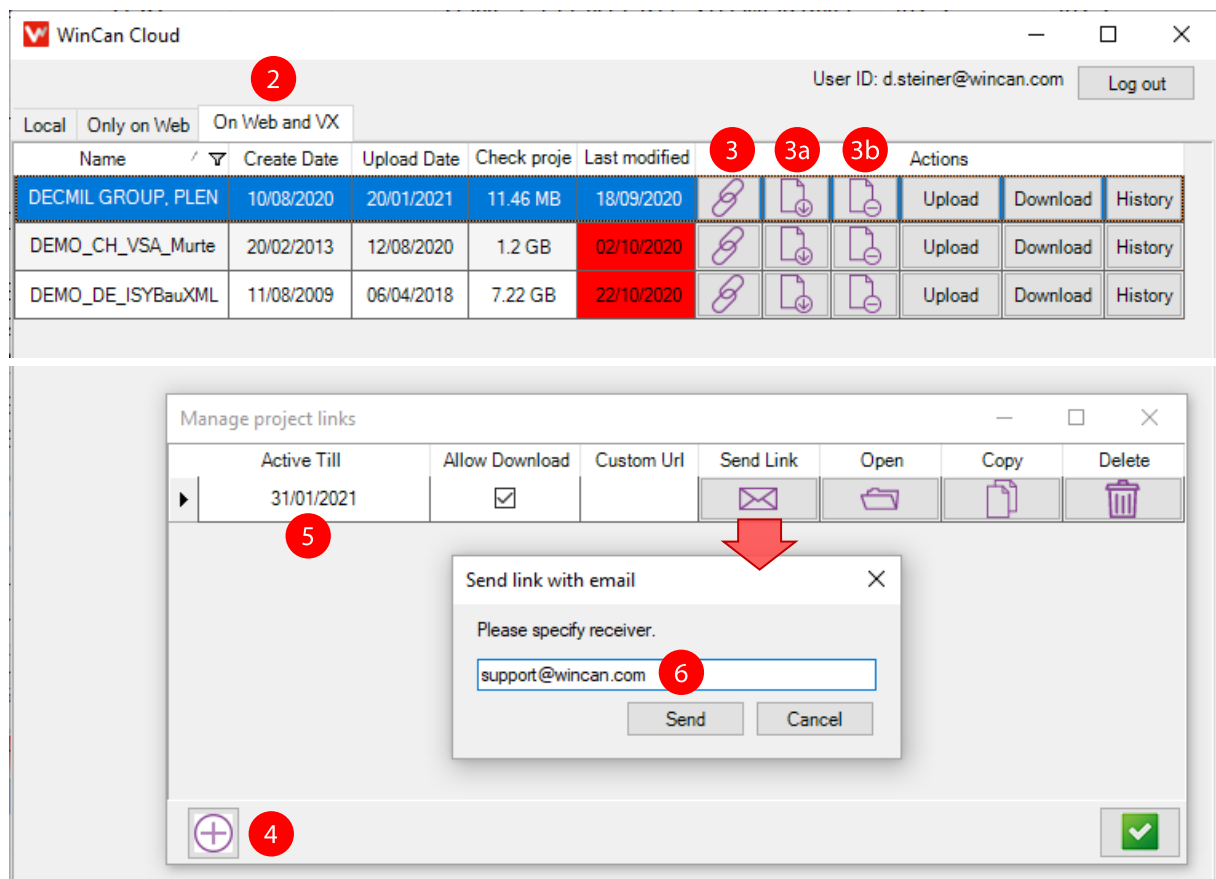


Once finished you are informed via e-mail the project has been successfully uploaded to your personal web space.

In order to make uploaded projects accessible for end customers, run WinCanVX and hit the command *Tools > Manage Web Projects > Manage Web Projects*:



Switch to the tab *On Web and VX* in the dialogue box that follows (2), select the desired project from the list of recently uploaded projects and hit the paper clip icon (3) in order to create a corresponding link:



The dialogue that follows asks you to create a link (4), set an expiration date (5) and finally send it to the receiver (i.e. e-mail address of the end customer (6)).

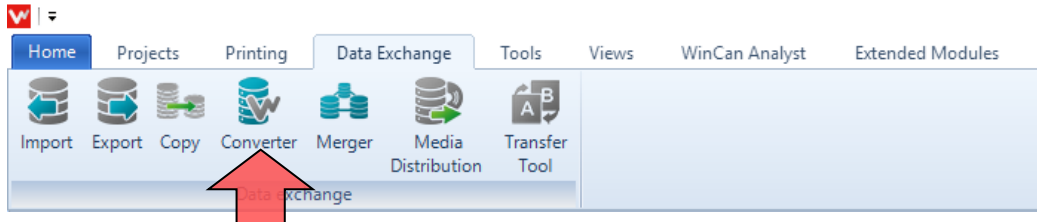
Make sure the option *Allow Download* is checked so the end customer will be able to download the project from WinCan-Web.

The *Browse* button (3a) right to the *Links* button allows you to view the picture and video files associated with the WinCan Web project.

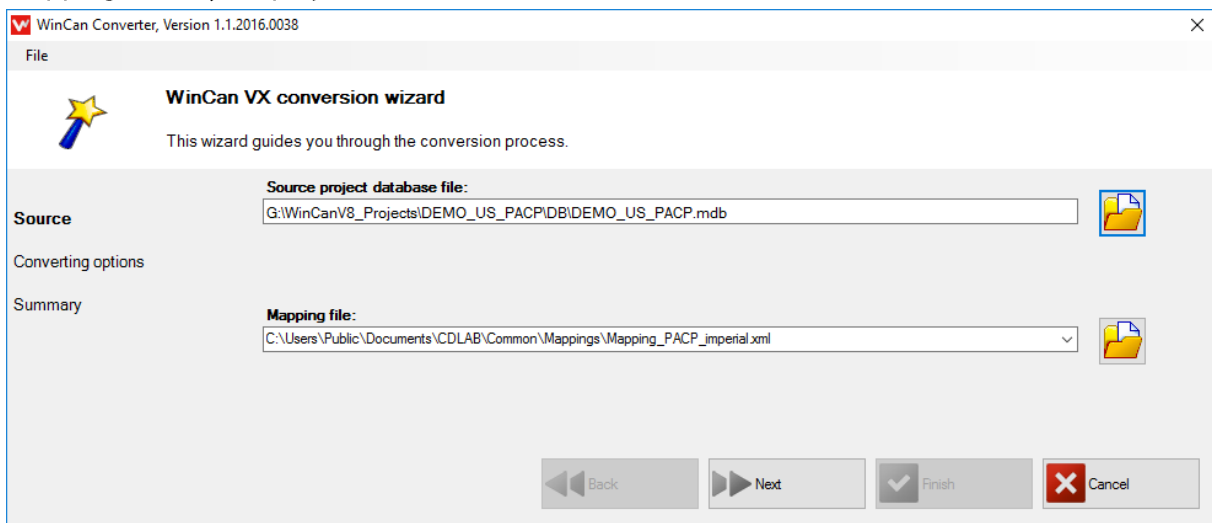
The *Delete* button (3b) on the other hand is used to delete projects from your personal web space: this does not delete them from their source (local) location.

## 22 Converting Projects

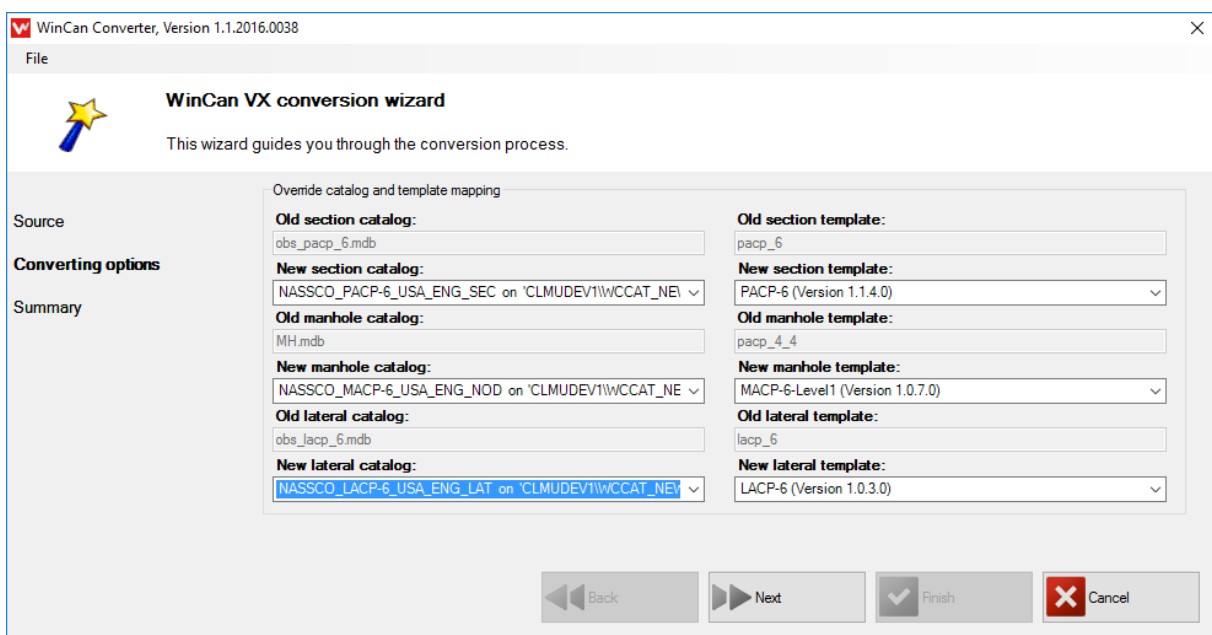
Projects recorded with the previous version WinCan V8 can easily be converted into WinCan VX. The converter module is launched with the button *Data Exchange > Converter* and a wizard will guide you through the conversion process. Once completed, you will find a new project compatible with WinCan VX in your default WinCan projects folder.



First, specify the source path of the V8 project database (.mdb file) and select an appropriate data mapping file for your project. Then, click the *Next* button to continue:

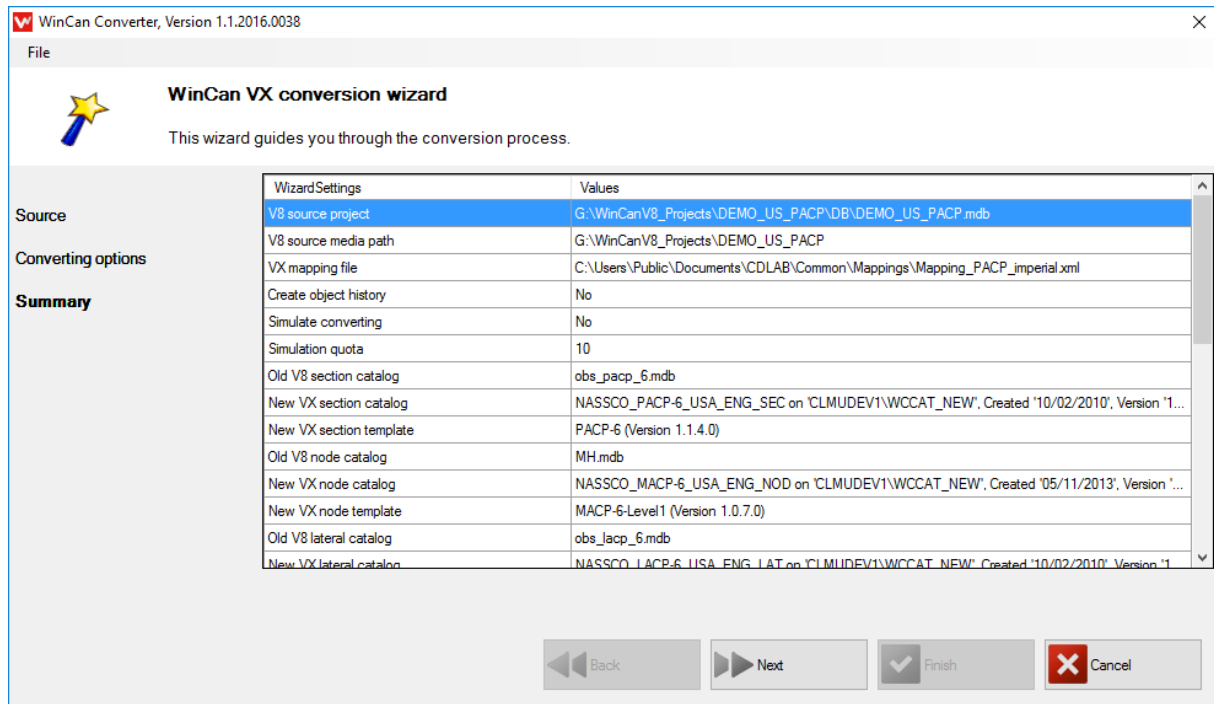


Specify the template used in the donor V8 project (e.g. NASSCO\_PACP-6) as well as the damage standard (e.g. PACP-6) and click *Next*:

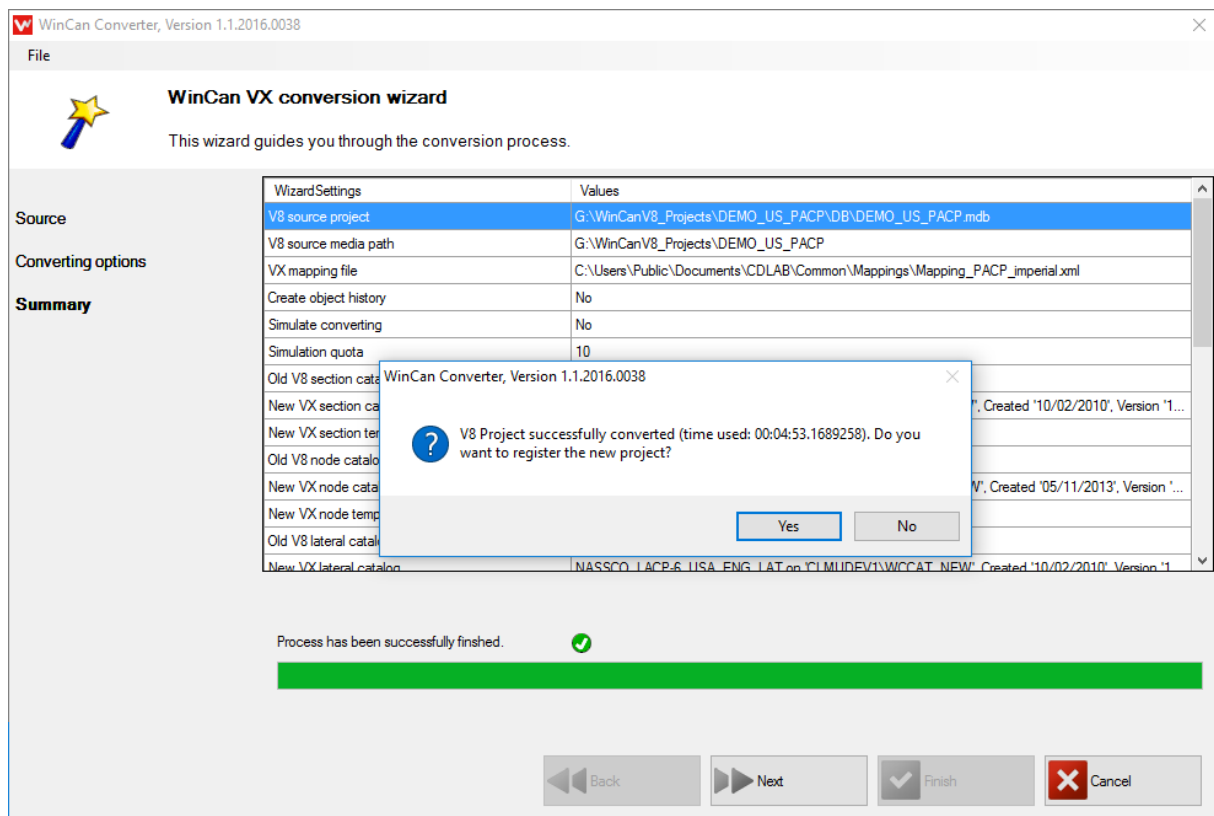


## Converting Projects

Confirm the summary listed below and click **Next**:



The Conversion process will now run and the progress will be displayed. After the conversion has finished as shown below, click on **Finish** to quit the converter module:



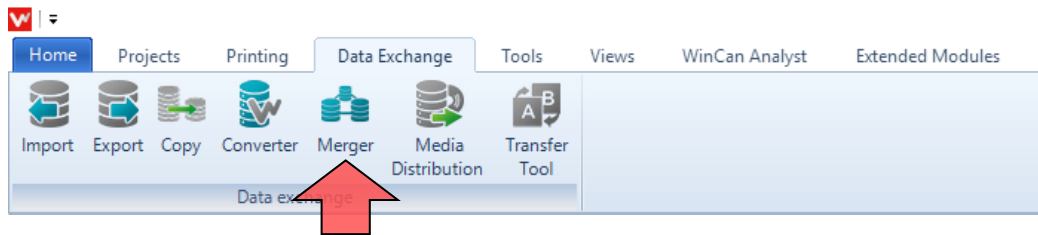
The converted project immediately appears in the project list of WinCan VX and can be opened.

## 23 Merging Projects

Project merging is a process during which WinCan VX takes data from two or more projects (source projects) and copies them into one single project (target project).

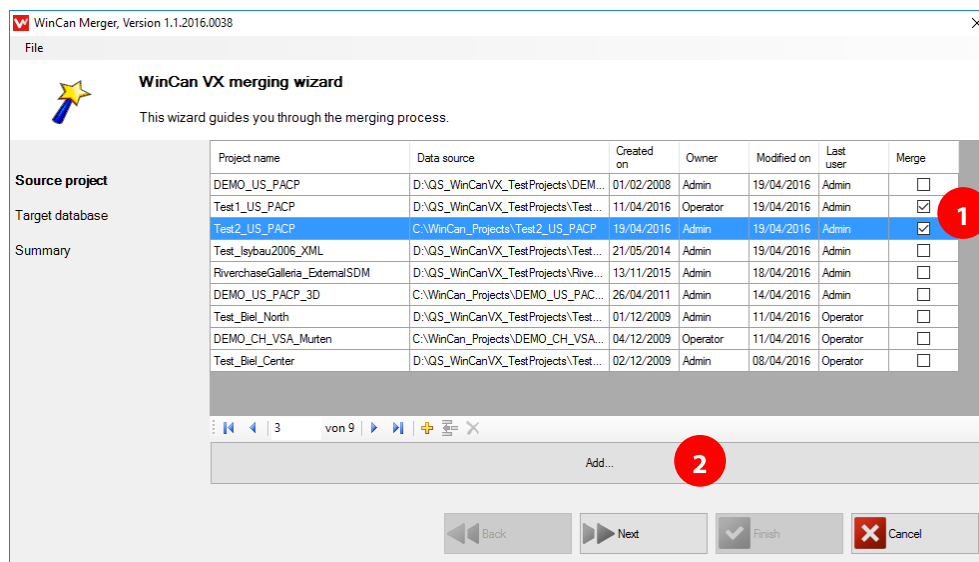
All the projects you want to merge should have the **same template** and the **same damage standard**. Otherwise, any subsequent country specific data export by the user is likely to include incorrect results.

It is recommended to always copy the data from the source projects to an empty target project. The merge module is launched with the button *Data Exchange > Merger*.

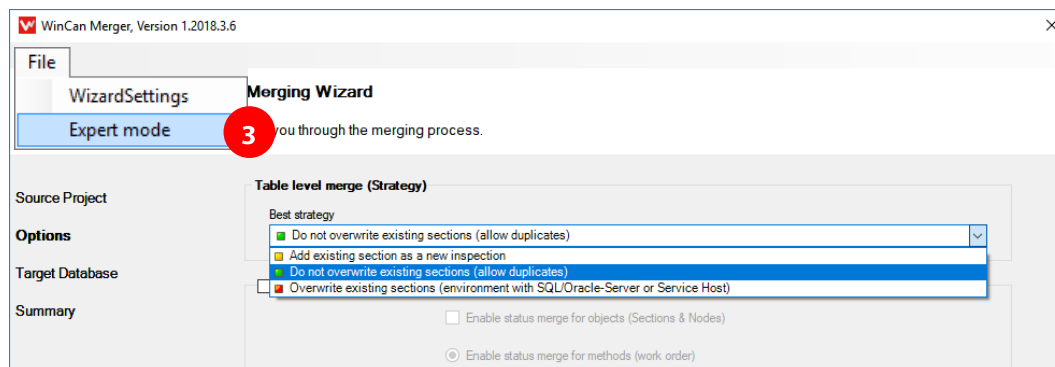


Once launched, the Merging Wizard opens and asks for the information needed to complete the merge process.

Firstly, select the projects that you would like to merge by ticking the box to the right of the required project names in the list of projects available on your computer (1):



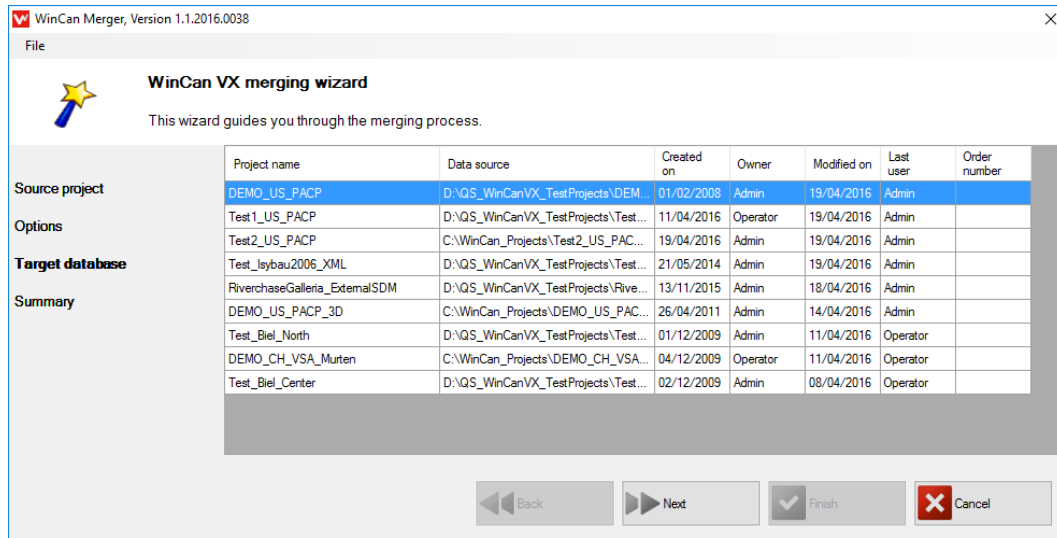
You can also include projects that are not contained in your project list but are connected to the PC by using the *Add* button at the bottom (2). Click *Next* to continue. The panel below with the extended option group is displayed only when activating the command *File > Expert Mode*.



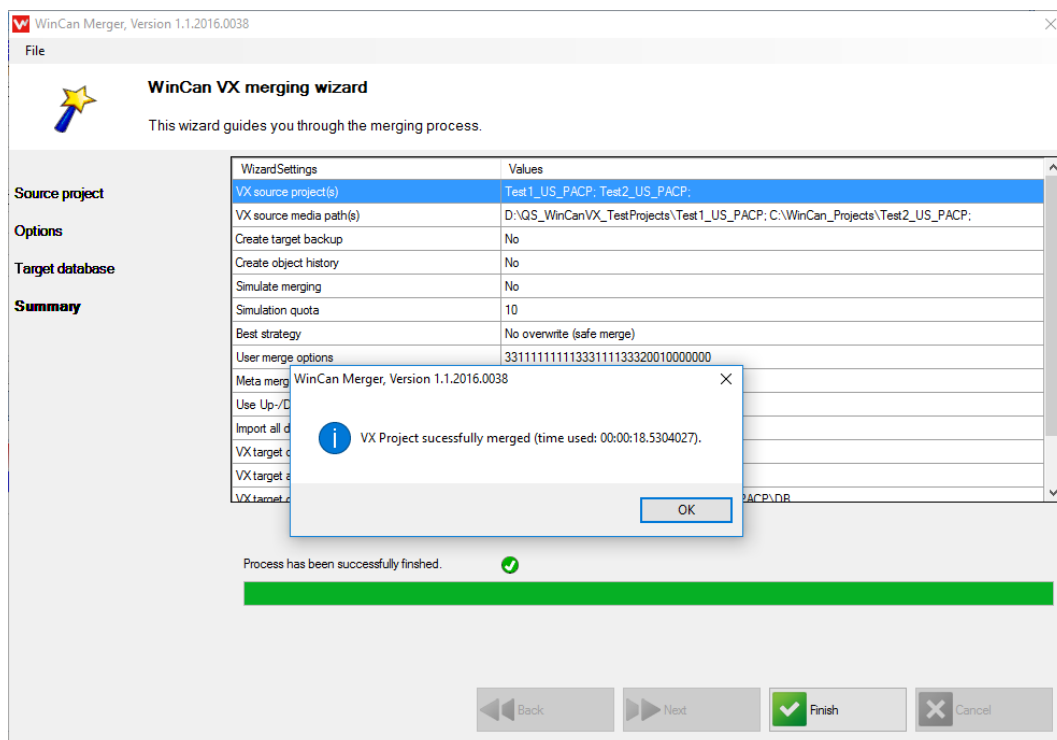
## Merging Projects

If not activated the merging wizard is setting default values within this option group as well as in the panels for further preferences (3).

Click *Next* to highlight the target project you want to have the source data merged into:



Click *Next* twice and wait until the progress bar completes and shows green:



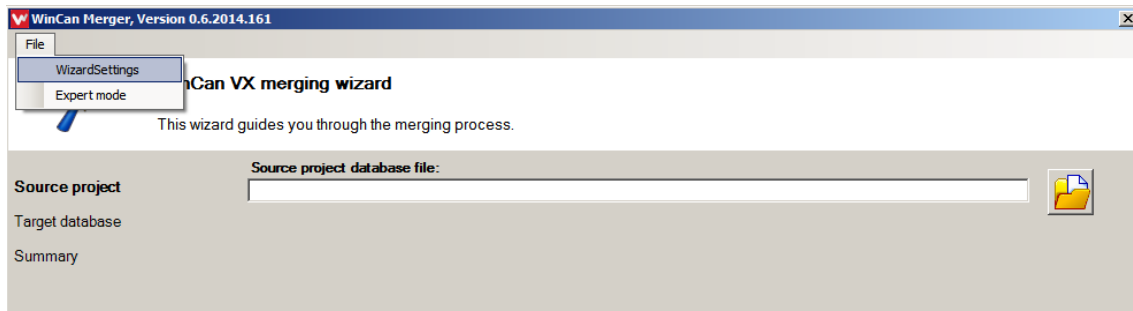
The source project data are now copied into the target project. Click on the button *Finish* to quit the merge module and view the result in WinCanVX.

## 23.1 Merge Settings

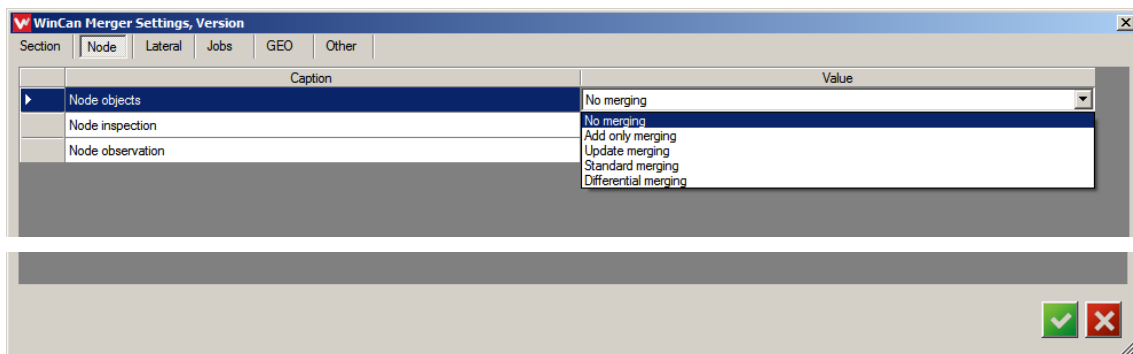
The software WinCan VX is always copying the project data table by table. Data of each table or table group can also be merged applying different specific procedures as described below:

- Copy new inspection data only (without any section data) AND overwrite old inspection data
- Copy sections only WITHOUT the corresponding manholes
- Copy manholes only WITHOUT the corresponding section

These options will allow a faster data merge as soon as large projects are going to be copied. To modify the settings start the merging wizard and select the command *File > Wizard Settings*:



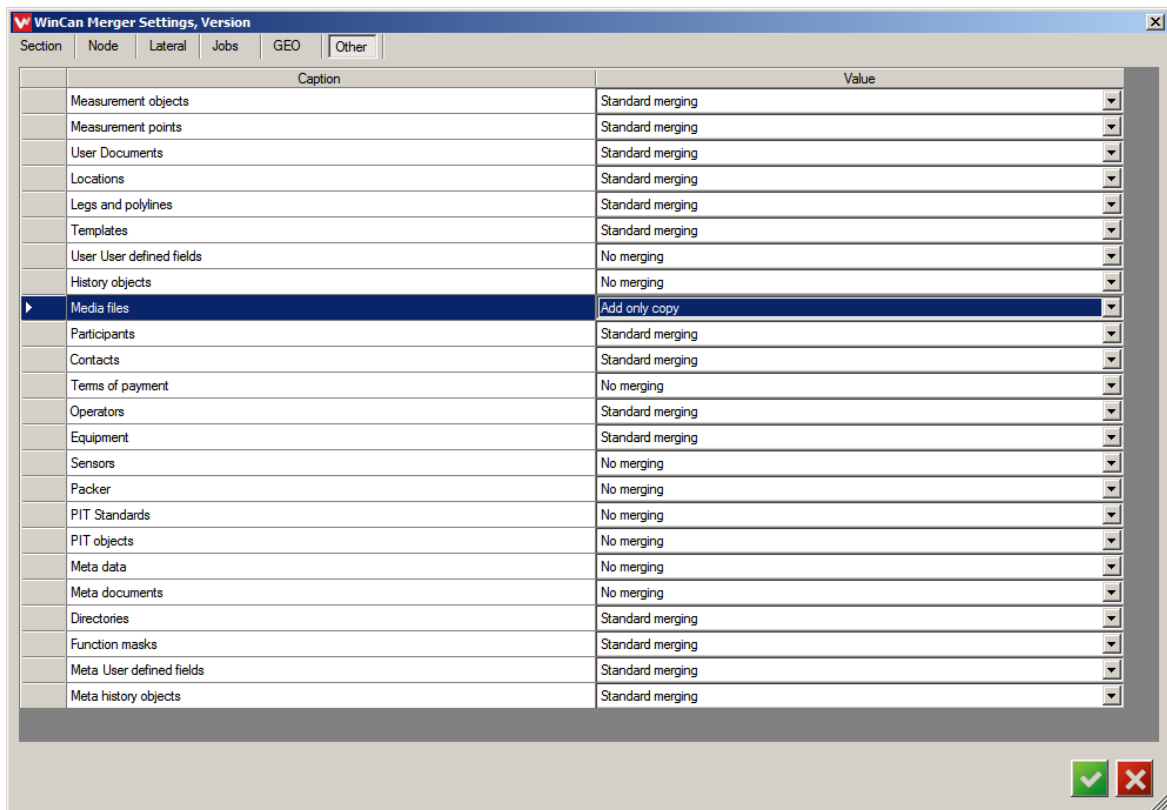
The settings dialogue is providing separate tabs for each object category (sections, manholes, satellites etc.). You may now assign a specific merge option for every table within an object category and define how and whether the data should be copied to the target project.



The available merging options are described below:

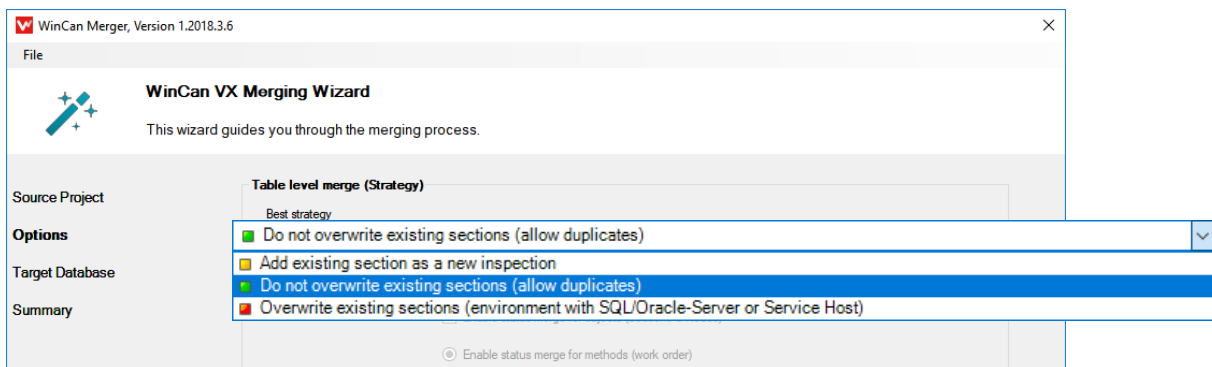
- **No merging:** The data of the selected tables are **not** copied into the target project.
- **Add only merging:** This option **always** creates a new object. Existing objects (i.e. sections and inspections) with the same name are **not** modified or overwritten. Duplicated sections have to be manually deleted by the user.
- **Update merging:** Previously exported objects are updated or overwritten. New objects are always added. This option is mainly applied when exporting data to a CCTV truck.
- **Standard merging:** All existing objects are overwritten. New objects are always added.
- **Differential merging:** Only recently created or updated objects are copied. This option is currently not yet implemented.

The tab *Other* contains further object categories (e.g. *templates* (templates), *media files* (photos and videos)) which the user can assign a specific merge option to:



Any modification of these default assignments should be done by experienced users only in order to avoid error risks when merging projects.

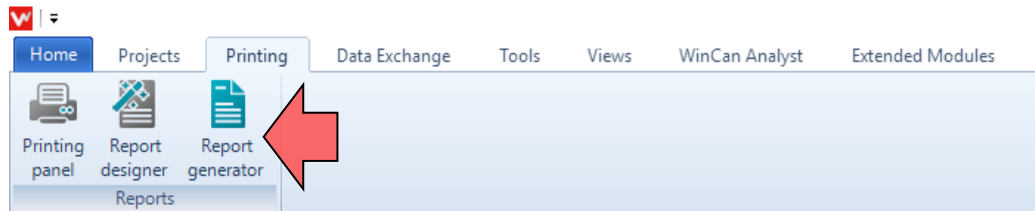
To minimize the error risk during a merge process the user may simply choose one of the three different predefined strategies available in the *expert mode* of the merge wizard as shown below:



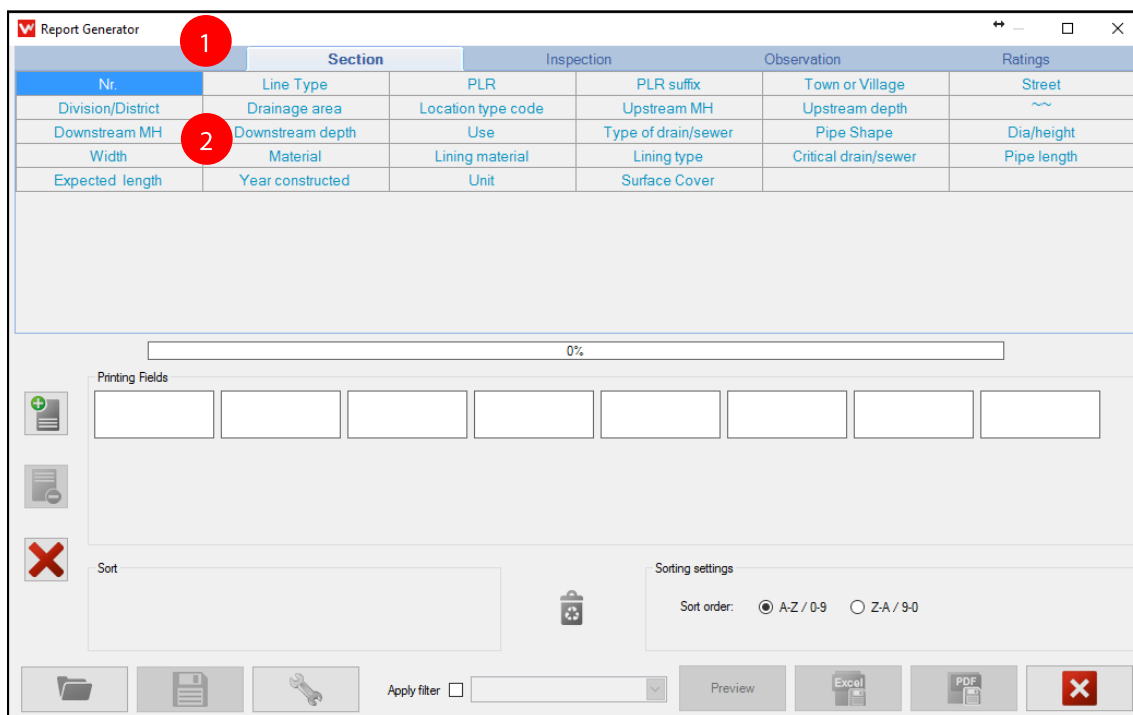
## 24 Report Generator

The report generator allows the user to extract specific field contents from the project database which can be summarized as a flat table and printed directly as a PDF document or exported into an EXCEL file for further analysis. Operators frequently use the report generator to hand out a daily or weekly report that is focusing on the total length of the inspected sections over a certain period of time.

To open the report generator click on *Printing > Report Generator*:

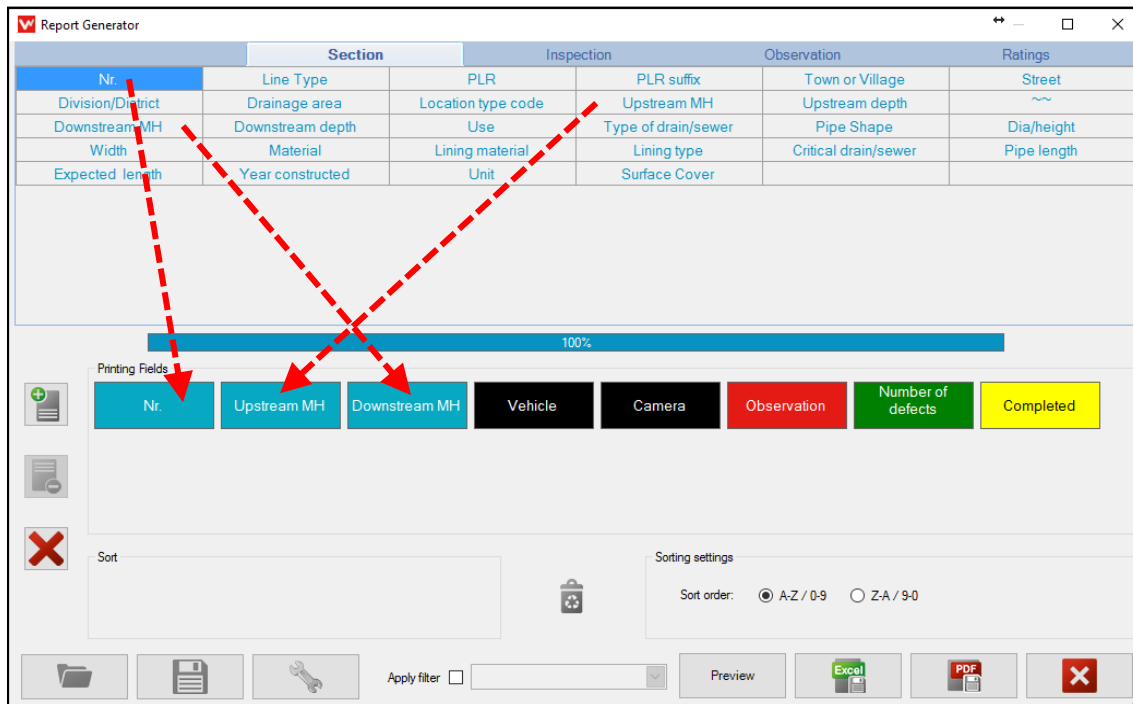


The Report Generator window will open offering the option to produce PDF and EXCEL reports:



In the first row, use the tab buttons *Section*, *Inspection*, *Observation* and *Ratings* to display the related database fields which can be selected for a table report (1). Next select the fields (2) that you wish to query for the report as described below.

To create the report, consider each field to be a column in a table going from left to right, and drag the required fields into the *Printing Fields* boxes in the desired order:

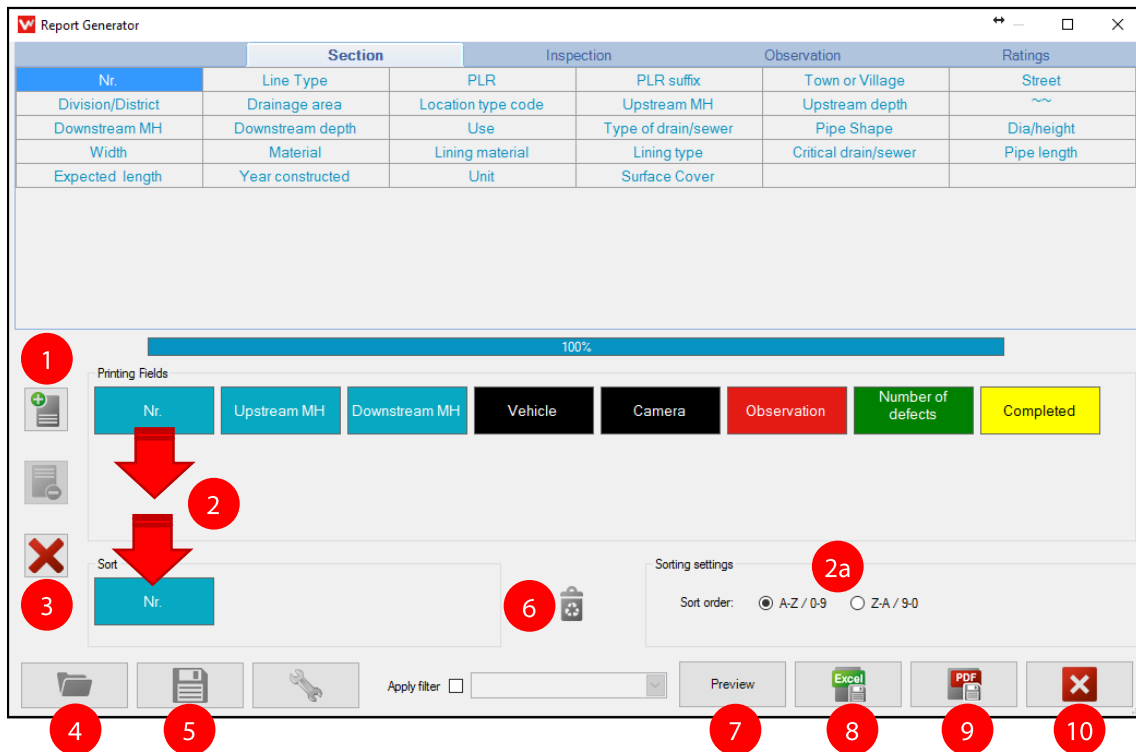


The user can drag queries into the *Printing Fields* boxes at any time from any of the tabs in the top panel. The colors of the fields in the *Printing Fields* area show which tab they have come from:

Blue	Section
Black	Inspection
Red	Observation
Green	Ratings
Yellow	Placeholder – see below

You can also add a placeholder column with a title of your choice. For example, if you require a column in the exported spreadsheet that may need to be filled in by a user at a later date. To create a placeholder, right click on the Printing Field and select the option, giving it a name in the process.

When producing PDF reports, there is a limit to 8 fields due to the width of the output paper. However, there is no limit when exporting Excel spreadsheets. All the functionalities provided by the Report Generator are listed and described below:



1. When producing PDF reports, there is a limit to 8 fields due to the width of the output paper. However, there is no limit when exporting Excel spreadsheets. To add more fields, click the PLUS button indicated.
2. To apply a sort order to the data rows, drag the corresponding field from the *Printing Fields* to the *Sort* area. You can apply multi-level sorting and use the *Sorting Settings* to apply the sorts as ascending or descending (2a).
3. To clear all of the Report Generator options click this button.
4. If you wish to open a pre-saved report generator configuration, click the folder icon and navigate to the required (.rgf) file.
5. To save the current report configuration for future use, click the diskette icon and give the report file a name.
6. Drag any *Printing* or *Sort Field* for removal to the recycle bin.
7. The *Preview* button allows further options for each column in the output including how the data is summarized.
8. Click the EXCEL button to output the report to an Excel (.xlsx) spreadsheet.
9. Click the PDF button to output the report to a .pdf file.
10. The red cross closes the *Report Generator* window and clears all current user selections.

Excel and PDF files created in the *Report Generator* will be saved automatically into the project subfolder [Project]\Misc\Docu.

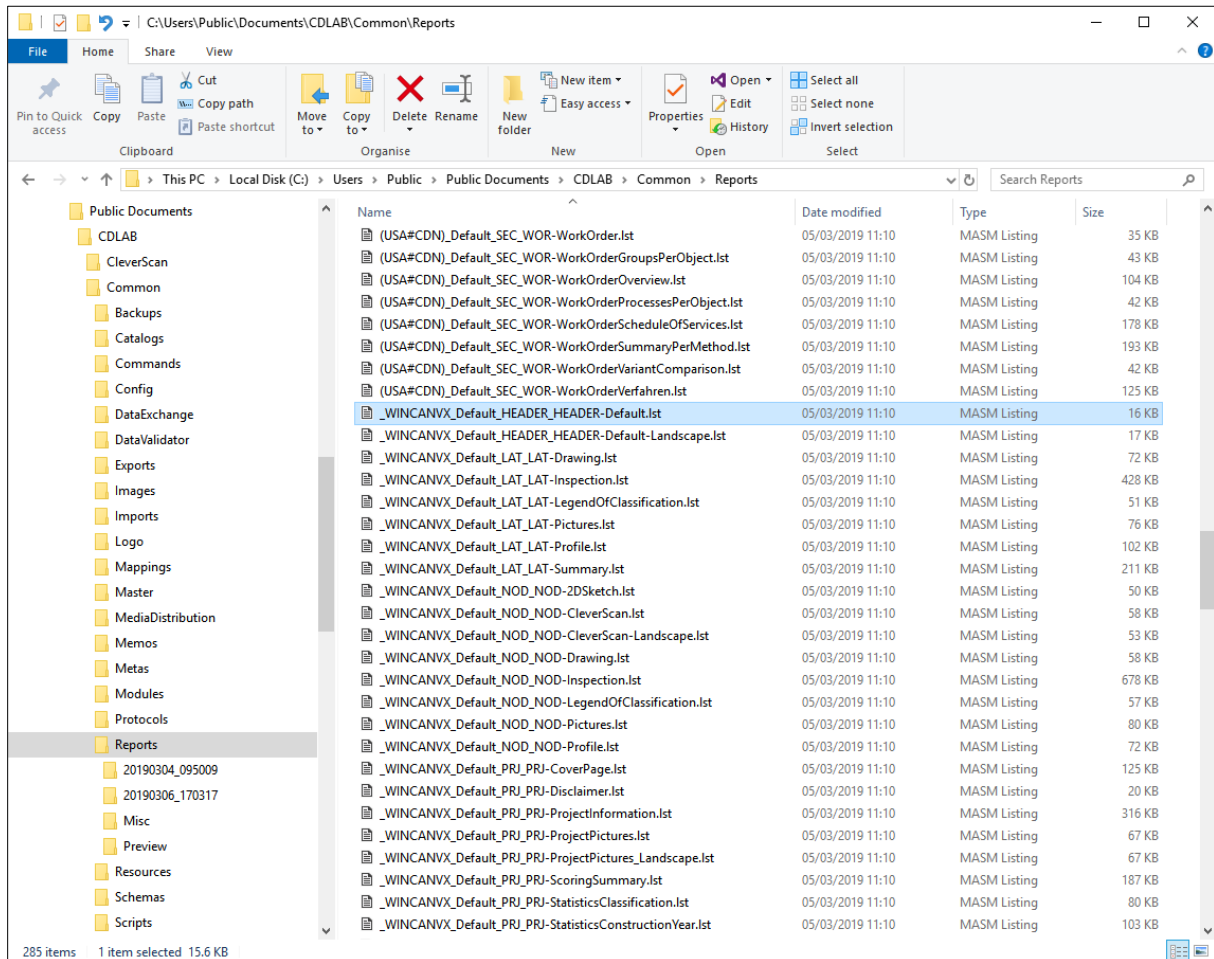
Where a project contains both *Sections* and *Laterals*, the table reports will be carried in separate pages of the PDF file, or in separate worksheet tabs in the Excel file.

Table reports can also be generated for Nodes in a similar way by ensuring that the WinCan VX main screen shows the *Nodes* tab activated before launching the Report Generator.

## 25 Report Designer

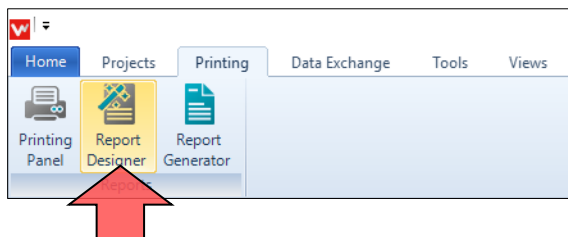
WinCan VX includes a very flexible Report Designer which is used to customize and edit the way in which the PDF reports appear. Access to this area is only available to users with Administrator login credentials. These various report designs are read from the installation folder and copied into the project subfolder *Misc\Reports* when you create a new project.

Once the software is installed, the predefined report templates for all countries are available in the Windows directory *C:\Users\Public\Documents\CDLAB\Common\Reports*:



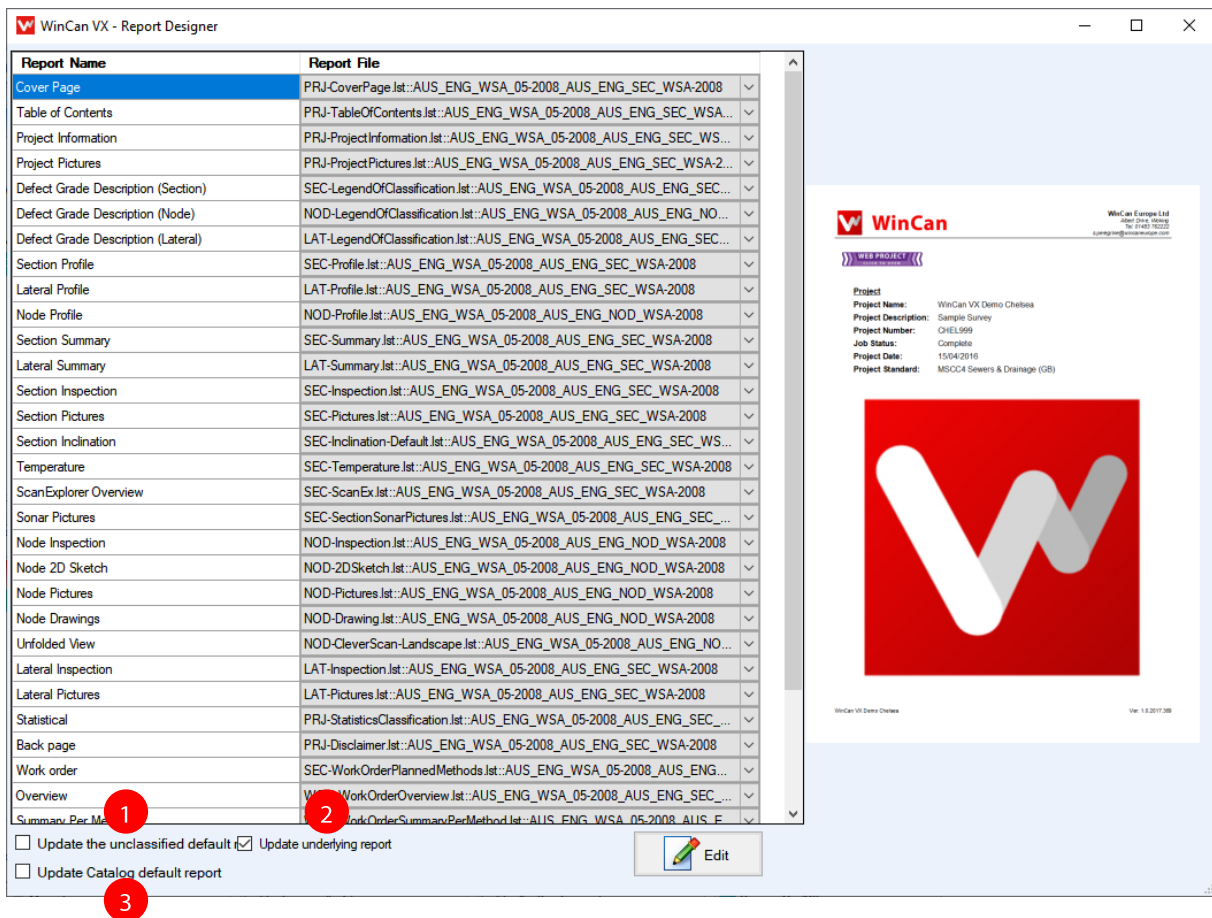
Depending on the country, language and project standard selected, the required report templates in the project directory are applied when printing the survey data.

Launch the Editor from the *Printing > Report Designer* button:




Once launched, the menu dialog for editing the layouts opens. It is possible to edit the individual report for the current project only, or to customize the default report in order to get the change for all future projects.

The report editor first shows the user a list of all available report types:



1. Select this option to modify **only** a predefined report template of the group `_WinCanVX_Default_` in the project directory `Misc\Reports` **and** to apply these changes also for future projects.
2. Select this option to modify **any other** predefined report template (out of the group `_WinCanVX_Default_`) in the project directory `Misc\Reports` **and** to apply these changes also for future projects.
3. This option allows the user to modify also the country specific report templates (not recommended).

Leaving all three options unselected will result in any amendments only be made in the current project.

Hit the button  in order to run the report designer taking into account the options you have checked or unchecked in the panel above.

## Important note:

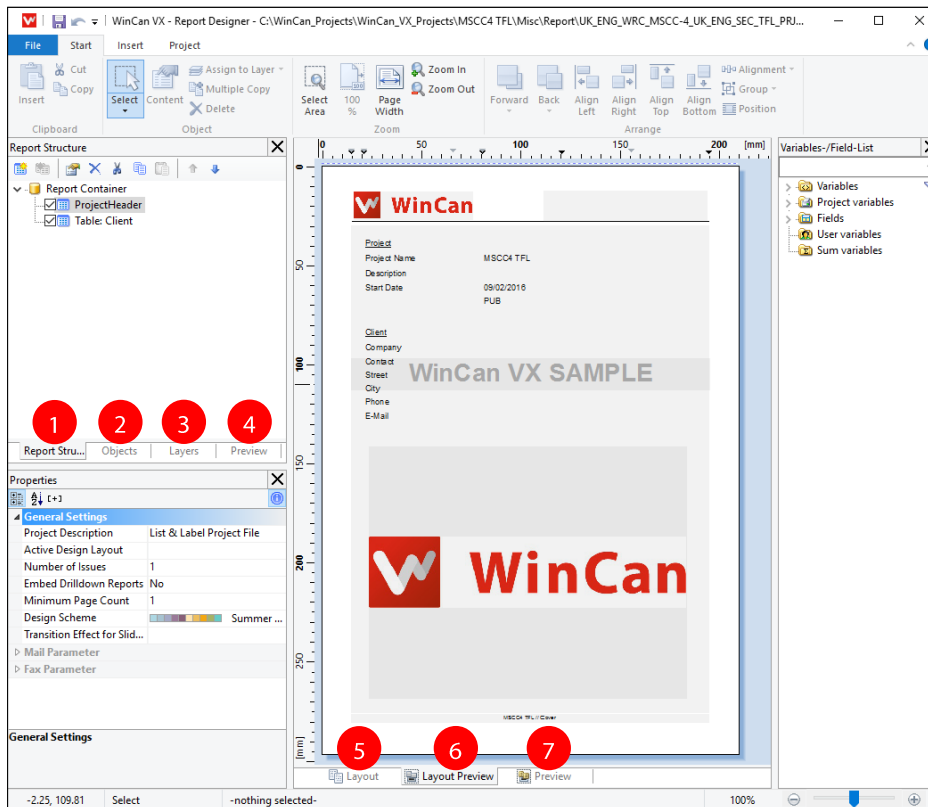
Always create a copy of the report template you want to change and rename that copy adding the company name as a suffix to the default name (e.g. `Sec-Inspection_TFL.lst`). So this report won't be overwritten when updating the software.

## 25.1 Report Designer Interface

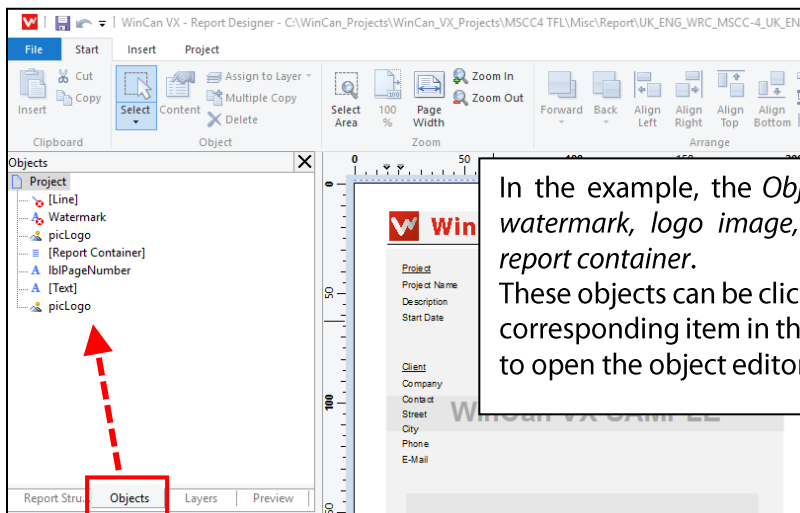
The different report types are managed under the name *Projects*. In addition to the actual information defined in the WinCan VX project, the report also carries layout information such as page size and orientation, fonts, colors, frames, circles, lines and graphics. The report Editor recognizes three types of *projects*; lists, labels, and cards.

The individual components of these *projects* are called *objects*. So, for example a Project can contain text objects, image objects and a report container object.

New objects can be added using the *Insert* tab controls by selecting an object type and right-clicking and/or dragging on the workspace. The Report Editor provides different types of objects, which can be freely positioned and resized in the workspace.



1. The tab *Report Structure* is showing the parts, which the current report page shown in the center is sub-divided into. In this example the page is split into a *Header* and a *Table* part.
2. The *Objects* tab displays the individual objects contained within the structure of the report:

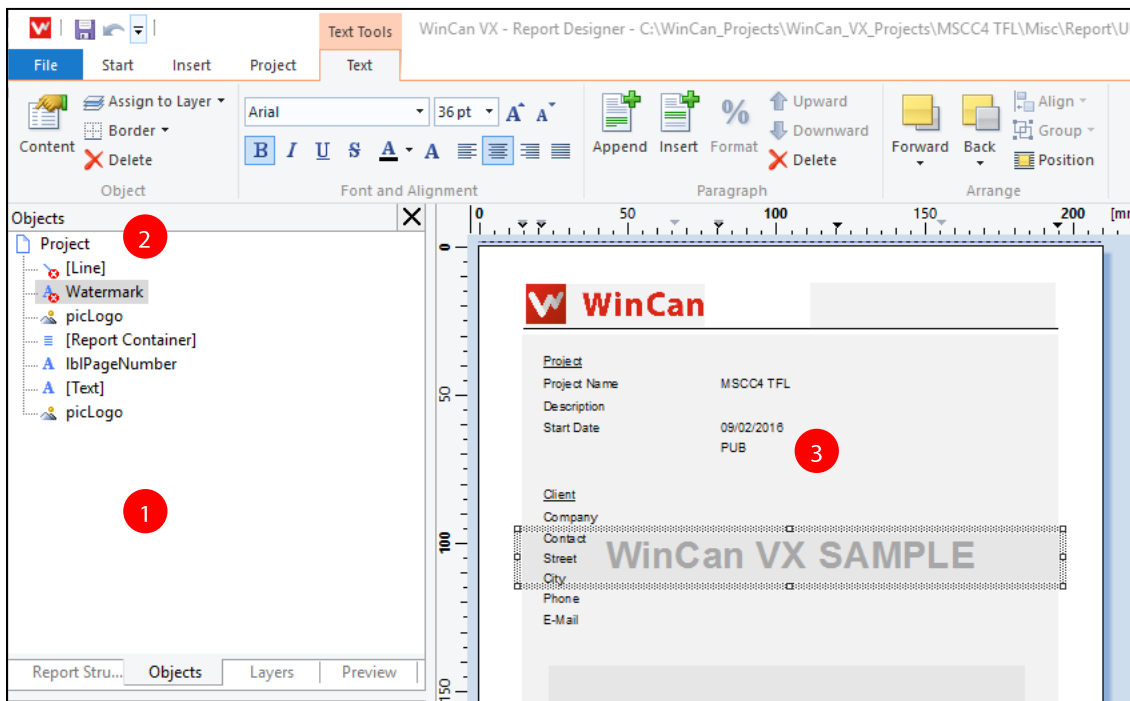


In the example, the *Objects* present include a *line*, *watermark*, *logo image*, *text fields* and the actual *report container*. These objects can be clicked on once to highlight the corresponding item in the layout, and double-clicked to open the object editor.

3. The *Layers* tab allows the user to choose how different versions of the same project design may be used.
4. The *Preview* tab demonstrates how the final output will present to the user.
5. The *Layout* tab option shows the page with its corresponding code.
6. The *Layout Preview* tab shows the locations of the elements.
7. *Preview* is much the same as the previously described *Preview* tab, but it shows in the large window view area.

## 25.2 Moving and Deleting Objects

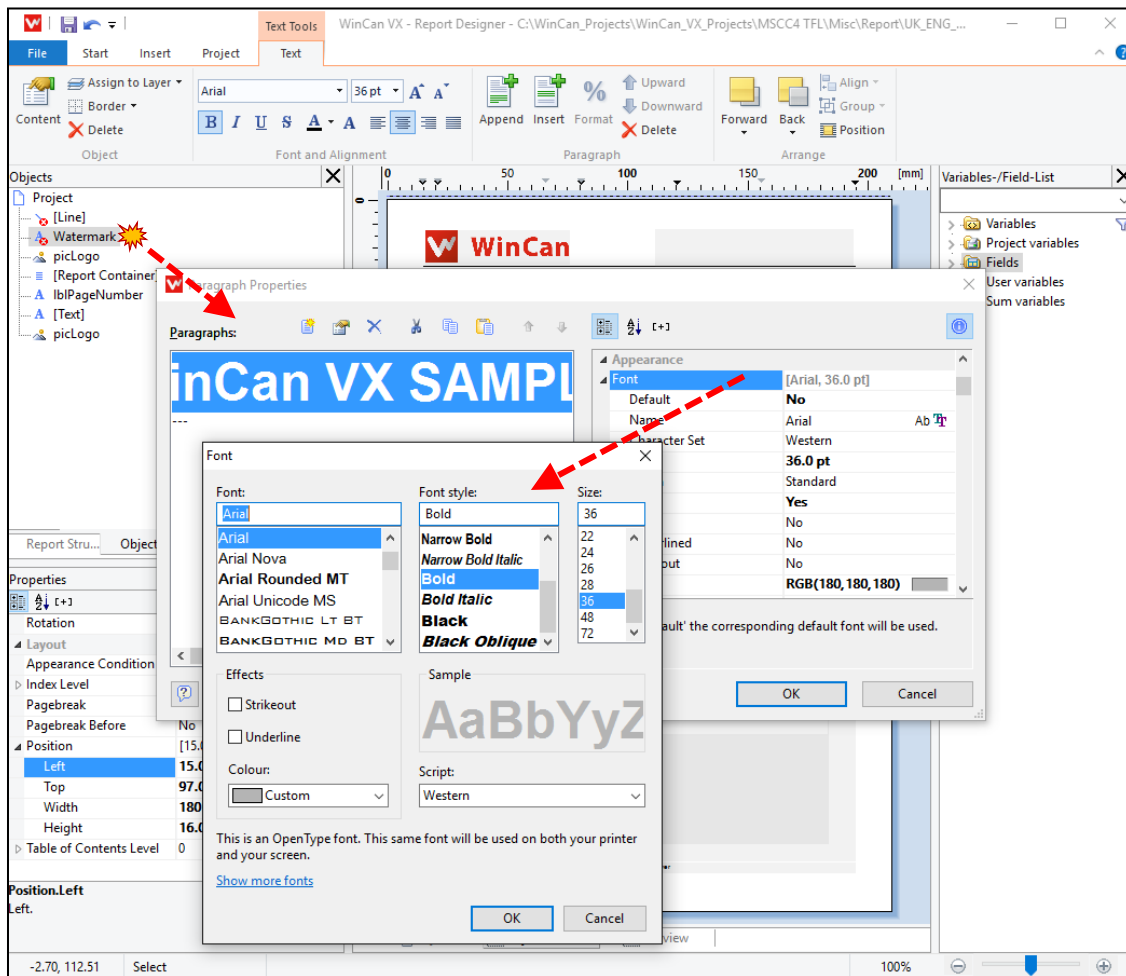
To move an object within the report, first select it (1) in the register of *Objects* (e.g. the object *Watermark* (2)) in this example). In the editing area, the object will be marked with an edge and handles (3). Now, the object can be moved with the mouse as required.



The object can be deleted by pressing the *Delete* key while the object is selected and showing edges and handles.

## 25.3 Editing an Object

To change the font, color or font size of an object, first double click the object name to open the Object Editor.

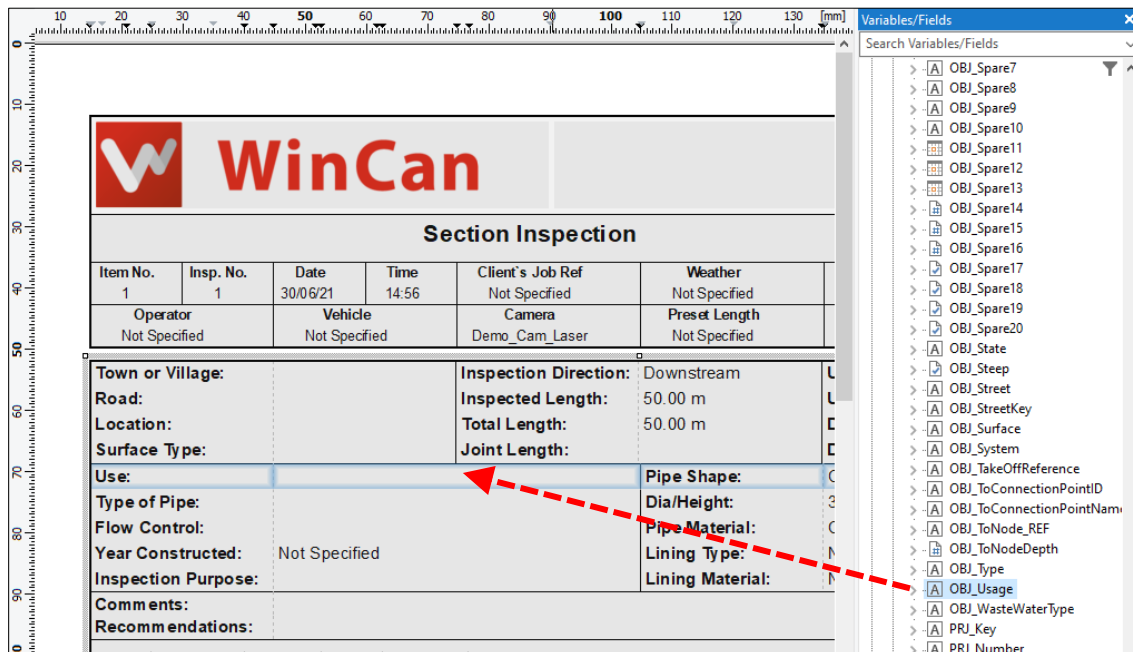


The *Properties* dialogue box opens and now the user can change the appearance of the object in the right half of the menu. Clicking on the font editing button opens the edit buttons for the font. Here, the appearance of the font can be changed and saved by clicking *OK*.

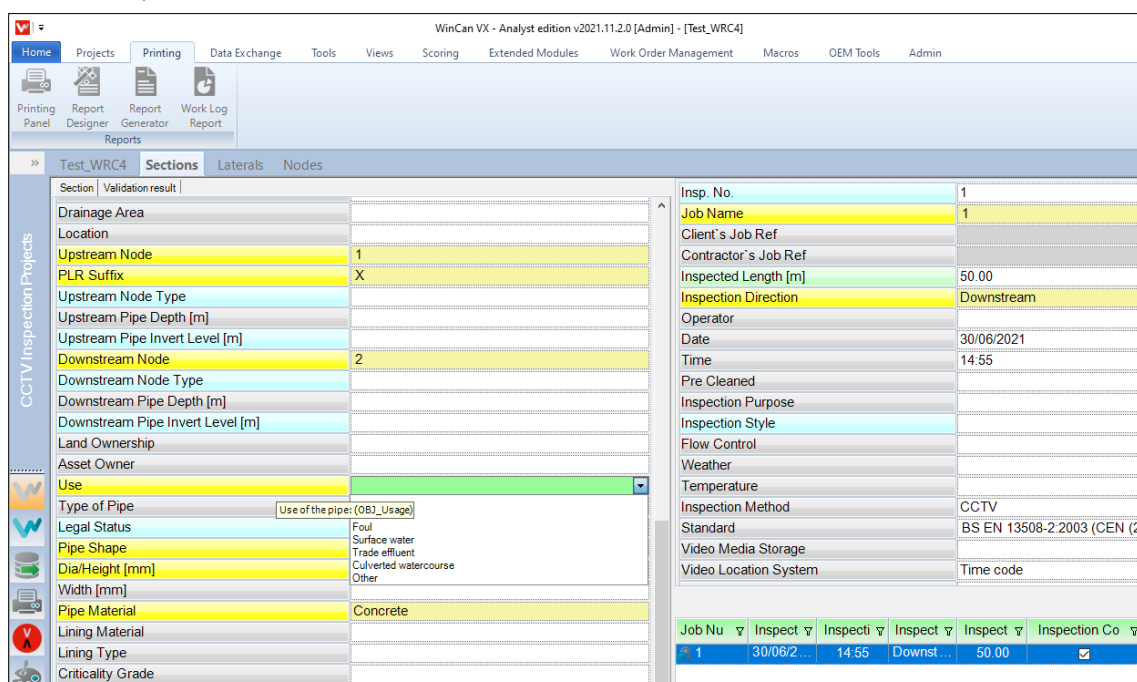
## 25.4 Adding a Field

The Report Editor is a powerful tool that can be used to make all kinds of changes to the printing layouts including adding new fields relating to databases in the WinCan VX report. The process of adding new fields to the reports is complex and detailed, and should only be attempted by suitably trained advanced users or by the local reseller teams. This section is giving an example of all the steps needed to complete a report page with specific fields.

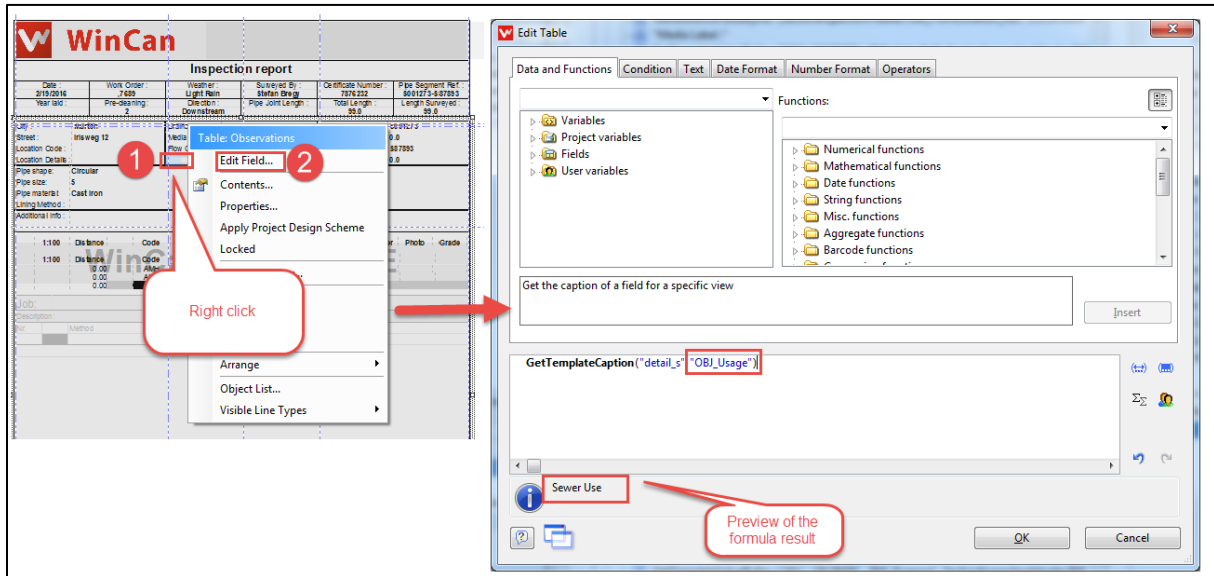
To get the caption as well as the content of the field *Use* shown open the report designer, select the inspection report and drag the corresponding field from the panel *Variables/Field list* at the right directly into the report header view.



As the report designer works with the original database field names you must make sure you really have selected the correct field. To do so open the input mask and hover with the mouse pointer over the field *Use* (*Section Type*, *Usage*) until the original database field name (e.g. *OBJ\_Usage*) pops up in a direct help box:

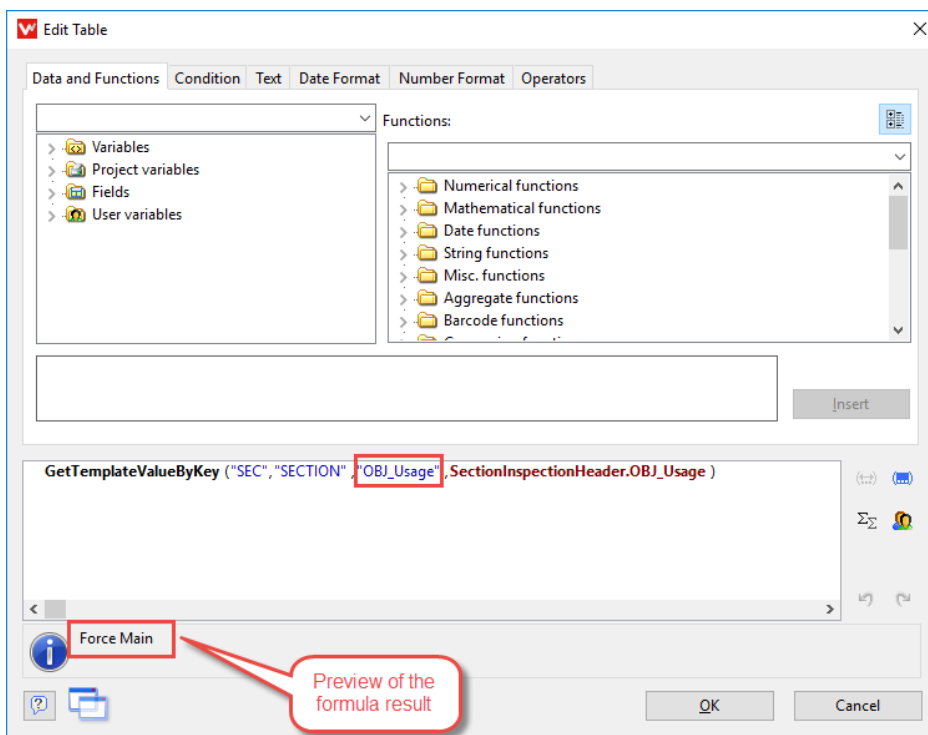


The report designer is always showing two text boxes for each database field. Open the context menu to the **field caption box** and select the command *Edit field* to check whether the field name used in the function corresponds to that one provided by the direct help box in the input mask:



Click OK to confirm any modification.

To show the content of the database field right click on the **field content box** right to the field caption box and select the context menu command *Edit field* to check again whether the field name used in the function corresponds to that one provided by the direct help box in the input mask:




Click OK to confirm any modification.

In order to avoid syntax errors it's recommended to copy existing function or function parts into new text boxes and to change just the field name. The report designer mainly works with the following functions:

- *GetTemplateCaption()* : "Take the field caption directly from a main table"
- *GetTemplateValueByKey()* : "Take the field content directly from a main table"
- *GetTemplateValueByRef()* : "Take the field content from a reference field (e.g. Node Names)"

The **caption** as well as the **content** of the selected database filed finally appear in the header of the inspection report at the preferred location, as illustrated below:

		<b>CDLab AG</b> Irisweg 12, Murten Tel. 026 672 37 37 info@wincan.com			
<b>Inspection report</b>					
Date : 19/01/2010	Work Order : DEMO_US_PACP.1	Weather : Dry	Surveyed By : Stanley Miller	Certificate Number : 6	Pipe Segment Ref. : NY7_PA3
Year laid : 1990	Pre-cleaning : 1	Direction : Downstream	Pipe Joint Length :	Total Length : 51.6	Length Surveyed : 51.6
City : New York	Street : Park Avenue	Drainage Area :	Media Label :	Upstream MH : 3	Up Rim to Invert : 0.0
Location Code : mainstreet	Location Details :	Flow Control :	Sheet Number :	Downstream MH : 4	Down Rim to Invert : 0.0
Pipe shape: Circular	Pipe size: 24	Pipe material: concrete	Lining Method :	Sewer Use: Force Main	Sewer Category : SEC
Additional Info :			Purpose: Owner :		

## Appendix 1: Supported OSD Devices

Device manufacturer	Device type	Supported by (camera manufacturers)
Aries	MegaVOG / VL2001	Aries Industries (US)
Aries	VL5000 and VL5000-W	Aries Industries (US)
CISCREA	CISCREA - Robot	CISCREA (FR)
Cues	PDR2k	-
Cues	ProData 2000	-
Cues	Summit K2	-
Decade Engineering	XBOB-3	Decade Engineering (US)
Decade Engineering	XBOB-4 / XBOB-4 (lat)	Decade Engineering (US)
Deep Trekker	DT340	Deep Trekker (US)
Gejos Kanal-TV	Gejos	Gejos Kanal-TV (DE)
Gullyver	Gullyver	Gullyver, Bremen (DE)
Hydrovideo	HV100	Hydrovideo SA (FR)
Hytec	VSR55	HYTEC (FR), RICO (DE)
Hytec	VSR65	HYTEC (FR), RICO (DE)
IBAK	ControlPanel	IBAK, Kiel (DE)
IBAK	EDE 42/49	IBAK, Kiel (DE)
IBAK	EDE 69	IBAK, Kiel (DE)
IBAK	EDE 7	IBAK, Kiel (DE)
IBAK	SoftControl	IBAK, Kiel (DE)
Ibos	R550	Ibos, Budjeovice (CZ)
Ibos	UNDIP V1	Ibos, Budjeovice (CZ)
IJ robotics	IJX reel	-
IJ robotics	IJX robot	-
Inuktun	VT150	Inuktun (US)
iPEK	DE03SW	iPEK, Sulzberg (DE)
iPEK	DE08CO/CVO	iPEK, Sulzberg (DE)
iPEK	DCX / VisionControl	iPEK Sulzberg (DE)
iPEK	DCX / VC TCP	iPEK, Sulzberg (DE)
I.S.T.	I.S.T - Robot	-
ITDV	ITDV - Robot	-
itv	HD-DE	-
ID-tec	ID-tec	-
JT	Kanda	JT, Lindau (DE)
JT	SGKST	JT, Lindau (DE)
KANRO	KANRO	-
Kummert	Kummert - OSD	Kummert (DE)
Kummert	Profi3 Local	Kummert (DE)
Kummert	Profi3 Remote	Kummert (DE)
kw	HDC-01	-
kw	PT90	-
Mini-Cam	CCU	MiniCam (UK)
n.a.	GPS	-
NED	TNN500	-
Optimes	Optimes	Optimes Engineering, Gera (DE)
Optronic	JetCam	Optronic
Phidget	Encoder / Encoder (lat)	-
Pearpoint	P320/P377	-
Pearpoint	P350	-
Pearpoint	P550	-
Pipetronics	Pipetronics - Robot	Pipetronics

## Appendix 1: Supported OSD Devices

Pipetronics	Pipetronics – Robot2 TCP	Pipetronics
PS	SCEC	-
PS	SVC1	RICO, Kempten (DE)
PS	SVC2	RICO, Kempten (DE)
PS	VTG2	RICO, Kempten (DE), Rausch, Noise
Q.I.	QI TKC	-
Rausch	Mobile Pro	Rausch (DE)
Rausch	RCA4	Rausch (DE)
RICO	Tiny PC Control	RICO, Kempten (DE)
Riezler	RiVision	Riezler GmbH (DE)
Robocana	Robocana OSD	Robocana (FR)
Robocana	Robocana Robot	Robocana (FR)
Sensoray	Sensoray 2253	Sensoray Corp. (US)
Shenzhen	Singa	-
Sibort	REMIERE PRO 3	-
Spering	cck	RIMTEC, RITEC GmbH
Spering	ITV300	Riezler GmbH, (DE); Aries Ind. (US)
Spering	uCDE / DEPC 1	RIMTEC, RITEC GmbH
Troglotech	T804	Troglotech (AU)
Visatec	WKI	Noise, Rausch, RITEC, NICOM, JT
Vivax	vCam-5	Vivax (IT)
Vretmaskin	Pushspider	Vretmaskin (SE)
WinCan Deutschland	TG09	WinCan Deutschland (DE)
WinCan Europe	IP08	WinCan Europe (UK)
WinCan Europe	QI Remote	WinCan Europe (UK)
WinCan Europe	QSB-S cnt / QSB-S cnt (lat)	WinCan Europe (UK)
WinCan	WinCan Dummy OSD	WinCan (CH)
WinCan	WinCan Software OSD	WinCan (CH)
WinCan	WinCan Virtual OSD	WinCan (CH)
WP	Vidisys	-