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**SALUS** SUITE



**BOWTIE  
MASTER**

Starter Pack

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[@salustechnical](https://www.youtube.com/@salustechnical)

# Welcome to **Bowtie Master!**

## Table of Contents

Get ready to rex-plore bowtie diagrams as we guide you through our Jurassic-sized Dinosaur Park example, it's a dino-mite way to get started!

Let's get started

Dinosaur Park

[Page 3](#)

The Bowtie Diagram

[Page 8](#)

Bowtie Diagram Key

[Page 14](#)

Help Centre

[Page 15](#)

# Dinosaur Park

It's just another regular day at the dinosaur park...



This is dinosaur park, a busy place filled with plenty of hazards which could cause a series of major incidents.

Take a few minutes to look around, can you spot the potential hazards. Take note of these and compare with what we can see in our worked up example.



# Dinosaur Park

Within this busy picture, all may seem well but there are many things affecting the overall park safety, and if left unresolved, could lead to a serious situation.



Here are some potential issues we have spotted:

Blocked emergency exits

Park emergency team

Sleeping personnel

Park manuals

An old cage design

Park alarm

One lock on the cage

Insurance

Angry T-Rex

Children roaming in the park



# Let's identify the **Hazard and Top Event**



## Identify the Hazard

The hazard is the potential source of harm. Something with the inherent capability to cause an unwanted event (typically a loss of control or accident). When describing a hazard, remember nothing bad has happened yet, but if left unrecognised could lead to a serious issue. (We call this our top event)

## Identify the Top Event

The Top Event is a loss of control of the Hazard. When describing this, mention how the control has been lost. It is not a consequence, it is an event occurring.

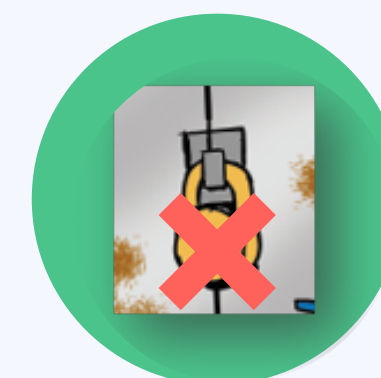
**HAZARD**

**ANGRY T-REX LOCKED IN  
A CAGE**



**TOP EVENT**

**T-REX ESCAPES FROM  
CAGE**





# Let's identify the **Consequences**

## Identify Consequences

Consequences represent the undesirable outcomes which can result from the top event occurring. These can range from environmental damage to injuries, damaged reputation, or even loss of life.

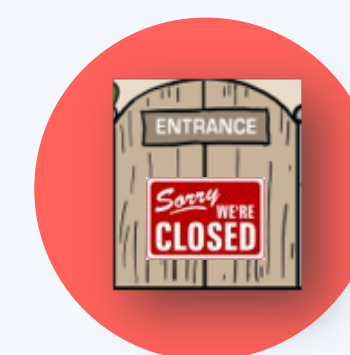


### CONSEQUENCES

**T-REX EATS OR STANDS ON PEOPLE**

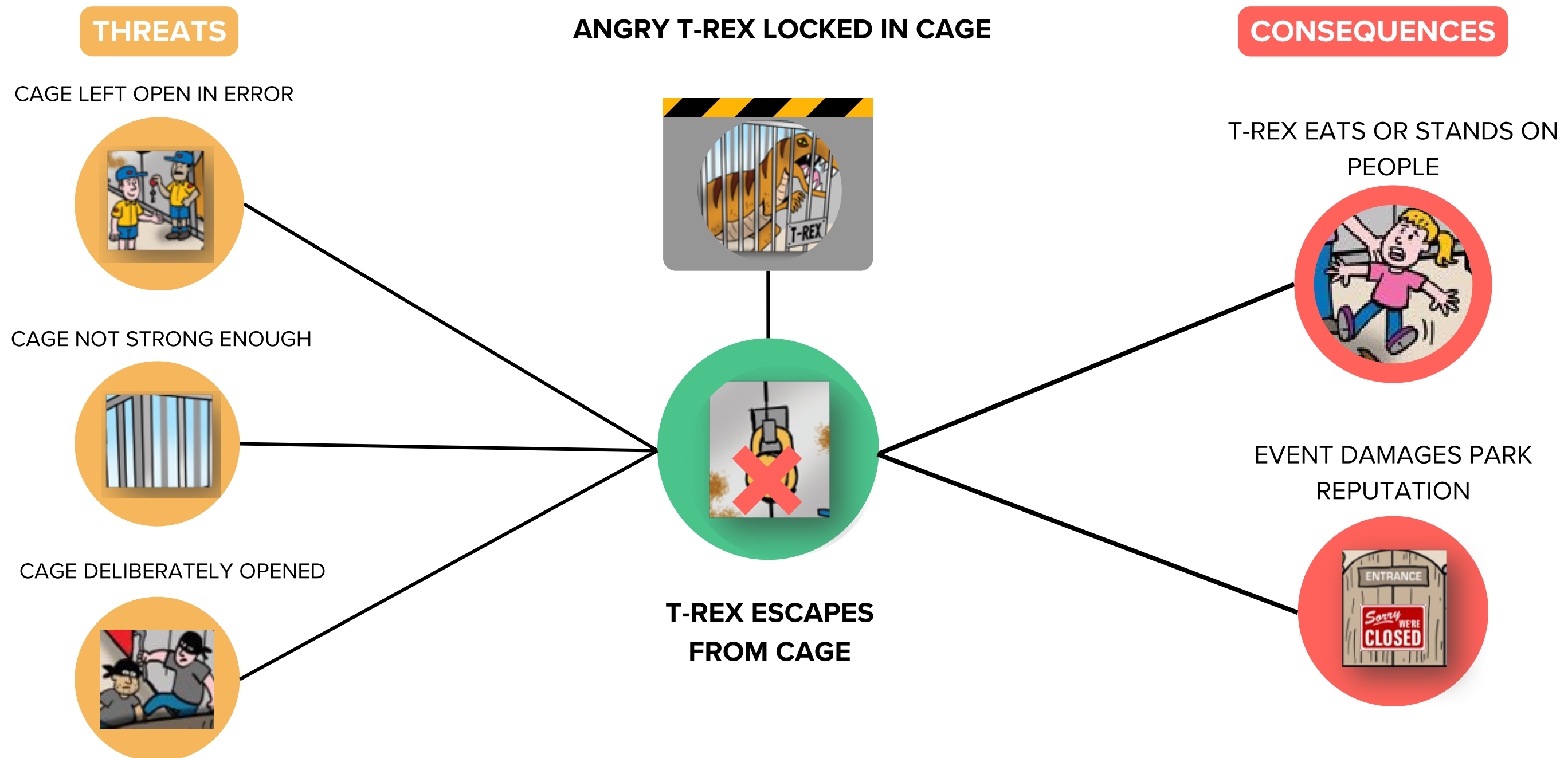


**EVENT DAMAGES PARK REPUTATION**



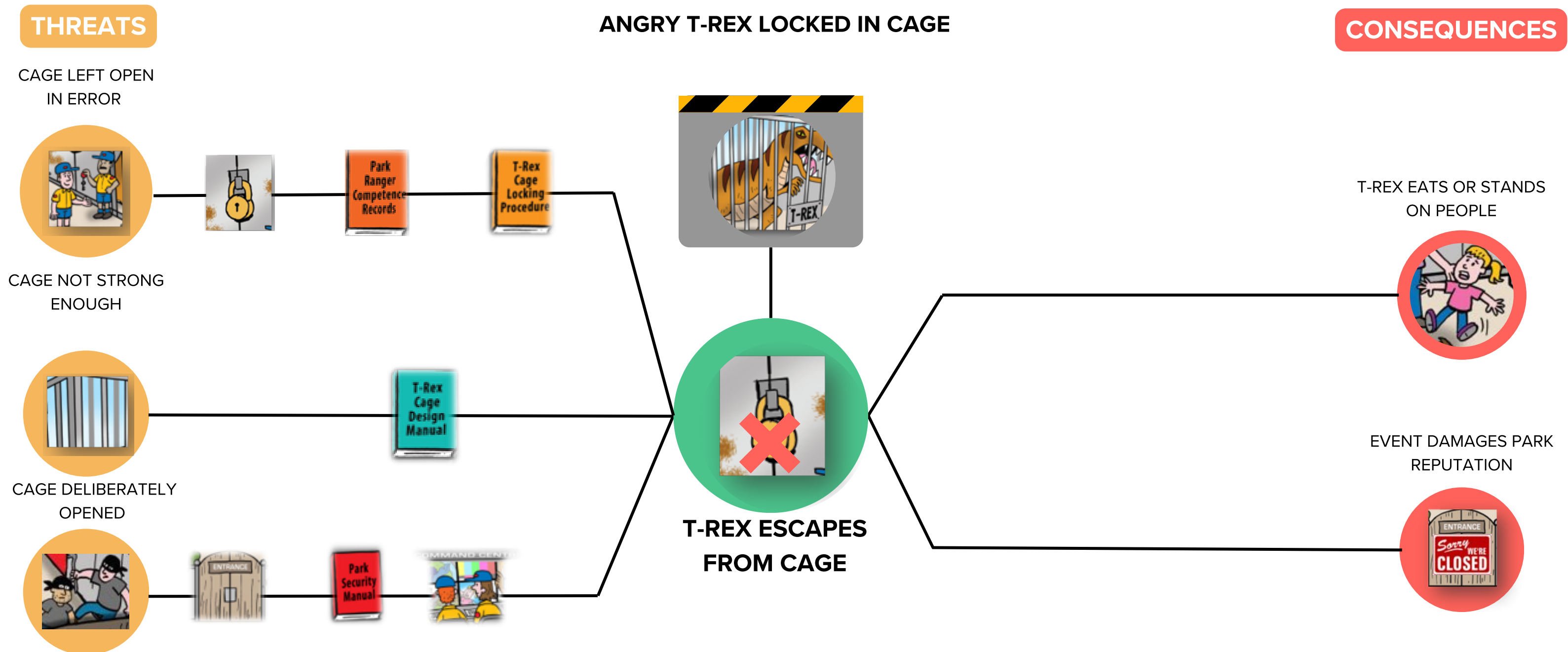
# Let's put it into a **Bowtie Diagram**

Any threat can lead to the top event, and the top event can lead to one or multiple consequences occurring.



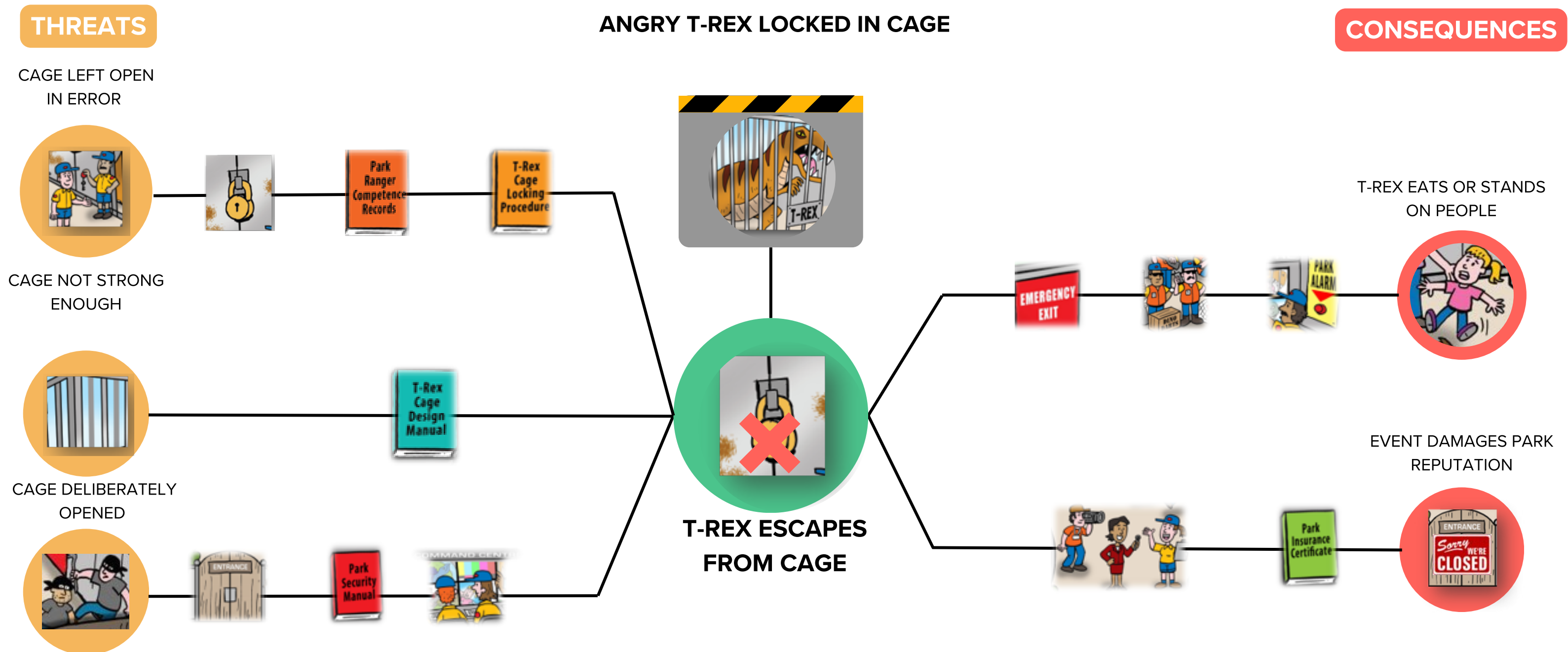
# Let's identify the Preventative Barriers

Preventative barriers are the measures put in place to prevent the top event from occurring, located on the left side of the diagram.



# Let's identify the Mitigative Barriers

Mitigative barriers are controls and strategies aimed at reducing impacts of the consequences once the top event has occurred.



# Let's put those into **Tabular Format**

I'm sure you'll agree bowtie diagrams are easier to understand than a tabular risk assessment where all barriers are simply listed.

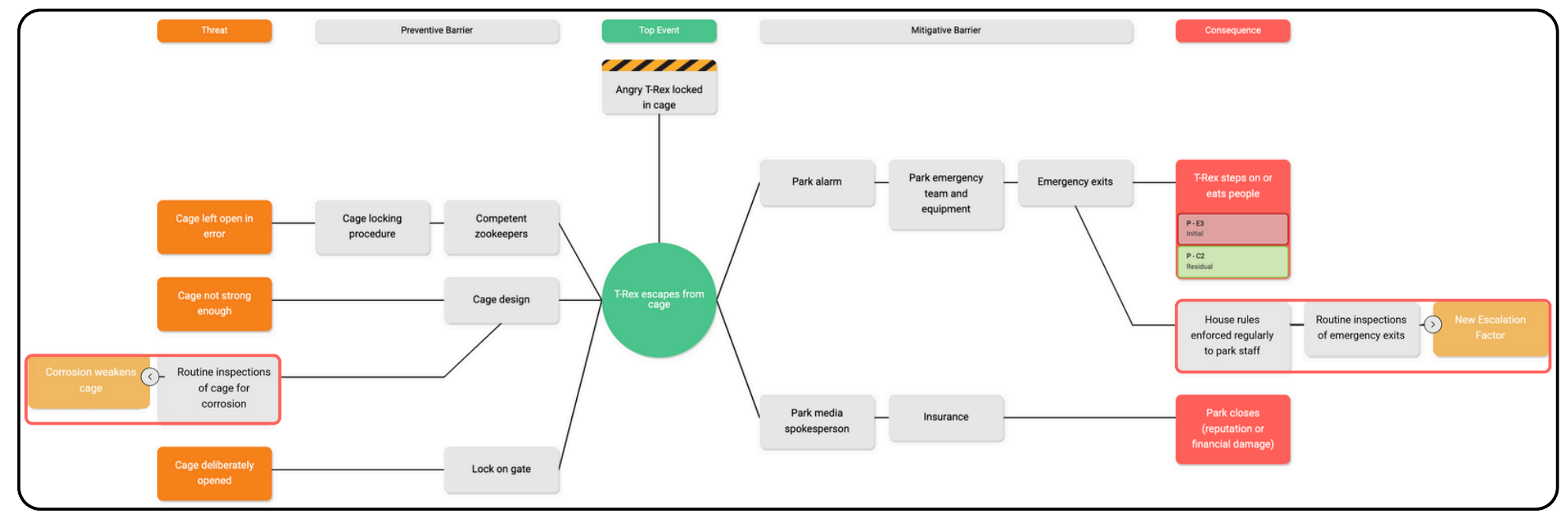
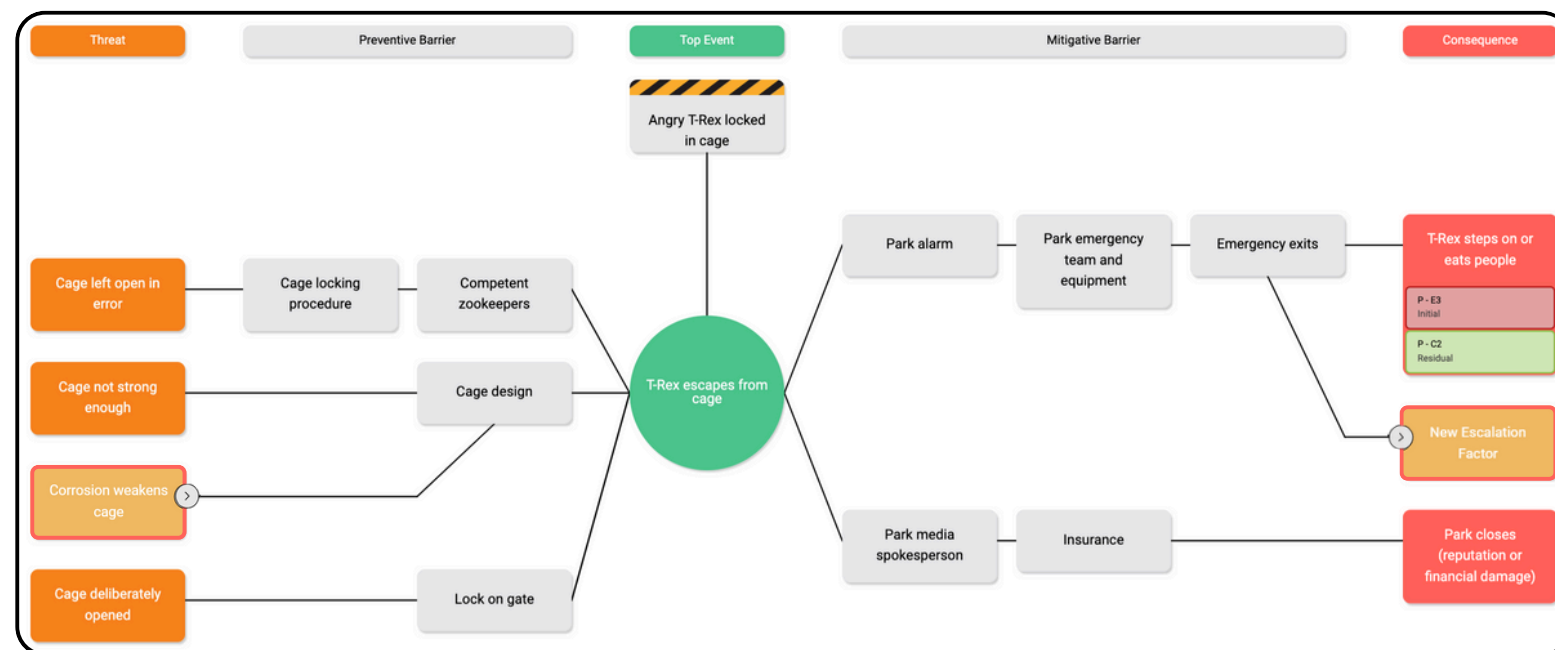
Hazard	Causes	Consequences	Preventative Barriers	Mitigative Barriers
Angry T-Rex	T-Rex escapes from cage	<ul style="list-style-type: none"><li>• Injury to park visitors</li><li>• Damage to park</li><li>• Damage to park reputation</li></ul>	<ul style="list-style-type: none"><li>• Cage design</li><li>• Cage locking procedure</li><li>• Competent zookeepers</li><li>• Lock on gate</li></ul>	<ul style="list-style-type: none"><li>• Park alarm</li><li>• Park emergency team</li><li>• Emergency exits</li><li>• Security team equipment</li><li>• Park media spokesperson</li><li>• Insurance</li></ul>



# The Bowtie Diagram

## Degradation factors / Escalation factors

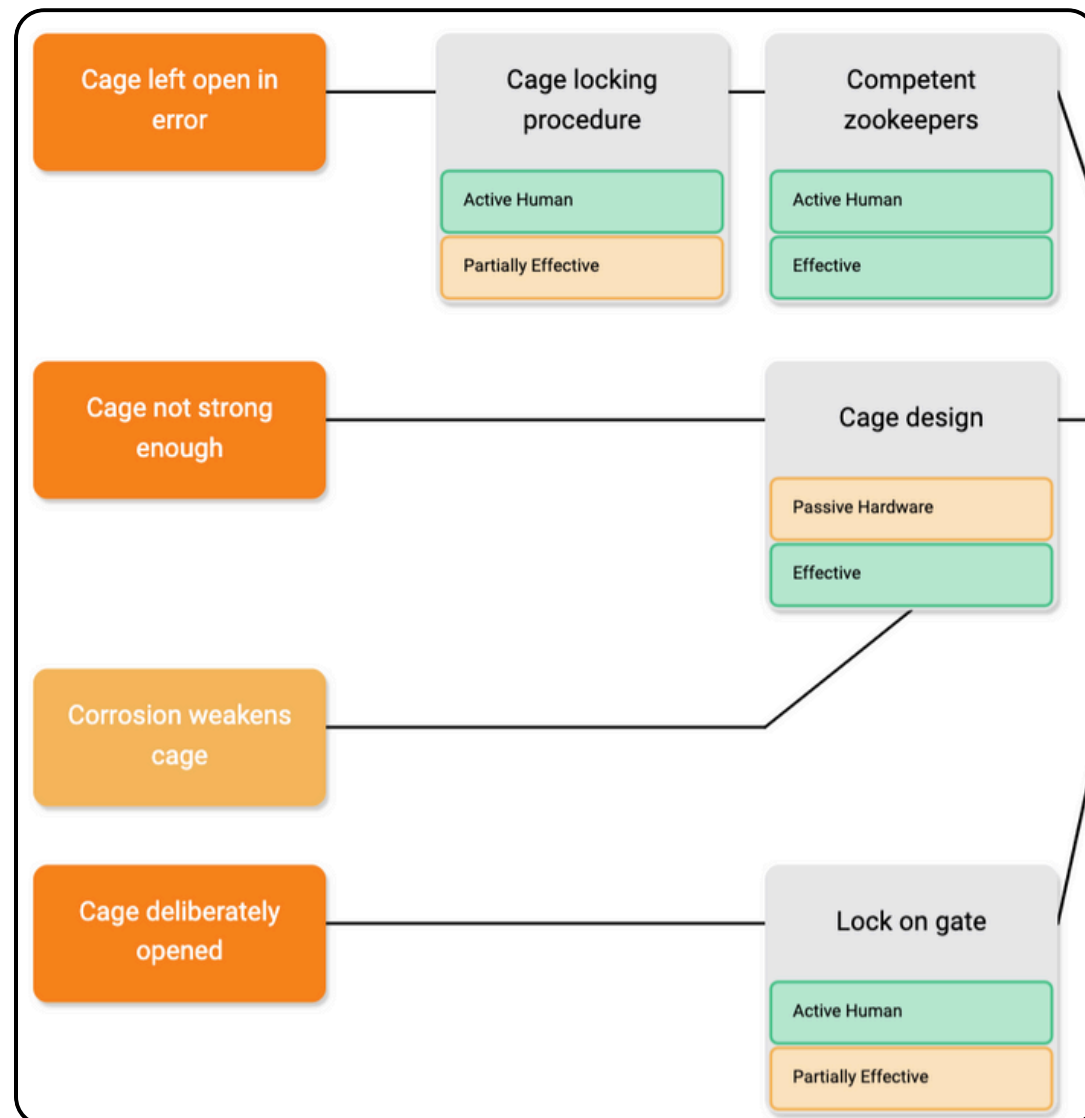
Degradation factors, also known as escalation factors, are conditions or situations which can compromise the effectiveness of barriers. It is important to understand how barriers may fail and what we can do to prevent this from happening.



# The Bowtie Diagram

## Applying Metadata to a diagram

Metadata is customisable information that can be applied to the elements of a bowtie diagram. Adding metadata to elements is critical for large-scale risk management systems as it helps manage, analyse, and audit the bowtie diagram effectively.



Each organisation will have its own set of metadata aligned with its safety procedures. By assigning this metadata to individual elements, it's easier to identify potential weaknesses and determine the necessary steps to improve and strengthen safety protocols.

## Metadata Examples

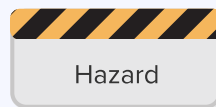
**Barrier Type:**  
Passive Hardware  
Active Hardware  
Active Hardware + Human  
Active Human  
Continuous Hardware

**Barrier Owner:**  
Facility Manger  
Training Coordinator  
Procurement Manager  
Clinical Staff Supervisor  
Ward Nurse



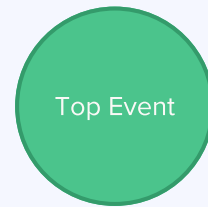
# Bowtie Diagram **Key**

## 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



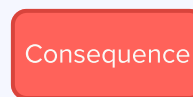
- The Top Event is a loss of control of the Hazard.
- Does it describe how control of the hazard has been lost?
- Have you made sure that it doesn't sound like a consequence?

## Step 3: Identify Threats



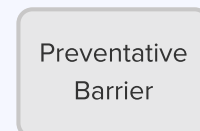
- A Threat is an external event that can cause the Top Event.
- What potential event or action could cause harm or disruption?
- Is there a clear link between each Threat and the Top Event?

## 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



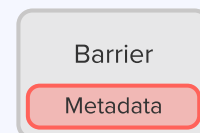
- These minimise the Consequences arising from the Top Event.
- Is it capable of independently stopping the Top Event?
- Are your barriers measurable?

## 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?



# 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!



A screenshot of a mobile application's 'Help Centre' interface. The header is orange with the text 'Help Centre' and a search icon. Below the header is a list of menu items: 'Bowtie Master Tutorials', 'Incident Insight Tutorials', 'Safe Task Tutorials', 'Salus Suite Basics', 'How-to Guides', 'Book a customer support call', and 'Get in touch'. Below the list are three search suggestions: 'Ask anything about Bowtie Master', 'Ask anything about Safe Task', and 'Ask anything about Incident Insight'. Each suggestion has a paper plane icon to its right. The interface is set against a teal background.

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**SALUS** SUITE

Have a  
Question about



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