



The modern, fast and easy to use risk analysis tool

Getting Started Guide in Version 4.2

BowTie Pro™
Westhill Business Centre
Arnhall Business Park
Westhill, Aberdeenshire,
AB32 6UF, UK

Tel: +44 (0) 1224 51 50 94

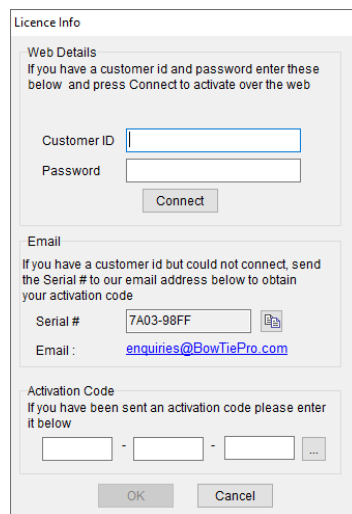
enquiries@BowTiePro.com
www.BowTiePro.com

Quick Start Guide

If you have just installed BowTie Pro™, Welcome!

The program will open whenever you double click on a BowTie Pro™ data file which will have the extension .BOW or by selecting the icon from “Programs” -> “BowTie Pro” from the start menu.

If you have never used BowTie Pro™ before the licensing screen will appear. If you have been provided with a customer ID number and password enter these and press “Connect” to obtain the licence from our website.



Licence Info

Web Details
If you have a customer id and password enter these below and press Connect to activate over the web

Customer ID

Password

Email
If you have a customer id but could not connect, send the Serial # to our email address below to obtain your activation code

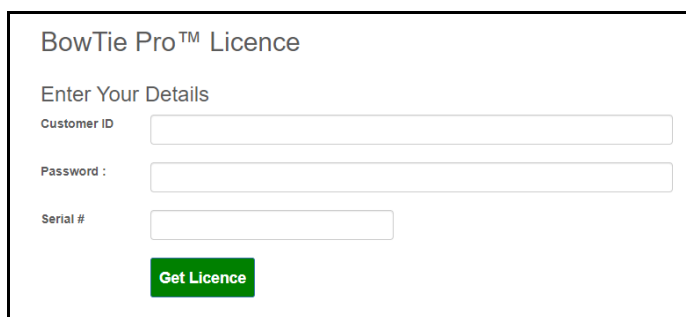
Serial # 

Email : enquiries@BowTiePro.com

Activation Code
If you have been sent an activation code please enter it below

- -

Sometimes due to firewalls and other company restrictions this process fails. The licence can also be obtained using an internet explorer at <https://customers.BowTiePro.com/Licencing/> and filling in the details as shown.



BowTie Pro™ Licence

Enter Your Details

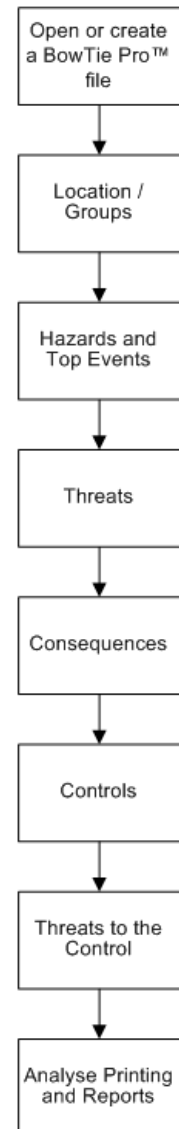
Customer ID

Password :

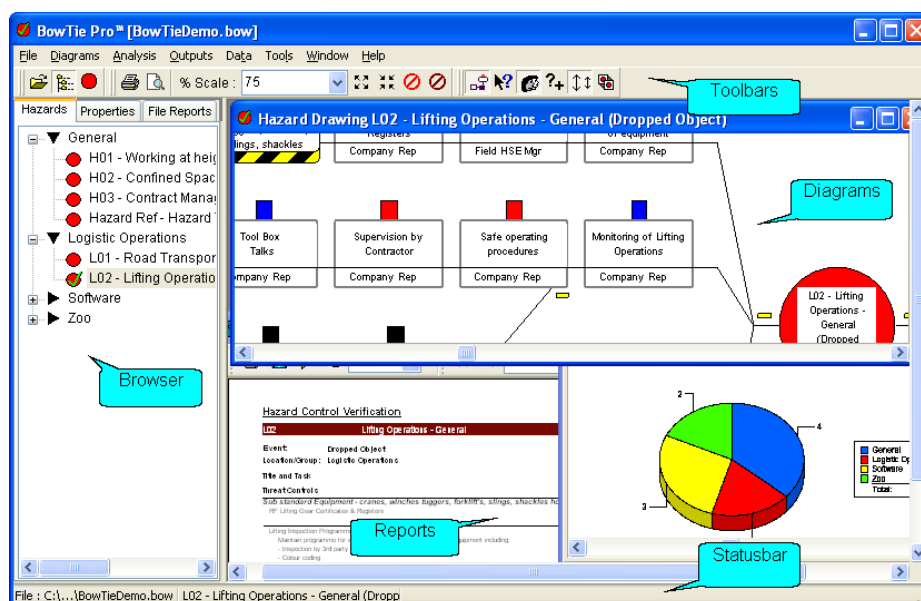
Serial #

You will note that the Serial# on the screen must be entered on the page. Alternatively using the link provided, you may email us remembering to include your details and we will email back your licence

Covered in this guide



After starting BowTie Pro™, the following screen will appear.



BowTie Pro™ always remembers the last file that was opened or, if it's the first time BowTie Pro™ has been used, it will open the example file.

When working in BowTie Pro™ changes will be saved automatically.

Step1 – Opening and creating files

Creating:

Creating a file can be done by selecting "File" -> "New" then enter a name for the new file and a location using a standard Microsoft save box. This will provide an item called "default" in the hazard browser on the left hand side of the screen.

Note: When you create a file the "lookup" information needs to be populated. Please refer to the BowTie Pro™ manual for details on these tasks.

Opening:

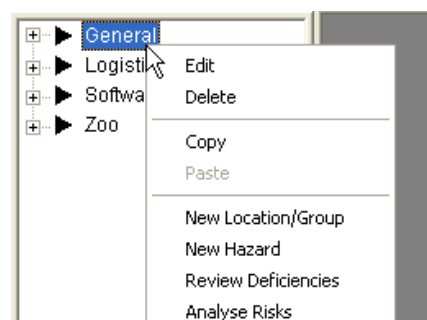
To open an existing file in BowTie Pro™ select File->Open. You will now see a standard Microsoft window to select a file. When you select a file the Left hand hazard browser will be populated with the Location/Groups and the Hazards from the file.

Step 2 – Location / Groups

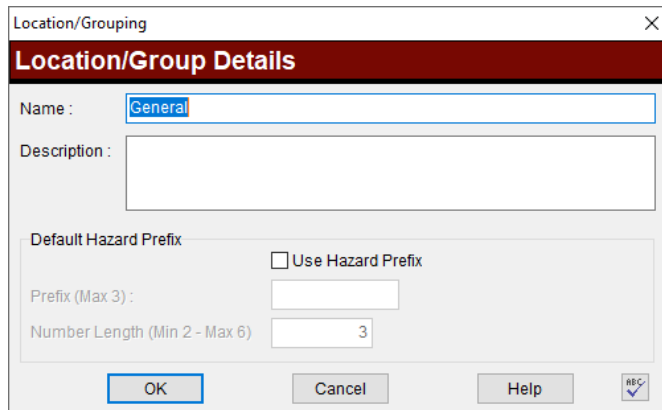
On the far left hand side of the screen is the hazard browser. The first level is the Locations or Groups with subsequent Hazards sitting under the Locations/Groups. This allows you to categorise your Hazards.

To edit a Location/Group, hover the mouse over the desired item and then right click your mouse. Now select the top most item from the visible popup menu called "Edit".

To add a new item select anywhere on the browser and right click and then select the menu item called "New Location/Group"



You will now see the following screen:



The 'Location/Grouping' dialog box has a title bar with a close button. Below the title bar is a red header with the text 'Location/Group Details'. The form contains the following fields and controls:

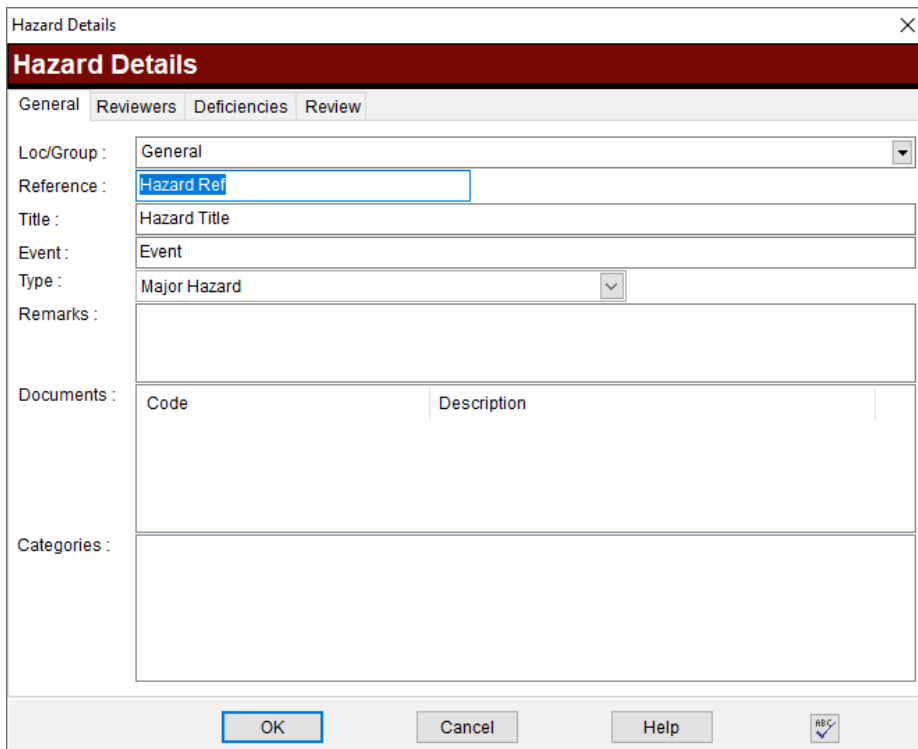
- Name :** A text box containing the word 'General'.
- Description :** A large empty text area.
- Default Hazard Prefix:** A section containing:
 - ☐ Use Hazard Prefix
 - Prefix (Max 3) :** A text box.
 - Number Length (Min 2 - Max 6) :** A text box containing the number '3'.
- Buttons:** 'OK', 'Cancel', 'Help', and a small 'ABC' icon with a checkmark.

Enter a name. After pressing 'OK' the Location/Group will be added to the browser on the left hand side of the screen.

Step 3 – Hazards and Top Events

Expanding an existing Location/Group on the left hand side browser will display any Hazards below it.

To create a new Hazard select a Location/Group as described above and right click on the browser to obtain the menu then select "New Hazard"



The 'Hazard Details' dialog box has a title bar with a close button. Below the title bar is a red header with the text 'Hazard Details'. The form contains the following fields and controls:

- Tabs:** 'General' (selected), 'Reviewers', 'Deficiencies', 'Review'.
- Loc/Group :** A dropdown menu showing 'General'.
- Reference :** A text box containing 'Hazard Ref'.
- Title :** A text box containing 'Hazard Title'.
- Event :** A text box containing 'Event'.
- Type :** A dropdown menu showing 'Major Hazard'.
- Remarks :** A large empty text area.
- Documents :** A table with two columns: 'Code' and 'Description'.
- Categories :** A large empty text area.
- Buttons:** 'OK', 'Cancel', 'Help', and a small 'ABC' icon with a checkmark.

To edit a hazard hover over the Hazard on the browser, right click with the mouse then select "Edit" from the menu, to obtain the following screen:

- Enter a reference, title and event for the hazard. These are displayed on the diagram and are mandatory.
- The Type will default to Major Hazard but this can be changed as required
- The remarks only appear on printouts and can be added later.
- Linked documents can be added later
- Hazard categories define what type of hazard you are evaluating. Many categories can be added
- Now press OK button.

To open a hazard diagram move the mouse over the hazard icon on the browser  and double click. The diagram will appear on the right hand side and the icon in the browser will change to .

Note: Up to 6 diagrams can be open at once. If a hazard does not open, check that there are some diagrams available.

Once the diagram is open Threats and Consequences can be added and edited.

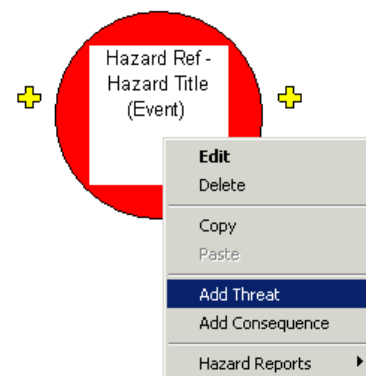
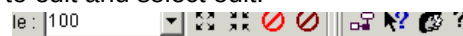
The Threats, Consequences, Controls and Threats to the Control can all be added using the Drawing Additions tool menu. The appropriate items will become available as an item is selected

Step 4 – Threats

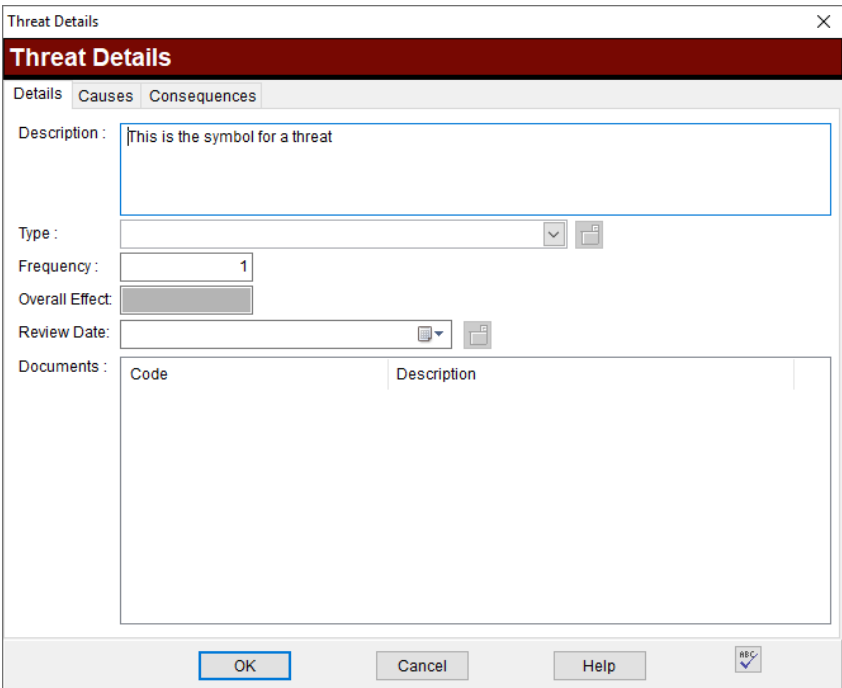
To view the Threats click on the plus  to the left hand side of the red hazard circle.

To add a new Threat, move the mouse over the hazard and right click with the mouse. A menu will appear from which select “Add Threat”. Threats can also be added from the Drawing Additions menu bar by pressing the .

To edit a Threat, expand the Threats then right click on the Threat you want to edit and select edit.



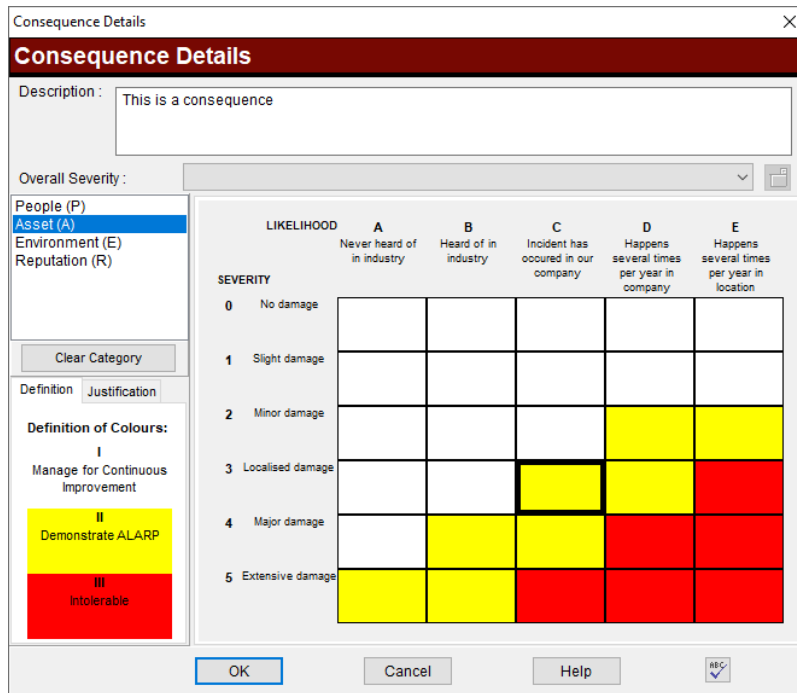
This will display the Threat screen as shown:



Enter a description, this is mandatory. The Type is selected from a predefined list and determines the colour assigned to the threat on the diagram. Once this is done press OK.

Step 5 – Consequences

Consequences are added and manipulated in a similar way to Threats except they are on the right hand side of the hazard.



Consequence Details

Description :

Overall Severity : ▼

People (P)
Asset (A)
 Environment (E)
 Reputation (R)

Clear Category

Definition Justification

Definition of Colours:

I
Manage for Continuous Improvement

II
Demonstrate ALARP

III
Intolerable

		LIKELIHOOD				
		A	B	C	D	E
		Never heard of in industry	Heard of in industry	Incident has occurred in our company	Happens several times per year in company	Happens several times per year in location
SEVERITY	0 No damage					
	1 Slight damage					
	2 Minor damage					
	3 Localised damage					
	4 Major damage					
	5 Extensive damage					

OK Cancel Help ABC

To add a new Consequence, open the hazard diagram, move the mouse over the hazard and right click with the mouse. A menu will appear from which select "Add Consequence". Consequences can be added from the Drawing Additions menu bar by pressing the  button.

To edit a Consequence expand the Consequences then right click on the Consequence you want to edit and select edit.

Enter a description. The risk assessment does not need to be performed at this stage.

Note: the risk matrix can be defined as appropriate. Please refer to the BowTie Pro™ manual for details on performing this task.

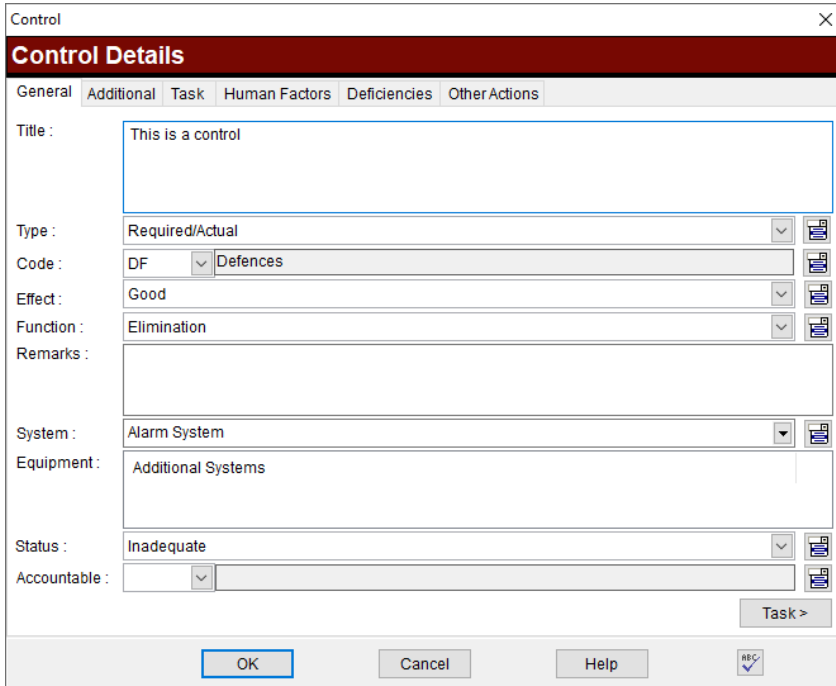
Step 6 – Controls

Controls can be added to both Threats and Consequences. On the left hand side of the bowtie diagram the Controls prevent the Threat from causing the hazard. On the right hand side of the bowtie diagram the Controls stop the hazard causing the Consequence, in the event that the hazard has been breached.

To create a Control, open up the bowtie diagram and then right click on the Threat or Consequence for which a Control is required. This will bring up a menu which will allow to select "Add Control" from the menu. Controls can also be added from the Drawing Additions tool bar by pressing the  or  button.

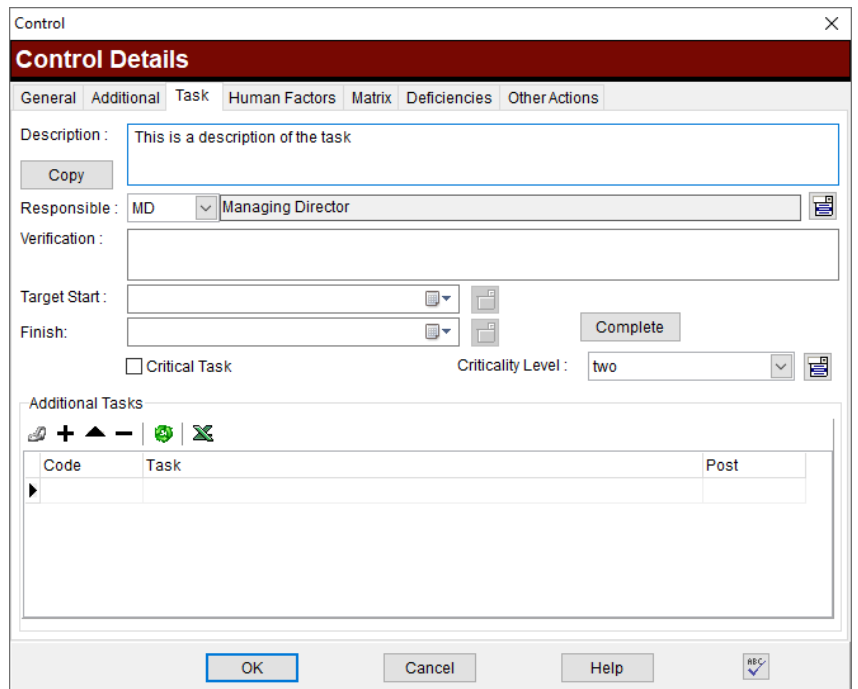
To edit a Control from the bowtie diagram select the desired Control and then right click on it then select the "Edit" option.

The Controls are where the real work on the diagram occurs.



- The Control Title is displayed on the diagram and is mandatory.
- The Type is selected from a pre defined list and determines the colour assigned to the box above the text on the diagram
- The Code is selected from the Control codes and is displayed at the top right hand corner on the diagram.
- The Effect is the flag on the top right of the control on the diagram
- The Function, Cost and Efficiency can be added.
- Equipment can also be associated.

- The Task determines what needs to be done to manage the Control. This is not displayed on the diagram
- The Responsible Person is displayed at the bottom of the Control in the diagram.
- Documents and verification are not displayed on the diagram. These, along with the Title and Task, are free text that can be entered.
- Target start and finish times can also be added.
- A task can be identified as “Critical” and its Criticality Level using the boxes

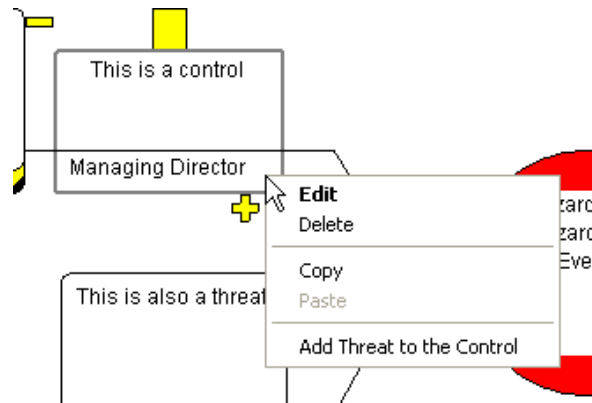


Code	Task	Post
▶		

Step 7 – Escalation Factors/Threats to the Control

Any threat that has the ability to d cause the Control to fail are called Escalation Factor or “Threats to the Control”.

Check that the diagram has view “Threats to the Controls” displayed by checking that the  button is down. To add them select the desired Control and then right click with the mouse and select “Add Threat to the Control” This can also be achieved by pressing the  button on the Drawing Additions menu bar



Step 8 – Making the most of the graphical diagrams

Customising the Diagrams:

Now that you have created a bowtie the diagram will be displayed on the screen. BowTie Pro™ allows an enormous amount of customising. Full details on this process can be found in the document [Customising BowTie Pro™ Diagrams](#) on the BowTie Pro website



The screen is opened up by pressing the  button. The screen will allow the changing of items such as:

- Background colour
- Shadows on the boxes
- If the boxes expand to fit all the text
- If all the boxes have a unique number on them
- Font and text layout
- How each control looks
- How the threats are displayed
- How the Consequences are displayed

Filtering the Diagrams:

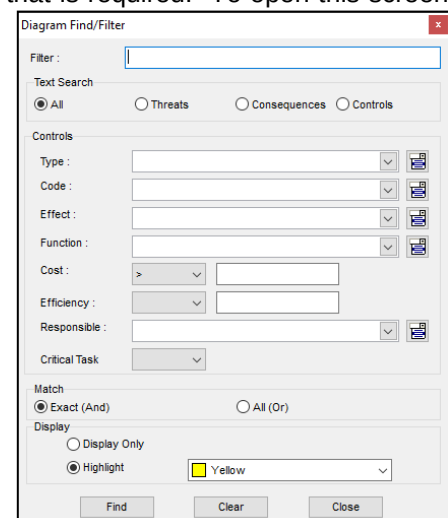
The diagrams can be filtered to only show the controls that meet the criteria that is required. To open this screen press the  button to display the following screen

The Criteria can be set to only look at

- Threats
- Consesequences
- Controls
- Everything

Once the required criteria is selected check either to hide other objects or highlight the criteria that is met.

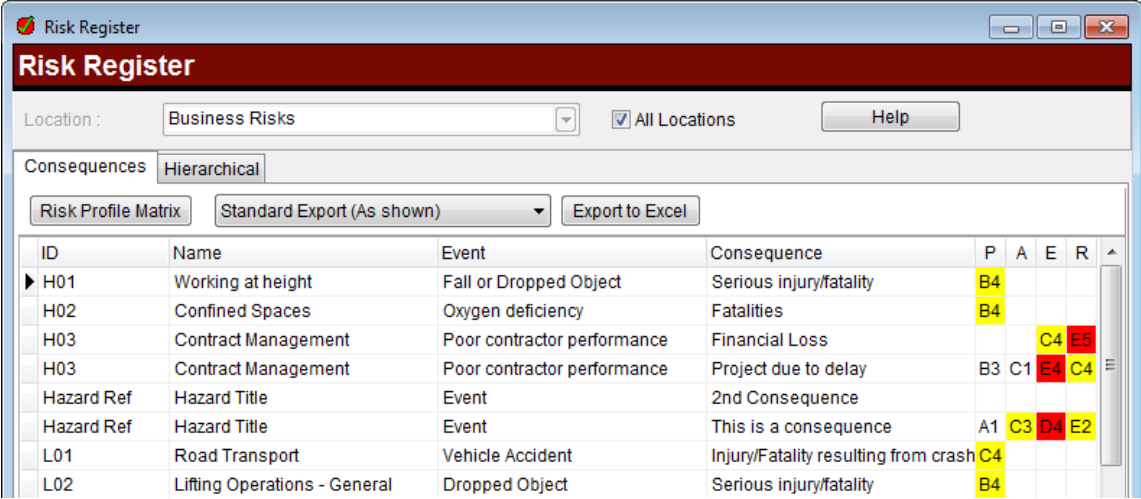
Press the Filter button at the bottom to apply the filter which will remain on until the Clear button is pressed to remove the filter.



Step 9 – Analysing the file

BowTie Pro™ has many advanced analysis techniques such as Layers of Protection (LOPA). These are covered in other documents but a good starting point to all analysis techniques is the Risk Register. The Risk Register is similar to a hazard register.

The Risk Register is opened by going Analysis -> Risk Register on the menu bar.



ID	Name	Event	Consequence	P	A	E	R
H01	Working at height	Fall or Dropped Object	Serious injury/fatality	B4			
H02	Confined Spaces	Oxygen deficiency	Fatalities	B4			
H03	Contract Management	Poor contractor performance	Financial Loss			C4	E5
H03	Contract Management	Poor contractor performance	Project due to delay	B3	C1	E4	C4
Hazard Ref	Hazard Title	Event	2nd Consequence				
Hazard Ref	Hazard Title	Event	This is a consequence	A1	C3	D4	E2
L01	Road Transport	Vehicle Accident	Injury/Fatality resulting from crash	C4			
L02	Lifting Operations - General	Dropped Object	Serious injury/fatality	B4			

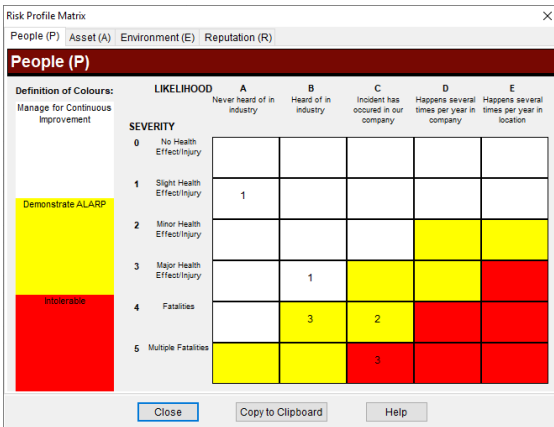
The screen will allow you to order the items simply by pressing the column title. In this way you can order by risks or by the assigned name.

Double clicking on an item will bring up the consequences screen and allow you to edit the consequence and the risks assigned.

Right clicking on the grid allows:

- Editing the selected hazard
- Opening the hazard diagram
- Adding new consequence to the selected hazard
- Editing the consequence

From this screen you can view the Risk Profile Matrix.



		LIKELIHOOD				
		A	B	C	D	E
		Never heard of in industry	Heard of in industry	Incident has occurred in our company	Happens several times per year in company	Happens several times per year in location
SEVERITY	0 No Health Effect/Injury					
	1 Slight Health Effect/Injury	1				
	2 Minor Health Effect/Injury					
	3 Major Health Effect/Injury		1			
	4 Fatalities		3	2		
	5 Multiple Fatalities			3		

The Risk Profile Matrix allows a view the number of times each box is used in the Risk Matrix by category.

Other analysis modules include:

- Critical Task Analysis
- Document usage Analysis
- Post usage Analysis
- Deficiency Management
- Boundary Analysis (MOPO)
- Layers of Protection (LOPA)

Step 10 –Print and Report and Export

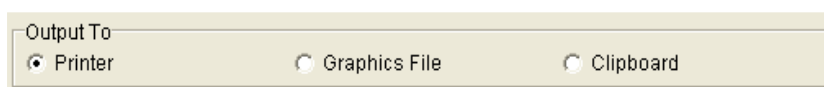
From the above steps we can see that we can easily build up our bow-tie diagram using BowTie Pro™, however the real strength of BowTie Pro™ is its analysis and reporting options.

The data entered into the diagram can be analysed in a range of different ways with different tools for analysis such as Risk Registers

Printing/Saving a diagram:

BowTie Pro™ can not only print the diagrams it can generate the diagrams to a range of picture formats including JPG, BMP, GIFF, TIFF, PNG etc as well as being able to be copied to the windows clipboard.

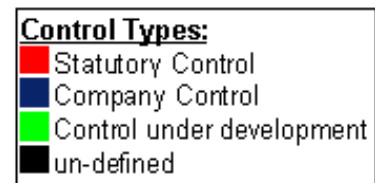
Open up the diagram you wish to print/export and expand the diagram to display the information required on the resulting printout or image.



Press the print button  and the print screen will be displayed. On the general tab select the desired destination of the output. This will change the rest of the screen.

- If graphic file is selected add the “file name” in the “Graphic file”.
- If printer, change the printer select the printer required by pressing the “Properties” button and in the “scaling” section select “Fit to” one page so that it does not straddle multiple pages.

Now select the “Title/Legend” tab and select “Include a Control box” and “Include a control type legend” at the bottom of the screen.



Now select OK at the bottom and the output will go to the desired location. If it is a graphics file BowTie Pro™ will ask if you want to see the picture once it is printed.

Reports:

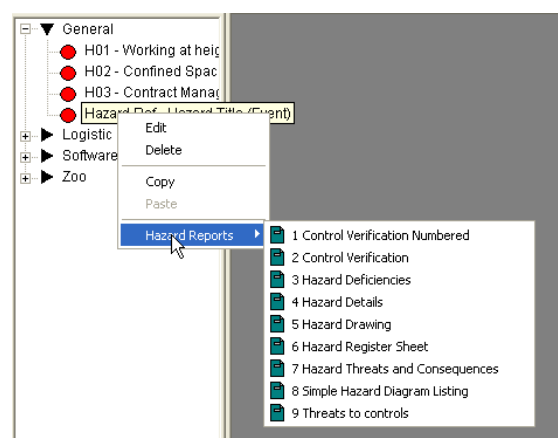
There are two different types of reports; hazard reports that just show the details for a hazard, and file reports that show data analysed across the file, such as the critical task listing. With a range of well over fifty different reports provided as standard including graphs, quality checks and analysis these deal with most circumstances for the hazard or a file as a whole.

Hazard Reports: To display a hazard report, hover over the hazard that for which a report is required from the browser on the left hand side and right click with the mouse.

Select the “Hazard Report” menu option from the list of items. This will now show all available reports for a hazard.

Select the one you want to display and it will open the report on the right hand side.

Note: Only 5 reports can be open at any one time. Before opening a report ensure that there are 4 or less reports open.



File Reports: To print a file report first select the File Reports tab from the top of the browser display on the left hand side.



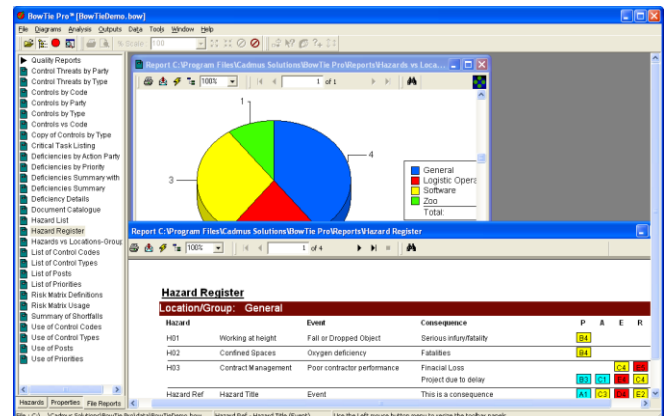
A list of file reports will be displayed. The “Quality Reports” can be expanded to ensure that the quality of the analysis is maintained.

Most of the reports in this section are analysis of the data entered into multiple bowties.

The reports come in many formats and there is the ability to display up to 5 reports at any one time.

From any report there is the ability to easily print or export to a wide range different formats such as Word, Excel, PDF file, web pages etc

There are many other ways to analyse the data that has been put into the system full details of which can be found in the BowTie Pro™ manual. Once all the risks entered into the Consequences have been may be of interest to go into the Risk Profiler by selecting “Analyse”-> “Risk Profiler” from the menu bar.



Exporting a bowtie to a website

This exports a diagram as a static item to a website but still allowing you to navigate around the diagram once the bowtie is exported.

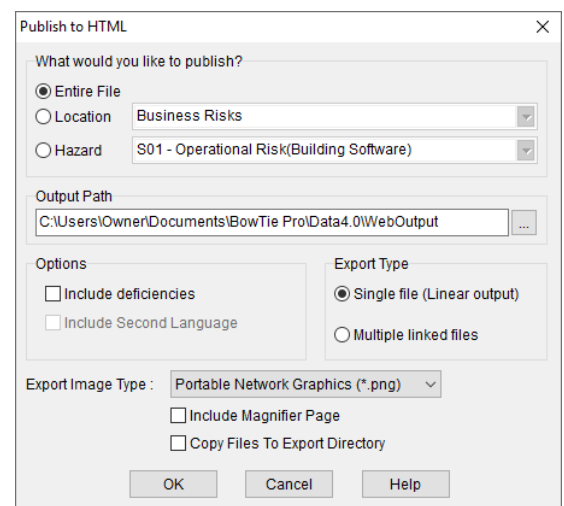
Goto “Outputs” -> “Publish to HTML” Select the hazard that is to be exported and then press OK.

Select the file name and the location of the files.

This will now save the full diagram and all the text to a file which can be published on your website.

An example can be found at <http://www.bowtiepro.com/examples/htmlexport/hazardref.html>

There are many other export functions, details of which can be found in the BowTie Pro™ manual.



The 'Publish to HTML' dialog box is shown. It has the following fields and options:

- What would you like to publish?**
 - ☒ Entire File
 - ☐ Location: Business Risks
 - ☐ Hazard: S01 - Operational Risk(Building Software)
- Output Path:** C:\Users\Owner\Documents\BowTie Pro\Data4.0\WebOutput
- Options:**
 - ☐ Include deficiencies
 - ☐ Include Second Language
- Export Type:**
 - ☒ Single file (Linear output)
 - ☐ Multiple linked files
- Export Image Type:** Portable Network Graphics (*.png)
 - ☐ Include Magnifier Page
 - ☐ Copy Files To Export Directory

Buttons: OK, Cancel, Help

Exiting the program

To exit BowTie Pro™ choose “File” -> “Exit” or press the close button on the title bar of the window.

Appendix 1: Frequently used Toolbars

Program Toolbar

	Name	Description
	Open File	Open a BowTie Pro™ file
	Browser	Show/Hide the browser on the left hand side
	Diagrams	Open a Hazard Diagram

Diagrams Toolbar

	Name	Description
	Print	Print the selected diagram
	Print Preview	Print Preview the selected diagram
	% Scale	Scale of the selected diagram
	Expand All	Expand the entire diagram
	Contract All	Contract the current diagram
	Close	Close the currently selected diagram
	Close All	Close all diagrams

Drawings Toolbar

	Name	Description
	Diagram Options	Change the look of the diagrams
	Threats to the Controls	Show/Hide the Threats to the Controls on the Diagrams
	Floating Details	Show/Hide Details of Objects
	Control Effect	Show/Hide Control Effect in the top left on the controls
	Control Codes	Show/Hide Control Codes on the top right on the controls
	Expand boxes fit	Show/Hide all the text for a control
	Threat Causes	Show/Hide all the Threat Causes
	Cascading bowties	Show/Hide the cascading bowties
	List of Items	This show a grid of all the items open in the diagram and allows these items to be exported to Excel
	Diagram Filter	Allow only the controls that meet a specific criteria

Drawing Additions

	Name	Description
	Edit	Edit the selected item
	Add Threat	Threats can be added when a hazard is selected
	Add Consequence	Consequence can be added when a hazard is selected
	Add Control	Add an additional control
	Add Threat to the Control	Add a Threat to the Control
	Link Diagrams	Create a link to another diagram to form a cascade
	Re-order Left Right	Re-order the diagram Controls left and right
	Re-order up down	Re-order controls parents up and down

Analysis Toolbar

	Name	Description
	Risk Register	View/modify the Risk Register
	Deficiencies	Maintain the Deficiencies for this file
	Critical Task Listing	Interactive view of all the tasks in this file
	Document Matrix	Lists where the documents are used
	People Matrix	Lists where the people are used
	Layers of Protection	Determines if a bowtie branch meets expectations
	Permitted Operations	View a list of permitted operations for a Threat or EF
	Boundary Operations	View permitted operations in an external boundary
	Find	Find text in file
	Text Browser	View all instances of entered text
	Event Tree	View all events by hazard or all hazards by event
	Hazard Tree	View all the items belonging to a hazard in a tree view