Powered by SALUS SUITE

BOWTIE MASTER

Onboarding Pack

WEBSITE:
bowtiemaster.com

EMAIL US:
support@salus-suite.com

YOUTUBE:
@salustechnical

Welcome to **Bowtie Master!**

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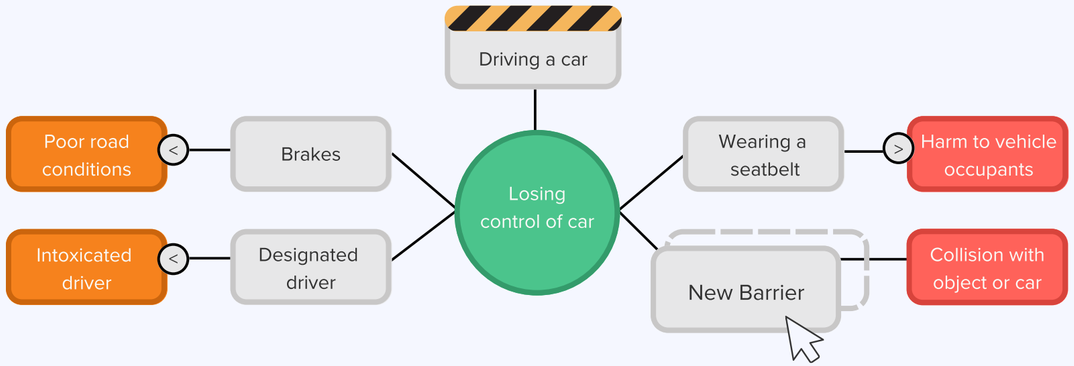
We’re here to help you get started with our easy-to-use software and explore its powerful features for creating and managing bowtie diagrams effortlessly.

Let’s get started

What is a **Bowtie Diagram?**

A **bowtie diagram** is a risk management tool used to **visualise** the pathways from **potential causes of a hazard to its consequences**, showing how risks are controlled and mitigated. It's called a "bowtie" because its shape looks like a bowtie: a central node (the hazard or top event), with causes on the left and consequences on the right.



5 key benefits of using a bowtie diagram

Clear Visualization of Risk: Simplifies complex risk scenarios by showing causes, consequences, and controls in one intuitive diagram.

Improves Risk Awareness: Helps all stakeholders, technical and non-technical, understand how hazards are managed.

Identifies Weaknesses in Controls: Makes it easy to spot missing, weak, or over-relied-upon barriers on either side of the top event.

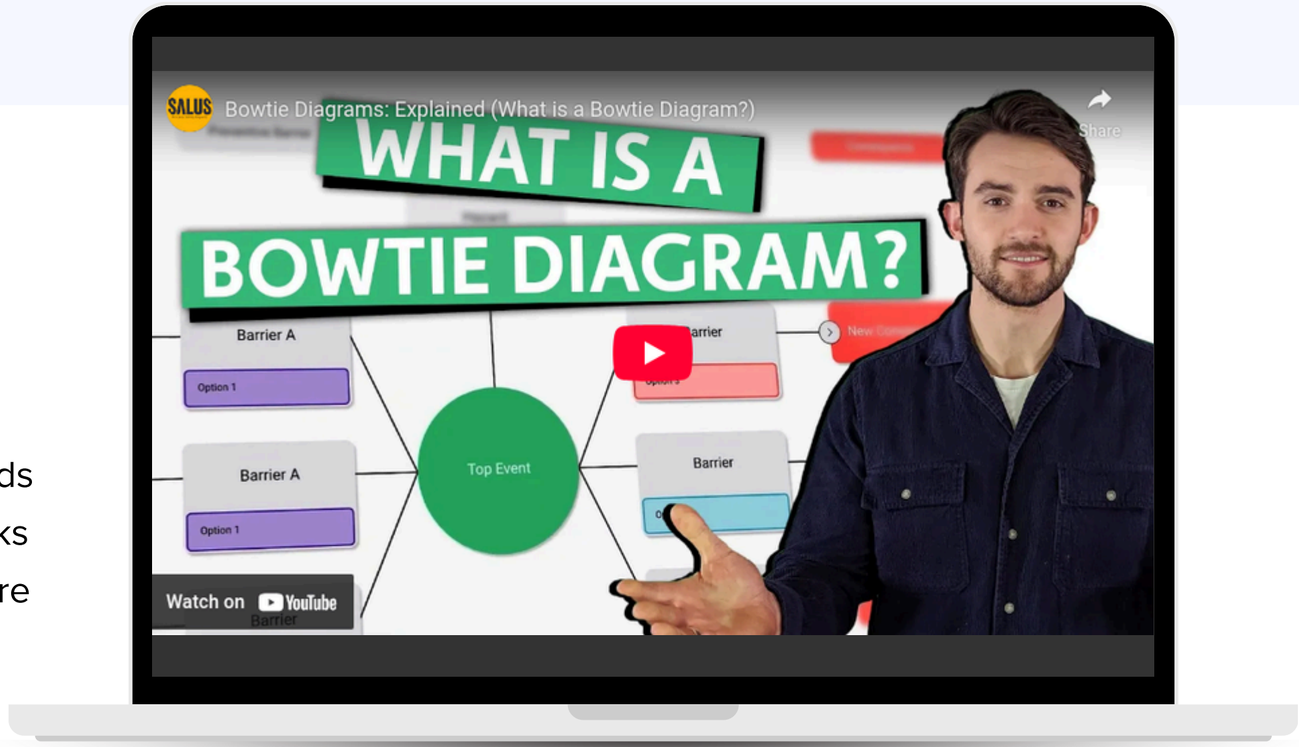
Enhances Communication: Serves as a powerful communication tool for safety, training, and operational decision-making.

Supports Compliance and Audits: Helps demonstrate that risks are being systematically assessed and controlled, aiding regulatory compliance.

What is a **Bowtie Diagram?**

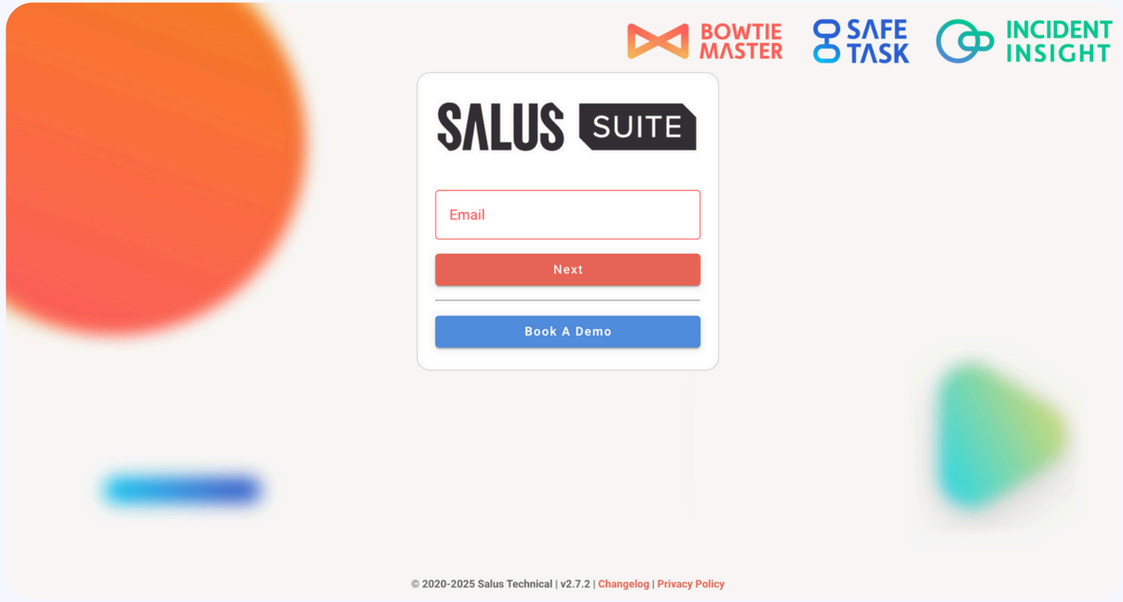
The top 5 industries using bowtie diagrams

- **Oil & Gas** - Managing leaks, explosions, equipment risks
- **Aviation** - Analyzing flight, maintenance, and runway hazards
- **Mining** - Controlling collapse, machinery, and explosion risks
- **Chemical Industry** - Preventing chemical spills and exposure
- **Nuclear** - Controlling reactor safety and radiation risks

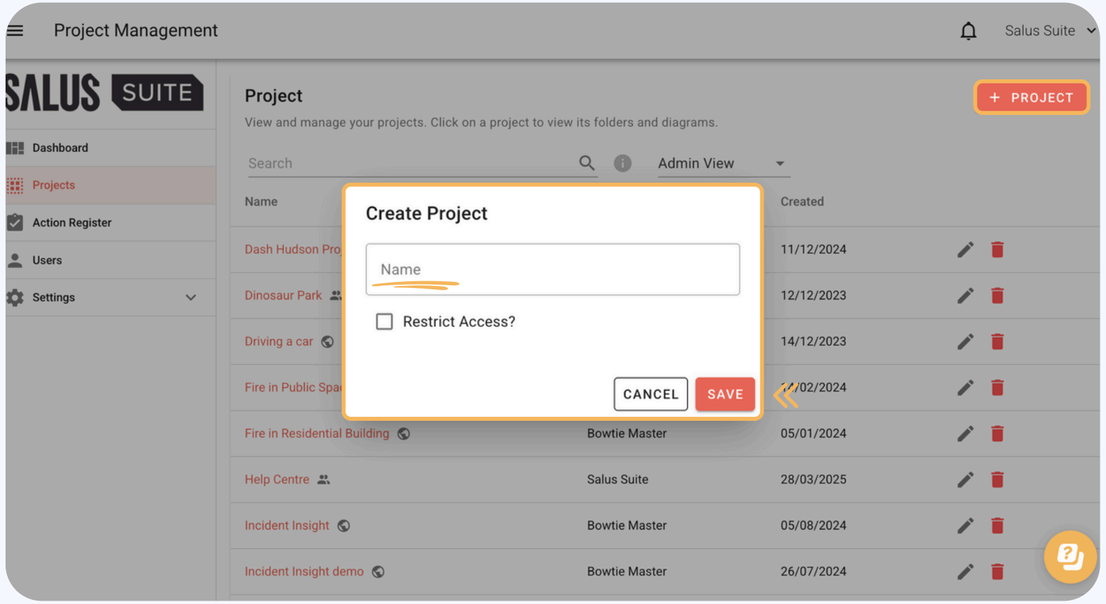


For more information about bowtie diagrams, visit our [Youtube Channel](#).

Build your first diagram

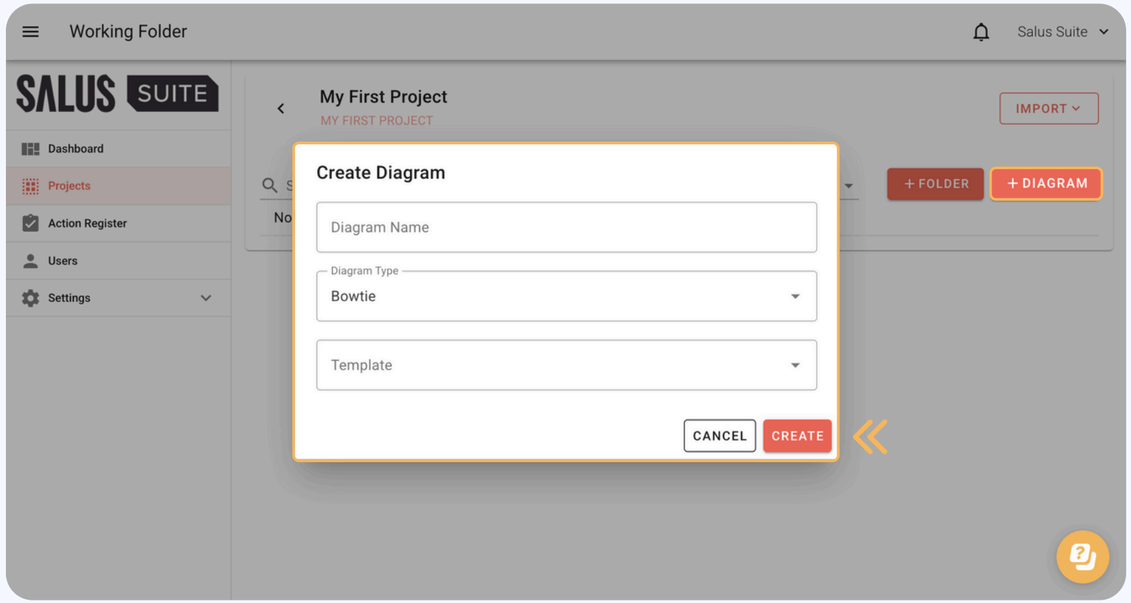


Step 1: Log into the application via any web browser.

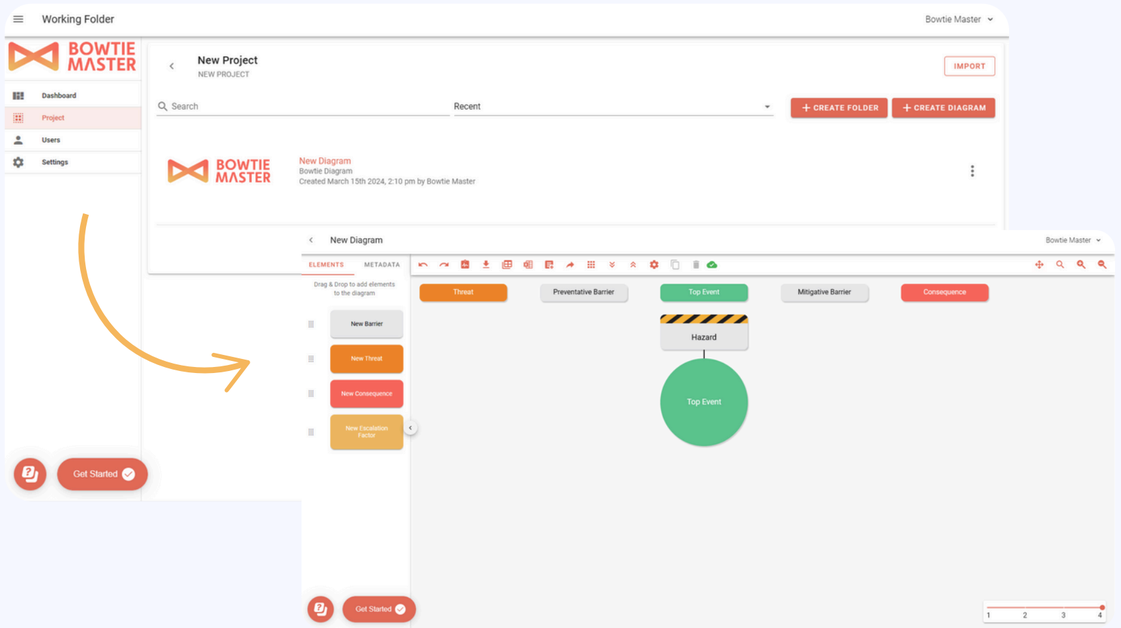


Step 2: Head to the Project Menu and click + PROJECT. Enter a name for your project, then click SAVE.

Build your first diagram

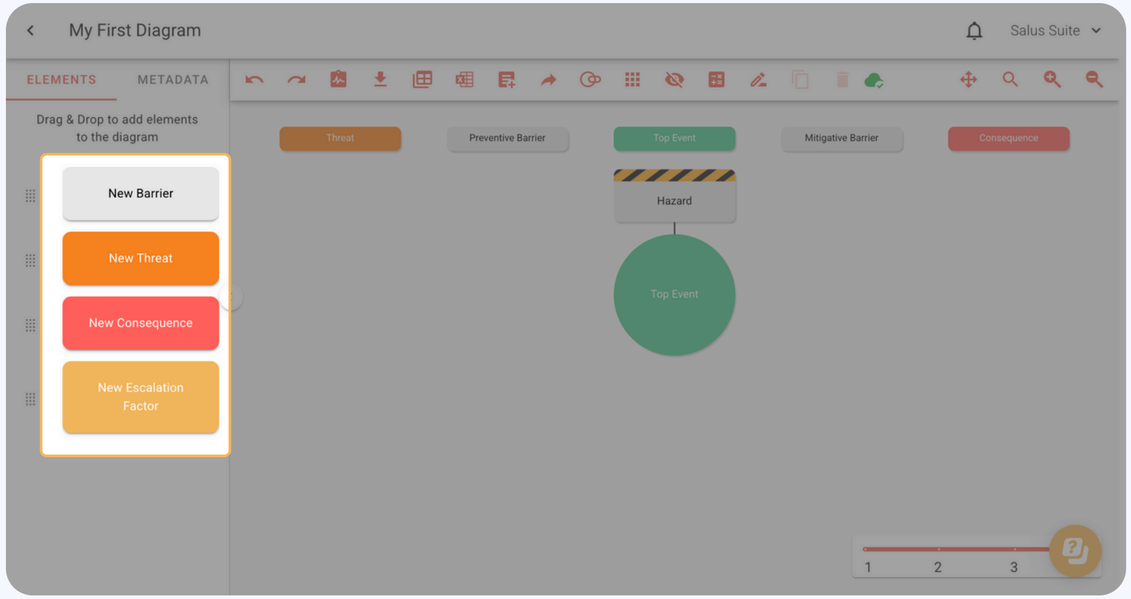


Step 3: Click on the new project created (displayed in the project list) and then click + DIAGRAM. Enter a diagram name, select Bowtie in the Diagram Type, then click CREATE.

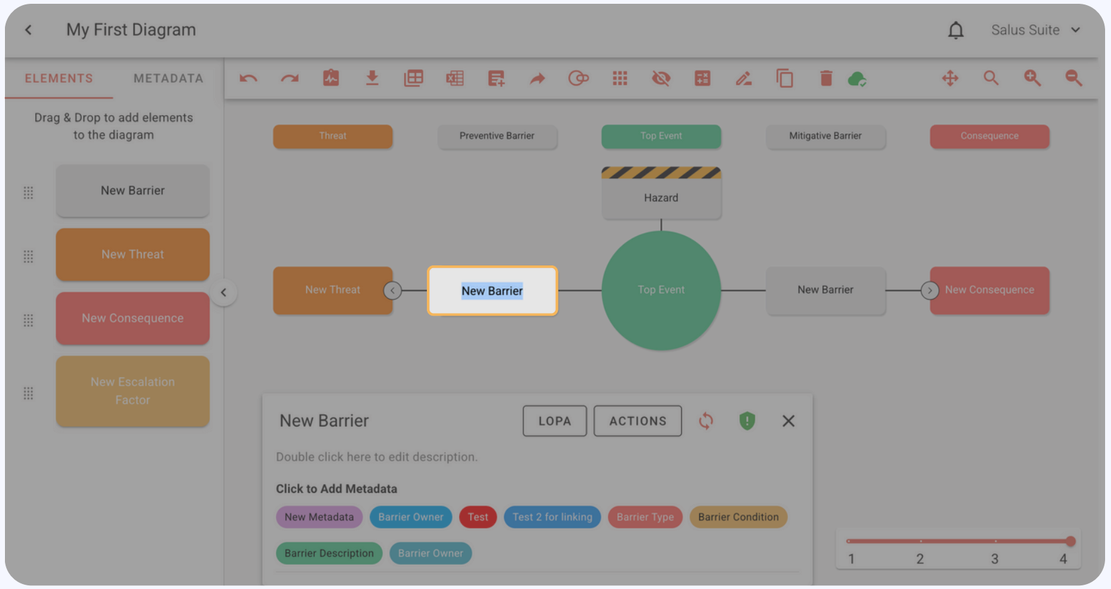


Step 4: Open the diagram you just made to begin building.

Build your first diagram



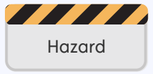
Step 5: Drag and drop elements from the side bar of the Diagram Editor into the diagram. Place a Threat on the left side and a Consequence on the right. Add barriers to both sides of the diagram.



Step 6: To edit an element's content, simply double click on the chosen element and begin filling out with text.

Build your first diagram

Step 1: Identify the Hazard



- The hazard is the potential source of harm.
- Has it been described in its controlled state?
- What are the potential ways this could lead to the top event?

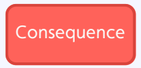
Step 2: Identify the Top Event

- The Top Event is a loss of control of the Hazard.
- Does it describe how control of the hazard has been lost?
- Have you made sure that it doesn't sound like a consequence?

Step 3: Identify Threats

- A Threat is an external event that can cause the Top Event.
- What potential event or action could cause harm or disruption?
- Is there a clear link between each Threat and the Top Event?

Step 4: Identify Consequences



- Consequences are undesirable outcomes of the Top Event.
- Is there a clear link between the Top Event and each Consequence?
- What is the scale or seriousness of the potential damage?

Step 5: Identify Preventative Barriers

- These stop each Threat from leading to the Top Event.
- Is it capable of independently stopping the Top Event?
- Are your barriers measurable?

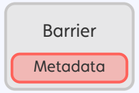
Step 6: Identify Mitigative Barriers

- These minimise the Consequences arising from the Top Event.
- Is it capable of independently stopping the Top Event?
- Are your barriers measurable?

Step 7: Identify Escalation Factors

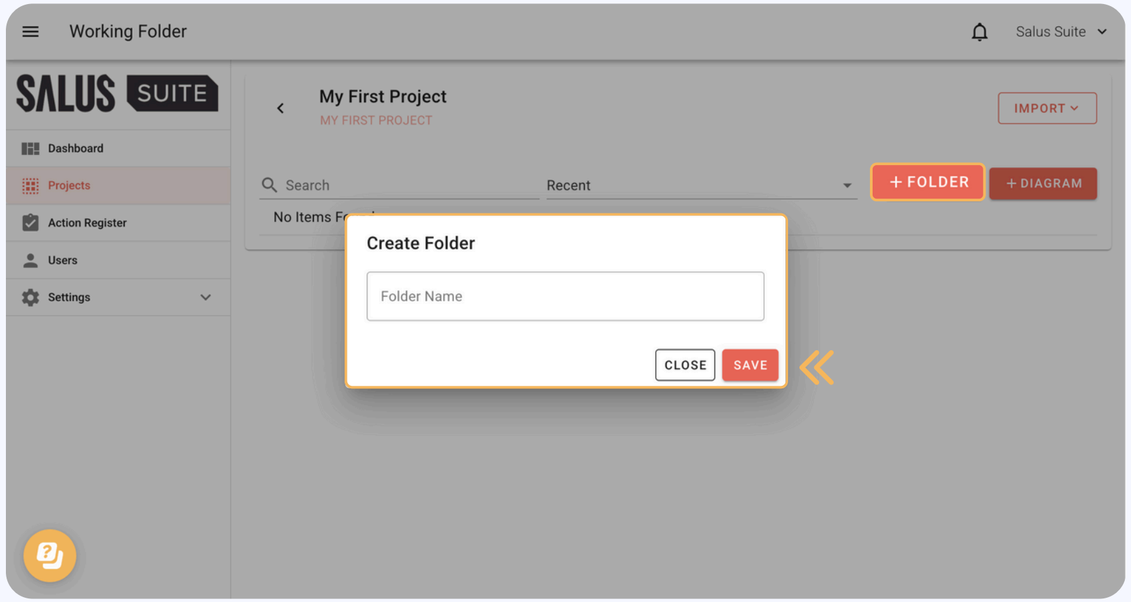
- These are similar to Threats, but don't lead directly to the Top Event, they weaken Barriers
- Does it reduce the effectiveness of the barrier?
- Could this factor worsen the situation if the threat occurs?

Step 8: Add Metadata

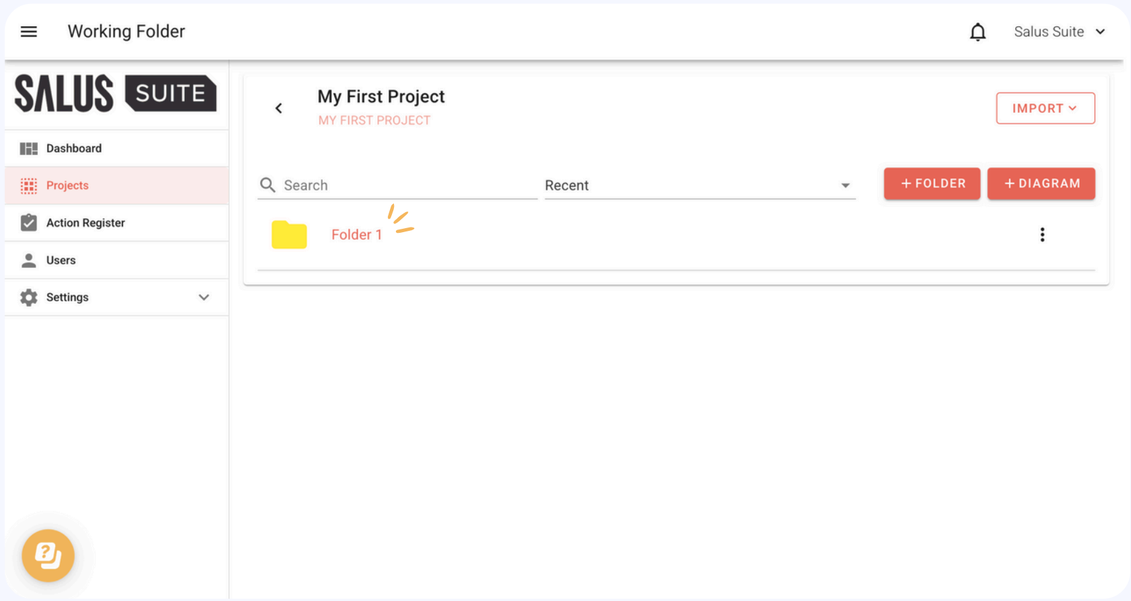


- This is additional information to describe a Barrier
- Is it 'effective', 'not effective' or 'partially effective'?
- Who is the barrier owner?

Create a folder

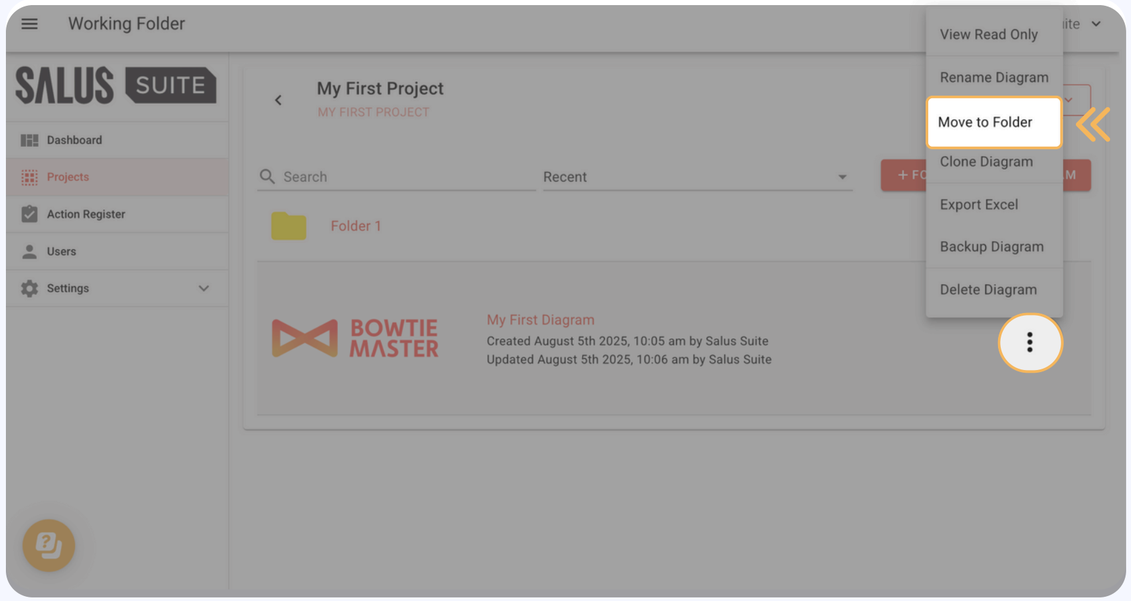


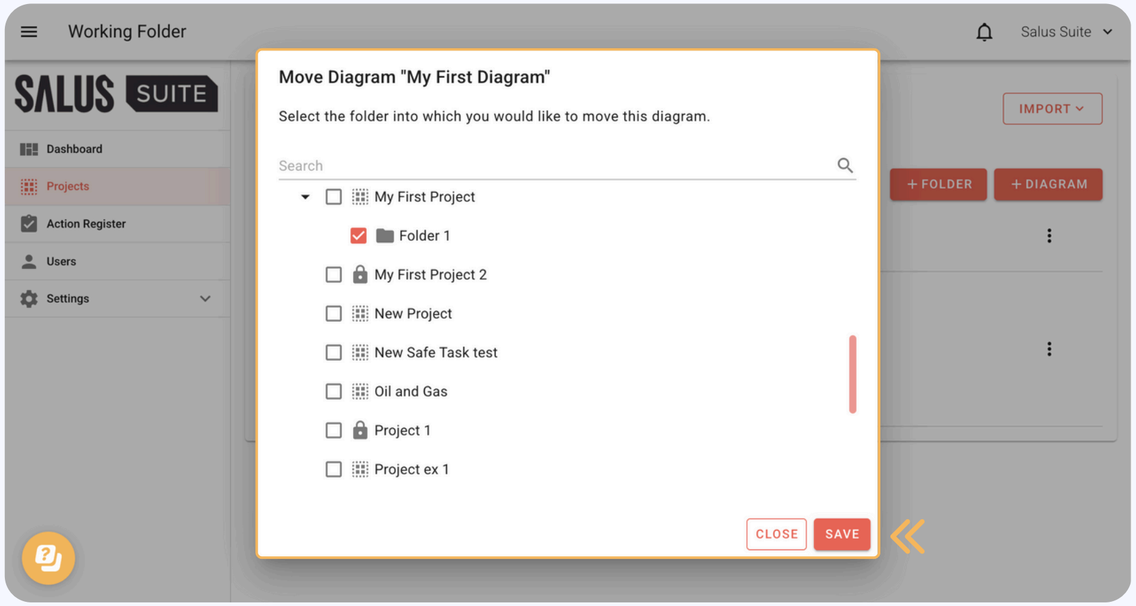
Step 1: Open a project from the project list, then click + FOLDER. Enter a Folder Name.



Step 2: The folder will be displayed in the project. You can create subfolders and diagrams within the folder.

Create a folder



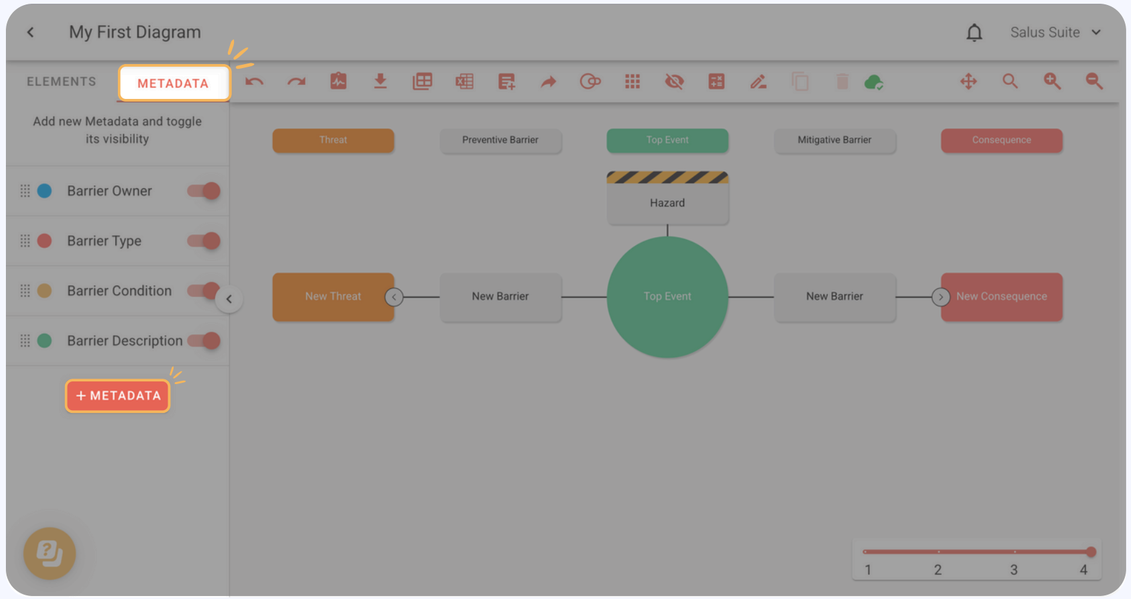


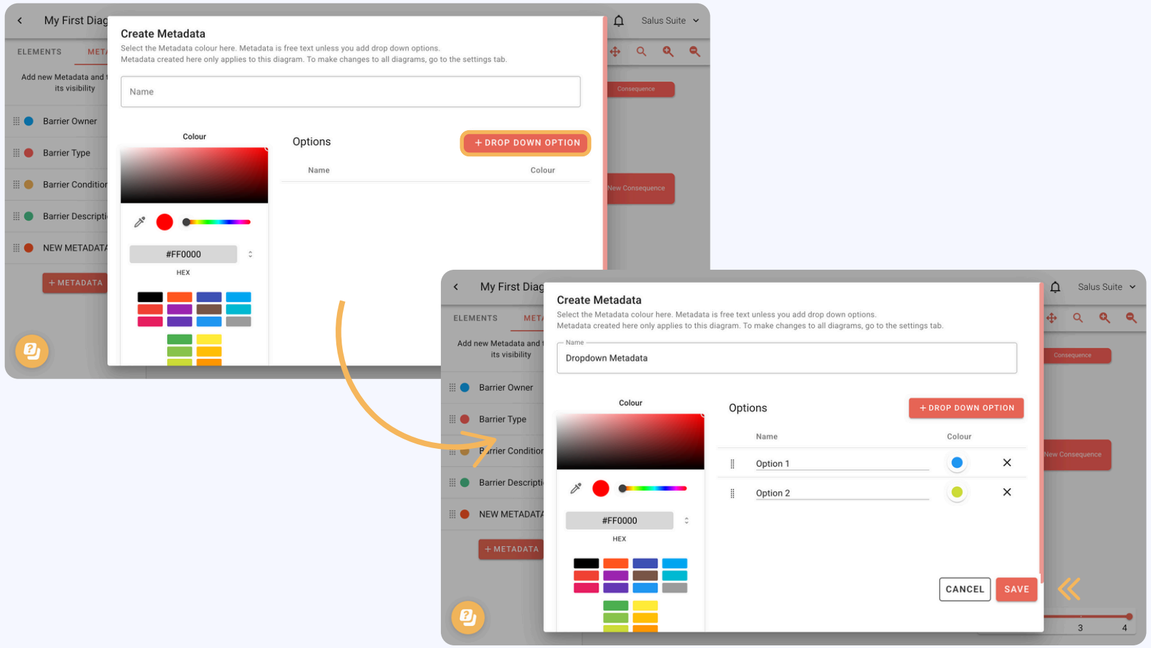
Step 3: To move an existing diagram to a folder, click the ellipses on the diagram. Then, select Move to Folder.

Step 4: In the pop-up, select the folder where you want to move the diagram. Click Save. The diagram will be moved to the selected folder.

Add and edit **metadata**

Adding metadata to a specific diagram



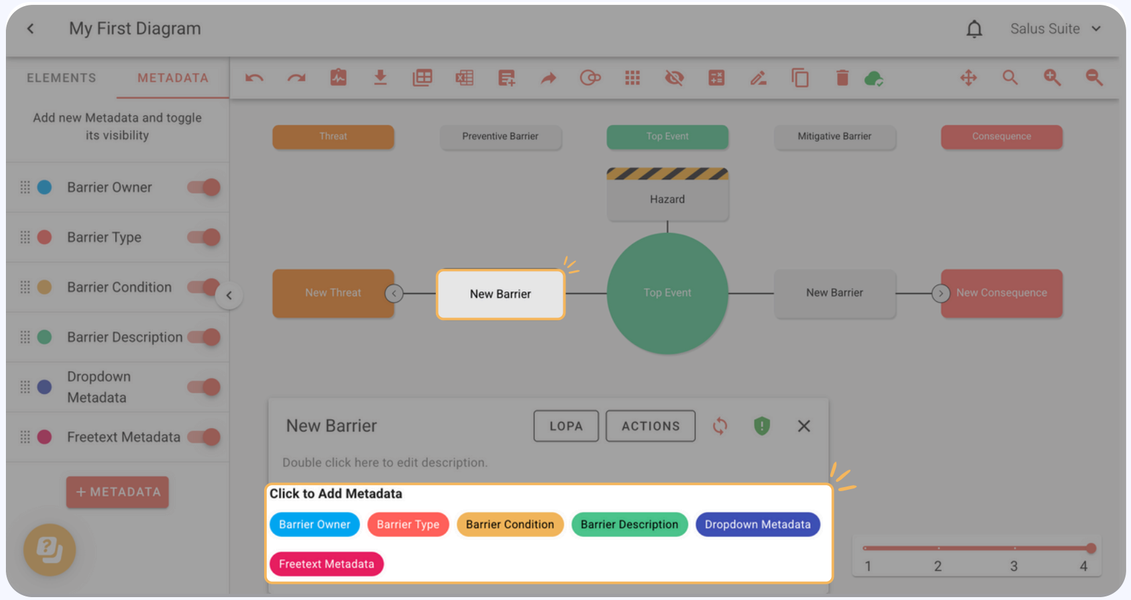


Step 1: Metadata is a standardised way of adding further information to your bowtie diagram. To add new metadata, head to the Metadata Menu and click + METADATA.

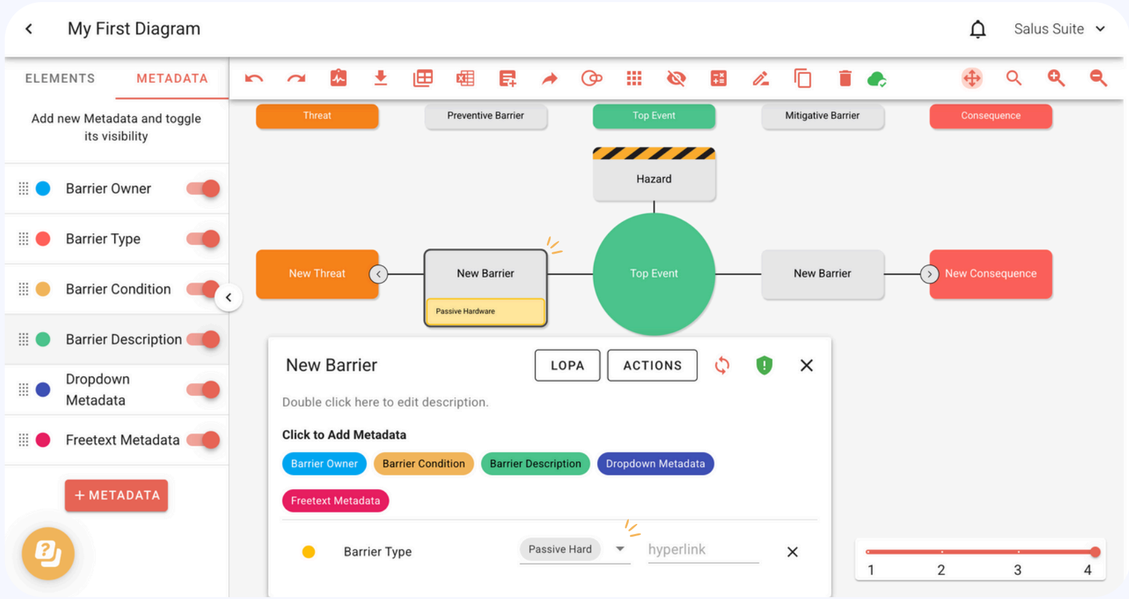
Step 2: Enter a name and colour for your metadata. You can create drop-down options by clicking + DROP DOWN OPTION. You will also need to select a name and colour for each of the options. If you'd like to use freetext rather than a drop-down menu, simply hit SAVE.

Add and edit **metadata**

Adding metadata to barriers



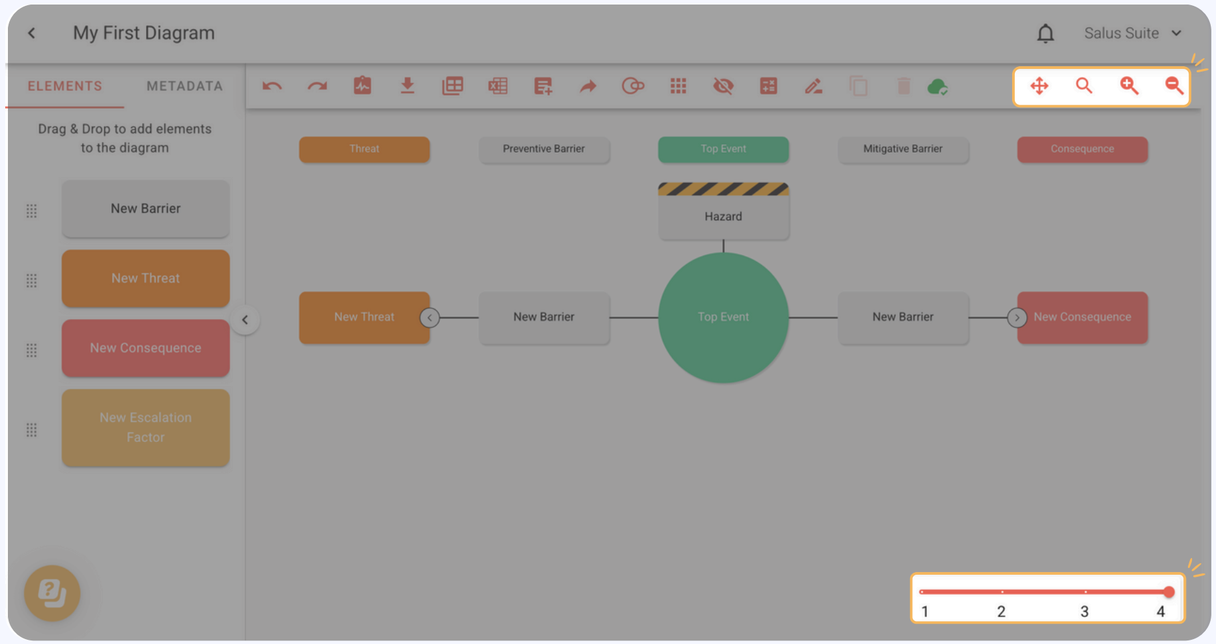
Step 1: To add metadata to a barrier, double-click on the barrier. Select the type of metadata you'd like to add from the list in the Element Description Box.



Step 2: Select from your drop-down list, or enter free text in the text box provided. Enter a URL for additional details in the hyperlink textbox.

Customise the **view**

Navigate around your diagram with ease



The **Pan Mode tool** can be found at the top right corner of the diagram editor. The tool simply allows you to pan across your diagram. To use, click on the icon and off you go! Alternatively, holding down the **Shift Key** is a great keyboard shortcut and will enter you into pan mode.

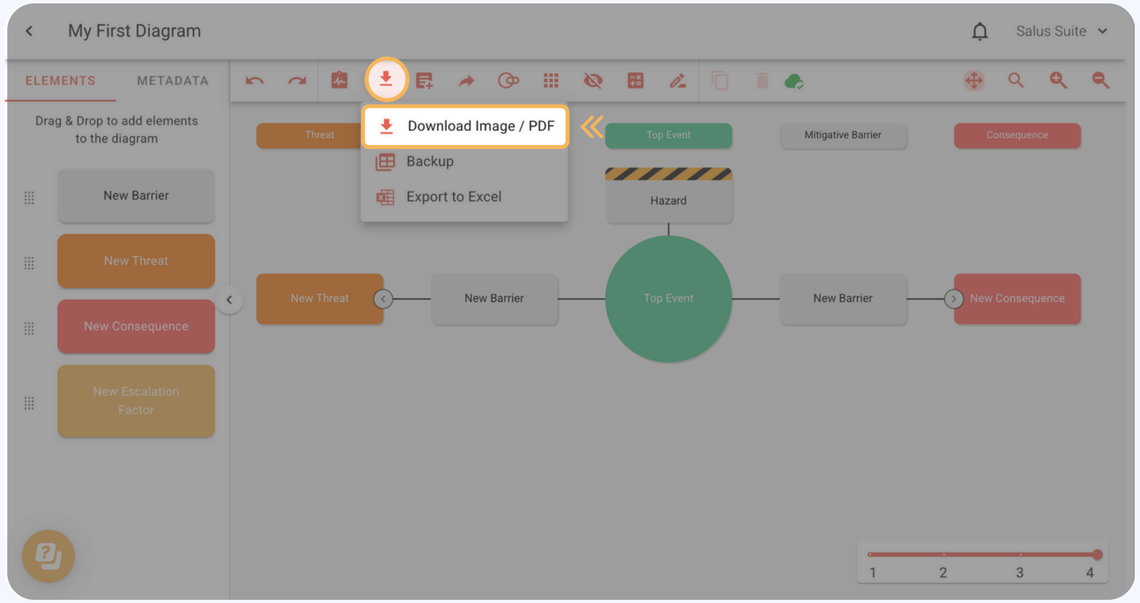
Zoom buttons (+ and -) found on the toolbar allow you to decrease or increase the size of the image.

The **1 – 4 scale** found on the bottom-right corner of the diagram editor allows users to toggle between different views.

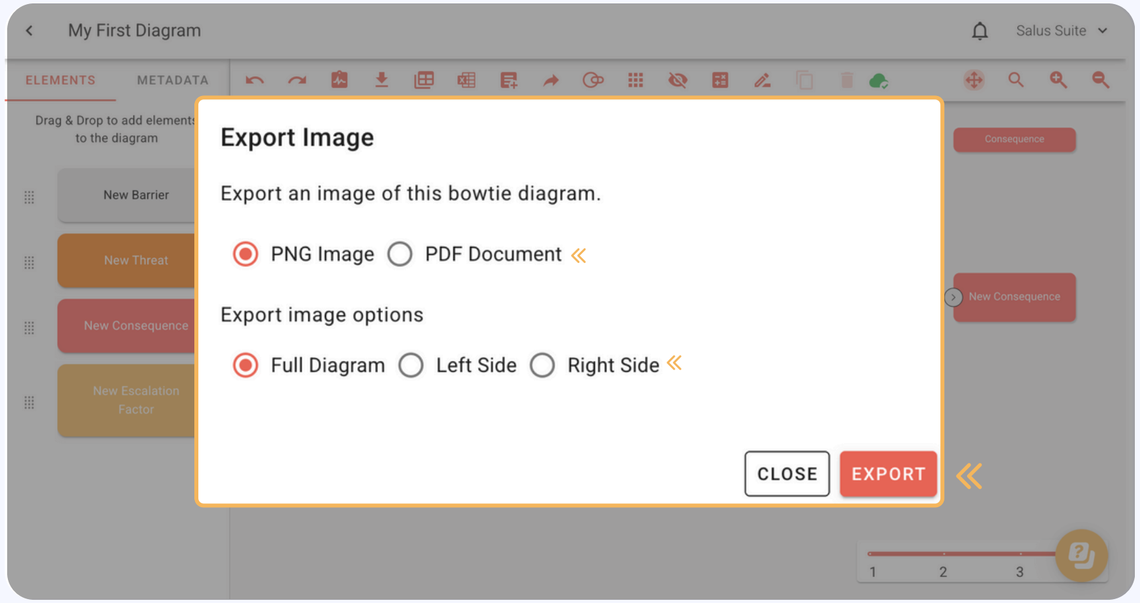
1 presents threats and consequences.
2 adds on barriers.
3 adds on degradation factors
4 adds on degradation factor barriers.

Share a **diagram**

As a High Quality Download, great for adding to reports



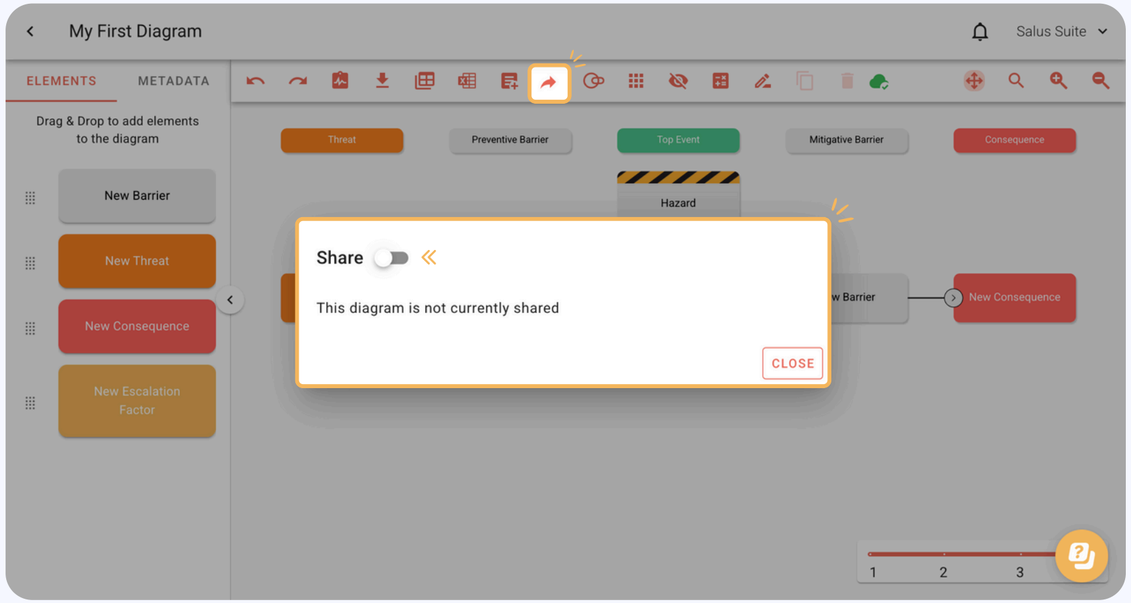
Step 1: Click the DOWNLOAD button in the toolbar. Select Download Image/PDF.



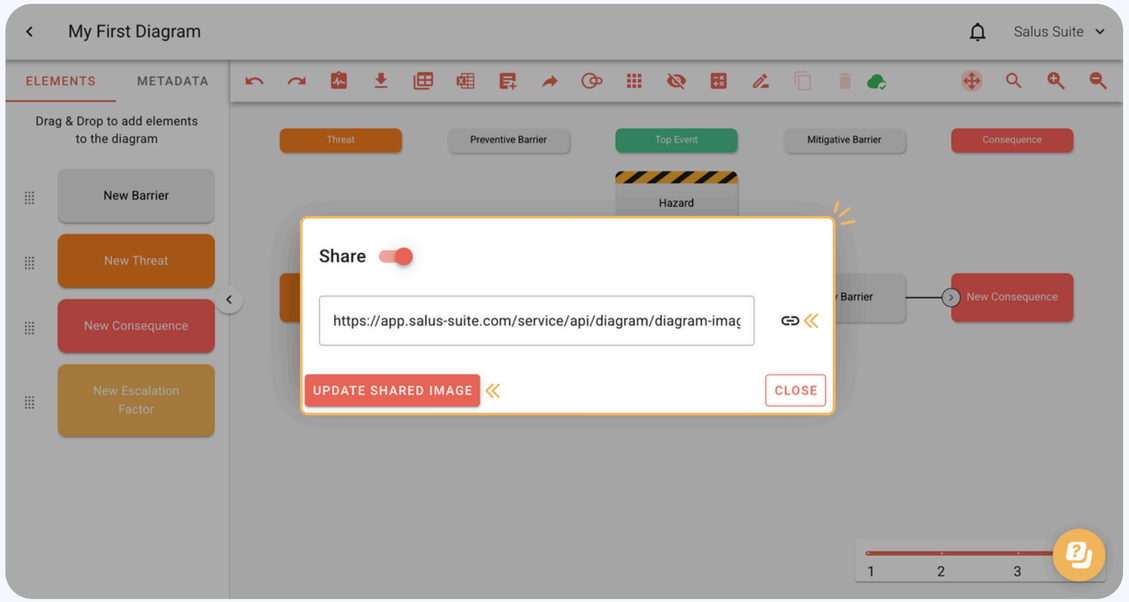
Step 2: Select your preferred image format: PNG Image or PDF Format. Then, select whether you would like to export the full diagram, the left side, or the right side only. Click EXPORT.

Share a **diagram**

As a Live link which can be shared with those out-with the software



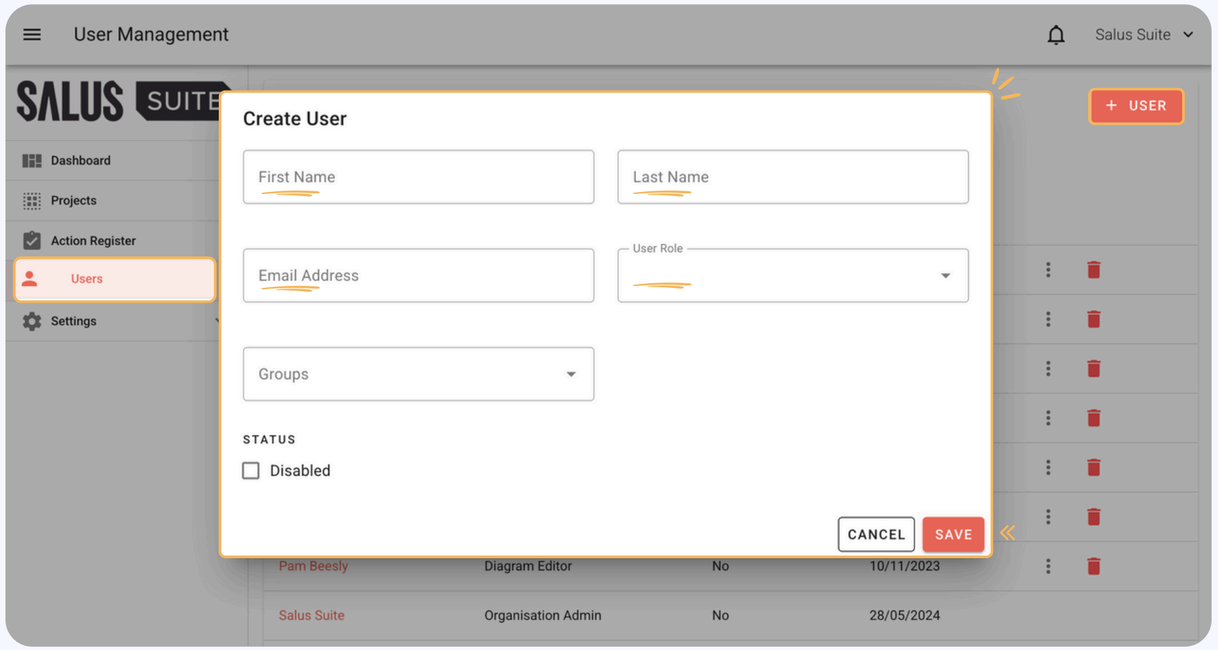
Step 1: Click on the Share button in the toolbar. Then, toggle the Share button on.



Step 2: Click on UPDATE SHARED IMAGE, then the Copy Link icon. Paste the link where you wish to share. Individuals should now be able to click the link to view the bowtie in a read-only format.

Add a new **user**

*Only Organisation Admins have access to the users menu



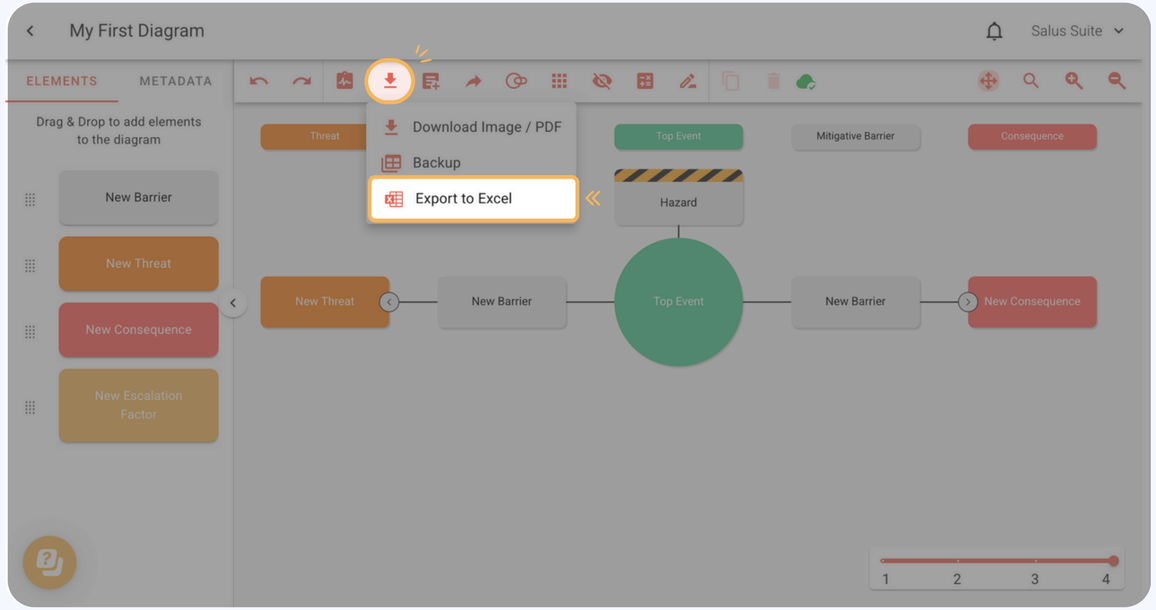
Step 1: In the User Menu, add new users by clicking on the + USER button.

Step 2: Complete the required fields and choose the user's role from the drop-down menu, and click SAVE.

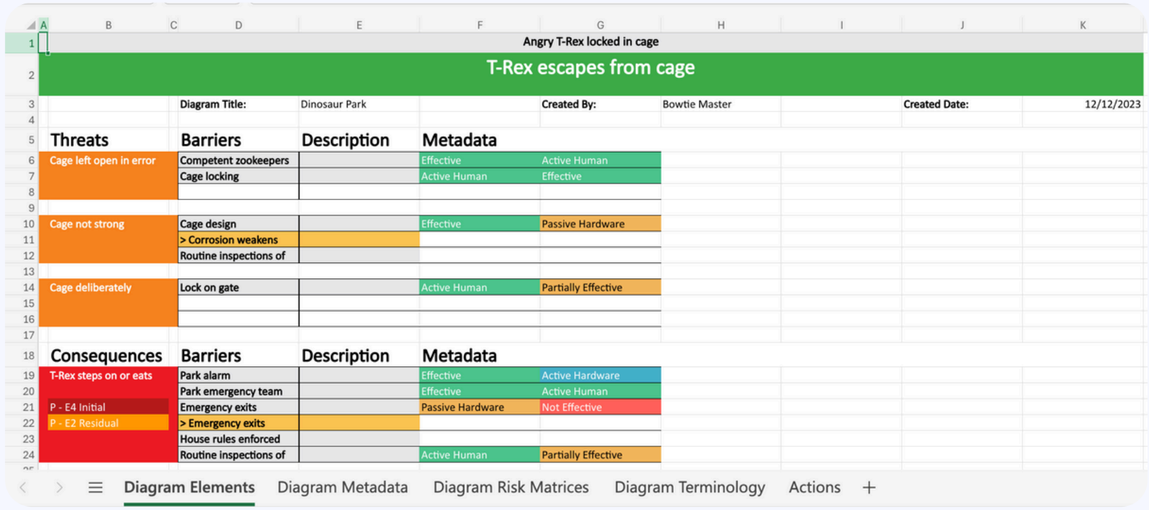
Organisation Admins have full system access
Diagram Editors can build, amend/delete bowtie diagrams
Metadata Editors can add/remove metadata from barriers
Viewers can only see published diagrams

Excel **export**

Move your bowtie into an Excel format



To export details from a bowtie diagram that has been created in Bowtie Master, click on the Download button in the toolbar. Then, click Export to Excel. The bowtie diagram elements, terminology, and metadata will download as an Excel spreadsheet file.



Angry T-Rex locked in cage

T-Rex escapes from cage

	Diagram Title:	Dinosaur Park		Created By:	Bowtie Master	Created Date:	12/12/2023

Threats	Barriers	Description	Metadata	
Cage left open in error	Competent zookeepers		Effective	Active Human
	Cage locking		Active Human	Effective
Cage not strong	Cage design		Effective	Passive Hardware
	> Corrosion weakens			
	Routine inspections of			
Cage deliberately	Lock on gate		Active Human	Partially Effective

Consequences	Barriers	Description	Metadata	
T-Rex steps on or eats	Park alarm		Effective	Active Hardware
	Park emergency team		Effective	Active Human
P - E4 Initial	Emergency exits		Passive Hardware	Not Effective
P - E2 Residual	> Emergency exits			
	House rules enforced			
	Routine inspections of		Active Human	Partially Effective

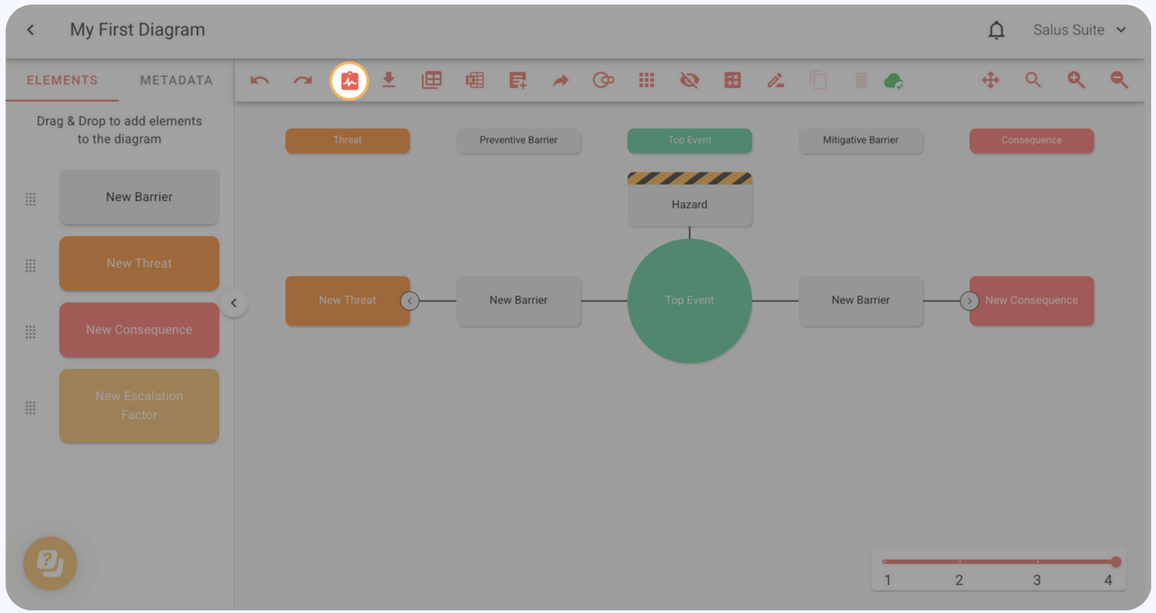
Diagram Elements | Diagram Metadata | Diagram Risk Matrices | Diagram Terminology | Actions

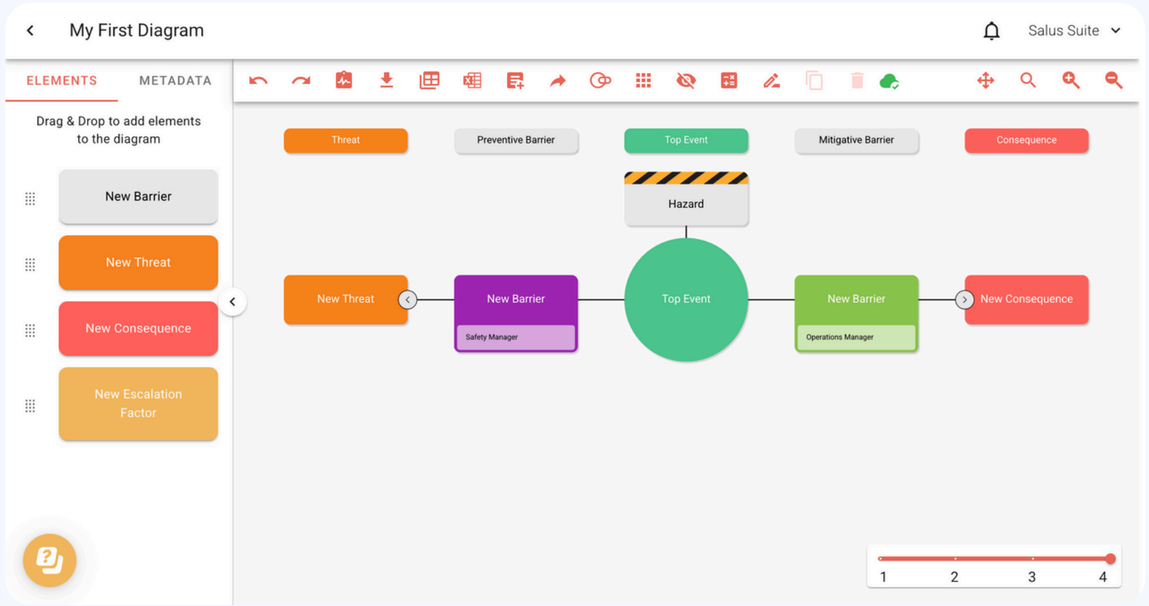
Your diagram in Excel format will look like this.

Navigate through the tabs at the bottom of the Excel spreadsheet to explore the data extracted from your bowtie diagram. Each tab presents different data relating to key elements, taking into account colour.

Analyse **mode**

Colour code barriers based on metadata, great for barrier analysis





Step 1: Analyse Mode helps with identifying potential weak spots within your operation. In the toolbar, click on the Analyse button. Then, select the Metadata Type from the drop-down list that you would like to analyse and click ANALYSE.

This is how your diagram will look like in Analysis Mode.

Help **center**

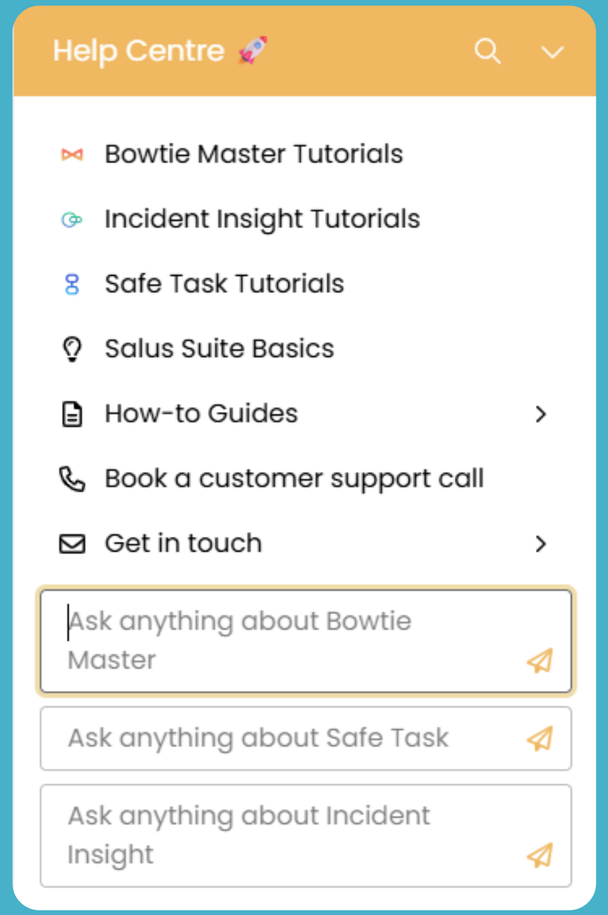
Need some assistance? We have a fantastic help center which hold answers to our most commonly asked questions

Access full help center here

Within the Salus Suite, we have an in-app pop-up that is connected to our main help center documentation. The pop-up contains everything from Salus Suite basics, checklists, and walk-through ‘how-to’ tours.

Depending on the software you have access to within the suite, an AI chatbot will also be available for use. Ask any questions about the software; this resource is here to help!

Anything you are unable to find help for, drop us an email!



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Have a Question about

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