

Quantm 8.3 Release Notes

Build 8.3.1.2



Enhancements

The Quantm 8.3 release includes these new features and enhancements:

- Use the new CO₂ Calculator to forecast carbon dioxide emissions that will be generated during the construction of alignments in your project. Enter expected CO₂ output values for moving materials, preparing land, and constructing structures along each alignment. In addition, you can forecast the CO₂ emissions that will be produced by traffic using the new alignment. The calculator is currently available for roads only. ([details](#))
- You can now set a minimum radius lower than 35 meters for horizontal alignments! ([details](#))

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Bug Fixes

And fixes for these resolved issues:

- The default maximum height of retaining walls had to be 9999 meters. Now any height is allowed. ([details](#))
- In some cases, installing Quantm 8.3 removed the previously configured license key, making the software unusable. ([details](#))
- You could not change the wall cost. ([details](#))



Details

- **QTM-14:** CO₂ Calculator

To calculate CO₂ emissions for the construction and usage of a specific alignment in your project, follow these steps:

1. On the menu, select Data > Cost Parameters.
2. On these tabs, enter CO₂ values per meter²/mile² (as applicable):
 - Global tab - emissions for moving haul, dump, borrow, and fill, materials.
 - Template Materials tab - emissions for construction per material.
 - Bridge and Tunnels tabs - emissions for constructing these specific structures.
 - Areas tab - emissions for preparing site areas

Note: You would typically get average local CO₂ emissions data from your regional transportation authority.

3. Right-click the alignment you want to report on and select CO₂ Report.
4. In the Traffic Composition section, enter percentages for the types of vehicle traffic (cars and trucks) that are expected to use the alignment.

CO₂ Report ✕

Alignment:	Alignment
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Traffic Composition	
Cars (Petrol)	<input type="text" value="50.000"/> %
Cars (Diesel)	<input type="text" value="20.000"/> %
Trucks	<input type="text" value="15.000"/> %
Cars (Other)	<input type="text" value="10.000"/> %
Cars (Emission Free)	<input type="text" value="5.000"/> %
Total	<input type="text" value="100.00"/> %

Traffic Flow	
Average Speed	<input type="text" value="100"/> (km/hr)
Daily Traffic Flow	<input type="text" value="10000.000"/>

Environmental Impact	
Fuel Consumption	<input type="text" value="6164.545"/> litres
CO ₂ Emissions	<input type="text" value="14.601"/> tonnes
<input checked="" type="radio"/> Daily	<input type="radio"/> Annual

<input type="button" value="Recalculate"/>	<input type="button" value="Recalculate All"/>
<input type="button" value="Report"/>	<input type="button" value="Vehicle Parameters"/>
<input type="button" value="OK"/>	<input type="button" value="Cancel"/>

Note: The numbers shown are samples and do not reflect actual values.

5. In the Traffic Flow section, enter projections for the average speed and traffic volume. The total CO₂ emissions are reported in the Environmental Impact section; you can report as daily or annual. Weekdays and weekend days are treated the same.

- If desired, you can also show these values in a Microsoft Excel spreadsheet by clicking the Report button.

The screenshot shows an Excel spreadsheet titled "direct export from co2 report.csv - Excel". The spreadsheet contains data for traffic composition and alignment details. The traffic composition data is as follows:

Item	Value (%)
Daily Traffic Flow	10000
Average Speed (km/hr)	100
Traffic Composition (%)	
Cars (Petrol)	50.0
Cars (Diesel)	20.0
Cars (Other)	16.0
Trucks	15.0
Cars (Emission Free)	5.0
Total	100.0

The alignment data table is as follows:

Alignment	Cost	Length	Fuel Consumption (Daily)	CO2 Emissions (Daily)	Cut	Borrow	Fill	Dump	Template Materials	Mass Haul	Wall	Culvert	Bridge	Tunnel	Area	Linear	Total
	kr	km	Litres	tonnes													
CO2_02	3081838361	28525.250	326992	775	21624181	0	14443093	6844676	8173633	24768686	176622	0	0	0	1291760	0	77322651
CO2_01	2166349204	30659.275	351567	833	26555805	0	18993068	7101110	9682878	31096163	482711	0	0	0	1590208	0	95501942

- Select Alignment Summary and review the CO₂ emissions values and percentages (%) for each of the categories you filled, as well as the total. The Summary also reports on the future CO₂ emissions from traffic (from the values entered in the CO₂ Report dialog).

The screenshot shows the "Alignment Comparison" dialog box with the following data:

Alignment na	Length	kr	Color	CO2 (Construction)	CO2 (Traffic)	CO2
CO2_01	30 659	2 170 000 000	[Blue]			95 500 000
CO2_02	28 525	3 080 000 000	[Blue]			77 300 000

Below the dialog is the "Alignment Summary" window, which displays a detailed breakdown for alignment "CO2_01":

Item	Quantity	kr	%	CO2
Source				
Cut (m ³)	2 660 000	176 000 000	8	26 600 000
Tunnel Debris (m ³)	8 000	0	0	0
Import (m ³)	0	0	0	0
Borrow (m ³)	0	0	0	0
Destination				
Fill (m ³)	1 900 000	57 000 000	3	19 000 000
Export (m ³)	0	0	0	0
Dump (m ³)	710 000	42 600 000	2	7 100 000
Template Materials		303 000 000	14	58 100 000
Mass Haul (m ³ km)	6 220 000	31 100 000	1	31 100 000
Ret. Wall (m ²)	9 654	48 300 000	2	483 000
Culvert (m)	0	0	0	0
Bridge (m)	2 414	1 130 000 000	52	0
Tunnel (m)	160	73 600 000	3	0
Footprint Area (m²)		309 000 000	14	1 590 000
Linear (m)	30 659	0	0	0
Cadastral	0	0	0	0
Fixed Cost		0	0	0
Construction Cost		2 170 000 000		95 500 000
Traffic Cost		0		99
Total Cost		2 170 000 000		95 500 099

At the bottom of the summary window, there are sections for "Geometric" and "Warnings VC, HS, VS, HT, IS".

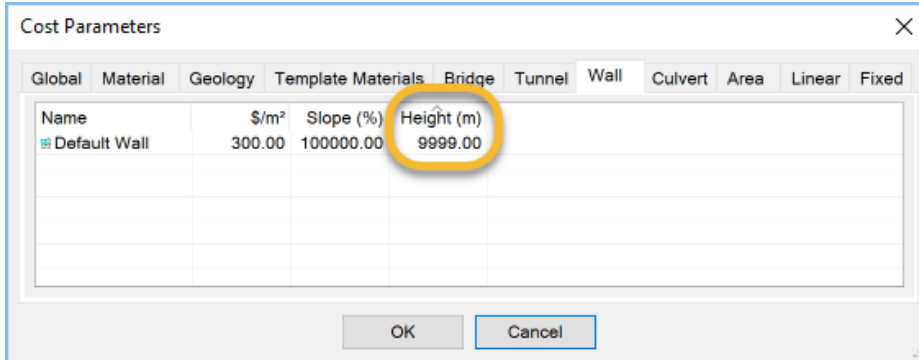
M-15: Horizontal alignment radius - To set the minimum radius allowed for a horizontal alignment, select Data > Geometric Parameters on the menu. In the Curves group on the Horizontal tab, edit the value in the Radius (m) field.

The image shows a screenshot of the "Geometric Parameters" dialog box in a software application. The dialog has a title bar with a close button (X). Below the title bar, there is a "Geometry type" section with a list box containing "Standard geometry" (selected with a blue checkmark). Below this is a tabbed interface with four tabs: "Horizontal", "Vertical", "Grade", and "Template". The "Horizontal" tab is active. Under the "Horizontal" tab, there are several sections:

- Curve Limits:** This section contains a "Radius (m)" field with a value of "35". To its right are "Minimum:" and "Desired:" labels, each followed by a checkbox and a "0" value. The "Radius (m)" field and its associated "Minimum:" label are highlighted with a yellow circle.
- Back to Back Curves:** This section contains two checked checkboxes: "Same Direction" and "Opposite Direction".
- Superelevation:** This section contains a "Maximum (%)" field with a value of "7".
- Transition:** This section contains a "Transition Type" dropdown menu set to "Clothoid", a "Length Convention" dropdown menu set to "Linear", and a "Trans. Length at Min Radius" field with a value of "45".
- Straights:** This section contains a "Horizontal (m)" field with a value of "50". To its right are "Minimum:", "Desired:", and "Maximum:" labels, each followed by a checkbox and a "0" value.

At the bottom of the dialog, there are two buttons: "OK" and "Cancel".

- [QTM-21](#): Retaining wall height - To change the maximum height of retaining walls, select Data > Cost Parameters on the menu. Then click the Wall tab and edit the Height for any wall.



- [QTM-38](#): Installing the Quantm 8.3 MSI file to upgrade an 8.1 installation deleted the older HASP license key without upgrading it to a new, required HASP key (if you upgraded from version 8.2, the newer HASP license was installed).
- [QTM-41](#): When you went to the Cost Parameters dialog tab shown above, you could also not edit wall costs if you had not previously entered a CO₂ cost, even if you were not calculating CO₂ emissions.