Cassandra/eCassandra Help Guide

Guidance as to how to Use Cassandra/eCassandra to set up a new Hazard Log and the components within this.

**MorrisE109**

10/10/2016

Table of Contents

Key Symbols and Tips

- The terms Cassandra and eCassandra may be used throughout this document, either term can be used interchangeable and any instruction will apply to both softwares unless otherwise stated.

- **SAVE EACH WINDOW AFTER YOU MAKE ANY CHANGES AND BEFORE YOU MOVE ONTO ANY OTHER VIEWS/WINDOW** – It is very easy not to do this and you may loose any work you have done in that view/window!

- The term 'node' refers to the perspective from which you are viewing the Hazard Log, i.e. from the Hazard 'node' you would be viewing single hazards and any components linked to them.

- Selecting 'Home' from the menu bar as shown below will not take you to the 'Project Home' but back to the Cassandra home where all of your projects are listed. To return to the Project Overview, you will need to select the 'Project Summary' tab.
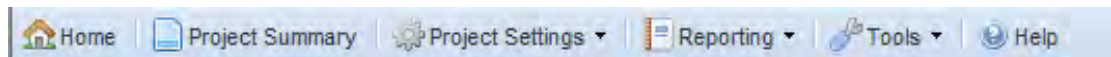
- Table of symbols used within Cassandra;

Cassandra Symbol	Meaning
	Hazard
	Cause
	Accident (Colour of Accident symbol depends on the 'Post Control Accident Status' as per Risk Matrix)
	Control
	Reference

Table 1

1. Creating a New Hazard Log

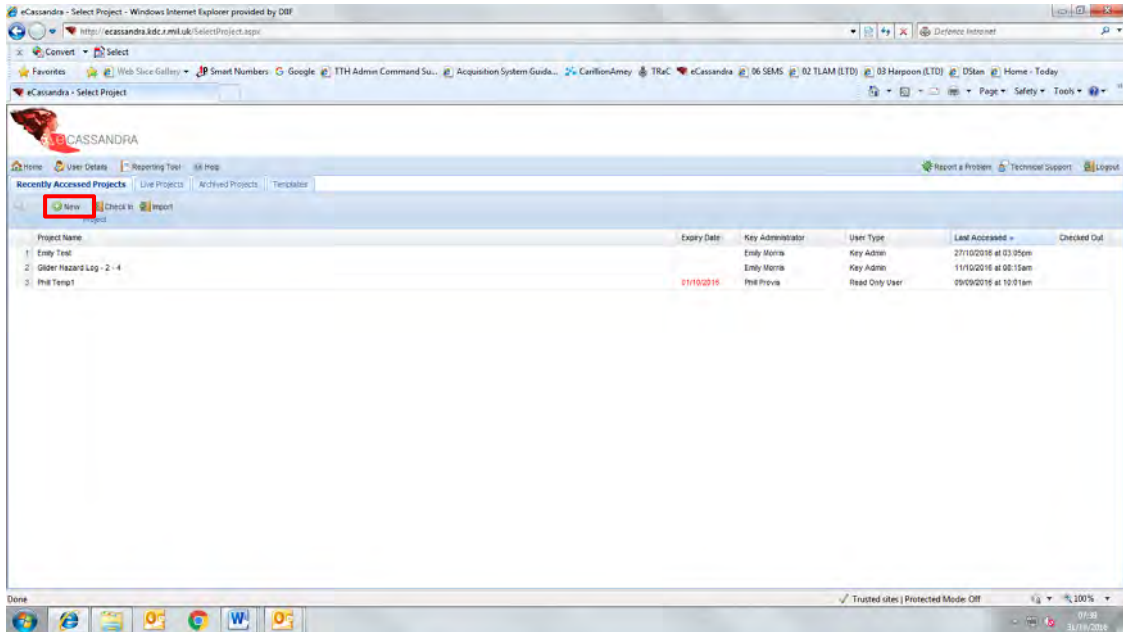From the Home screen select the 'New' icon, indicated by the while plus sign in a green circle (Figure 1).

From this the 'Add Project' screen will be generated, Figure 2. Here you must enter the Project Name, Company Name and Project Prefix. The Project Prefix is a 4 digit reference for the project. It can contain a mix of numbers and letters and must be unique to the project. The project prefix will appear in any reports generated by the system. e.g. a report on Hazard 1 (H1) within a project with the project prefix ABC1 would appear as ' ABC1 H1' followed by the Hazard name.

From this screen you will also need to decide if you wish to use 'Causes' and/or 'Risk Indices'. 'Use Causes' is, as it sounds, the option to use separate causes within the Hazard log, if this box is not 'checked' at this stage the Hazard Log will not have the option to use Causes within its structure, only Hazard, Accident, Control and Reference fields will appear. 'Use Risk Indices' will allow you to assign indices to the Risk Matrix, i.e. classes such as A1, A2, A3, B1, B2, B3 rather than just A, B, C etc.

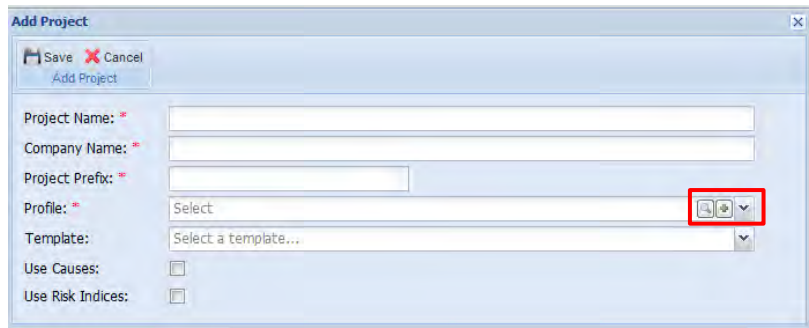Note: This project information **cannot** be changed at a later date.

Figure 2

You will then need to assign a risk profile to the project. To do this you can either select a predefined profile from the dropdown list, or create a new profile by selecting the 'Add Profile' button shown by a green cross. In this example we will create a new profile, and therefore select the 'Add Profile' button. This will bring up a new options screen (Figure 3).
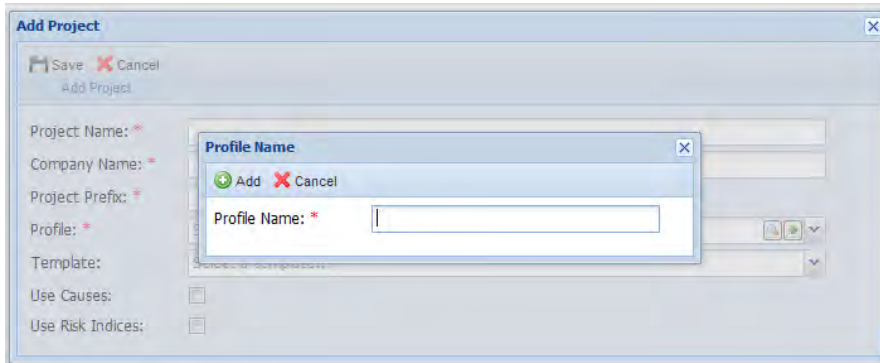
Figure 3

Here you will need to enter an appropriate profile name and then select the 'Add' button. This will bring up the options screen as shown in Figure 4.
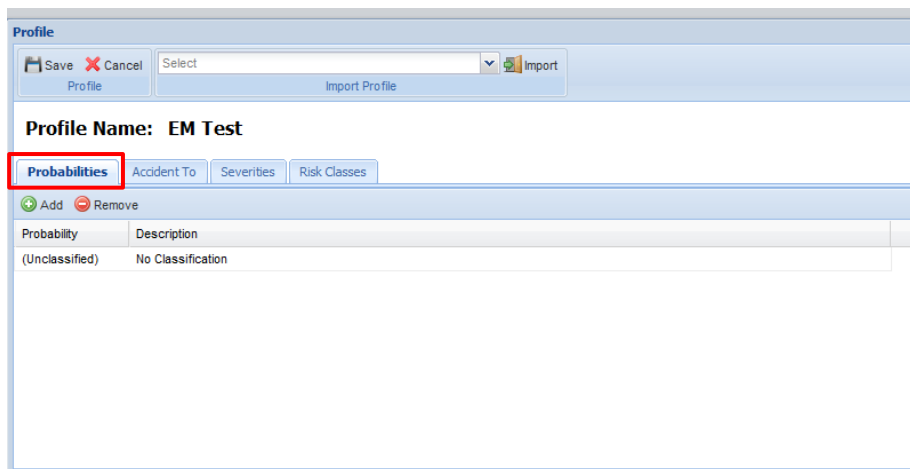

Figure 4

The profile must then have a number of variables assigned. The creator automatically opens to the 'Probabilities' tab (Figure 4). Here we need to add the different accident probabilities as per the Risk Matrix defined for your Hazard Management System.

Note: You will need to enter these probabilities in the order that you will want them to appear in a Risk Matrix, e.g. highest to lowest, once entered and saved the order cannot be changed.
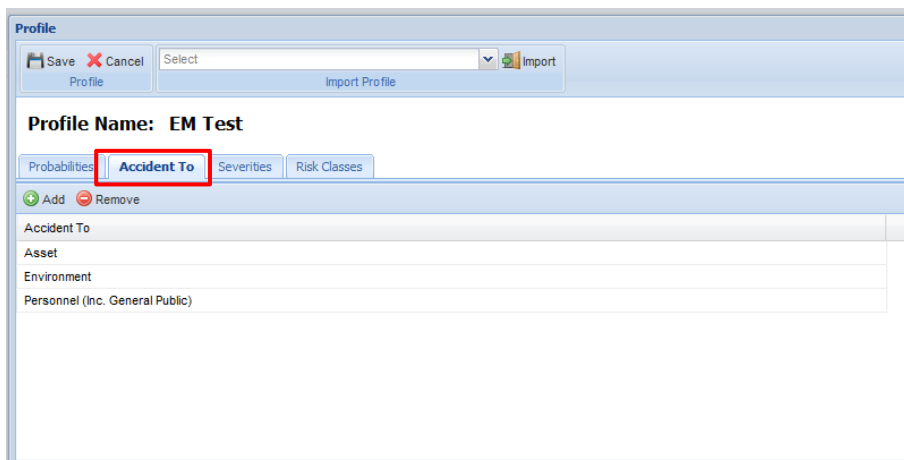

Figure 5

The next tab is the 'Accident To' tab. Here you can create a list of possible areas/people that may be directly affected by an accident e.g. Asset, Personnel, etc. Cassandra automatically generates

the list of three options as shown in Figure 5; these can be deleted and replaced with as many options as are needed for your Hazard Log.
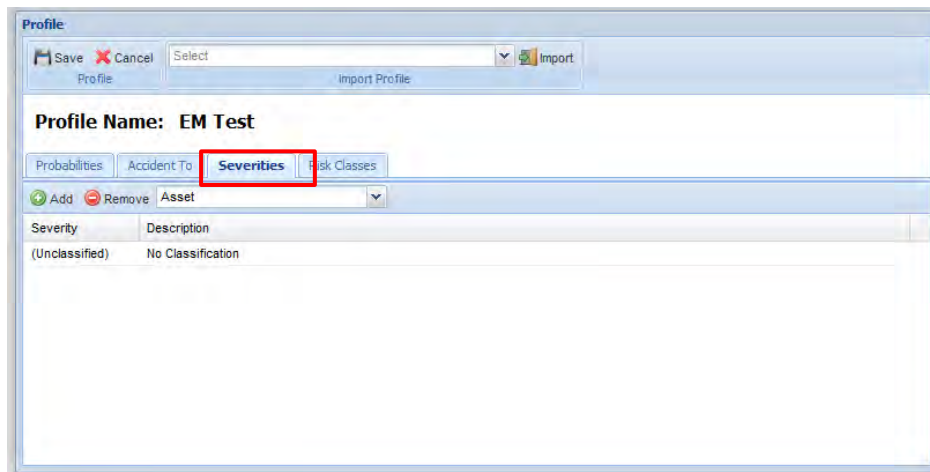

Figure 6

The 'Severities' tab (Figure 7) is similar to that of the 'Probabilities' tab. You will need to enter the severities and their definitions as defined by your Risk Matrix. Again these must be added in the order that you wish them to appear.

For the 'Severities' tab there is an additional option as shown in Figure 7. Here you can select the options for 'Accident To' from the drop down list, and therefore assign different severity definitions for each accident to variable. However the severity 'name' will need to be the same for each variable.
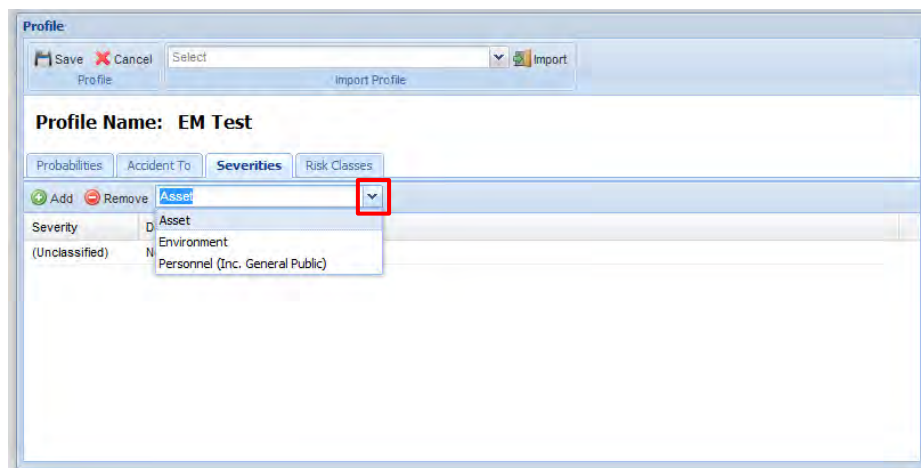

Figure 7

The final area that needs to be defined is the 'Risk Classes' tab (Figure 8). This is where you need to define the Risk Classes again as per the Risk Matrix. The description/definition for each class can be added here.

Note: We are not yet linking the severity, probability and risk class at this stage as these links are created later on within the project.
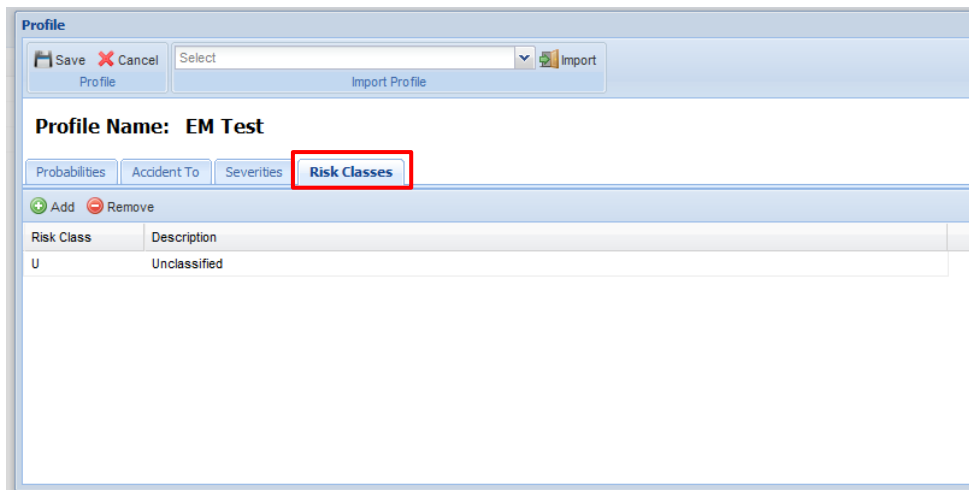
Figure 8

Once all of the 'tabs' have been completed (Figure 4 to Figure 8) click the save icon. This will save the 'Profile' and return you to the project screen where all of the boxes/options should now be complete (Figure 9). After you have filled in all the options again click the 'Save' icon and your new project will be created and automatically open within Cassandra.
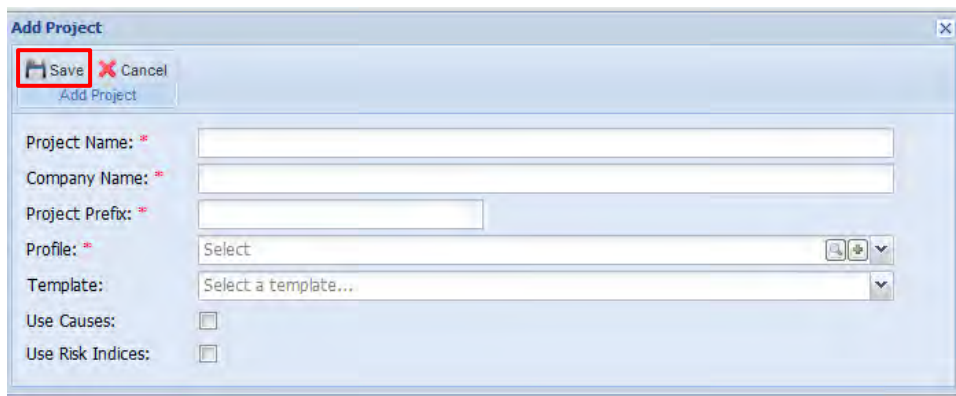

Figure 9

Once the project has opened we can now assign the relationships between the 'Probability', 'Severity' and 'Risk Class' that we have just defined. To do this we need to select the project settings tab at the top of the project page, from this select menu the option for 'Profile' which will expand to a second menu, the option we require is 'Risk Classes' as shown in Figure 10.
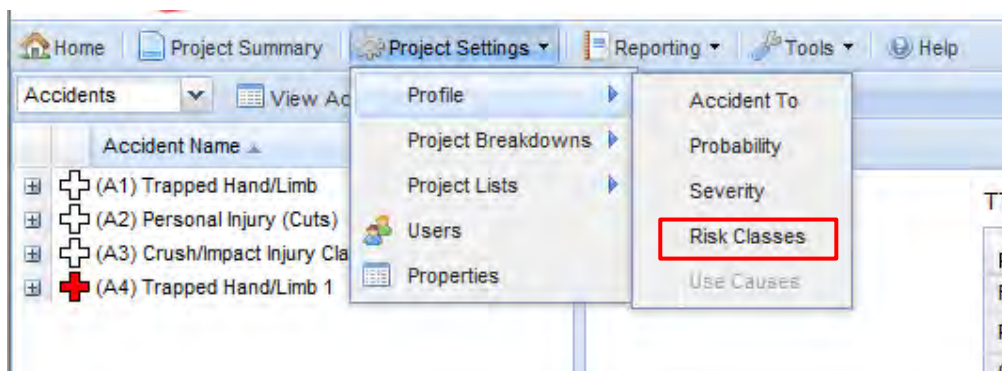

Figure 10

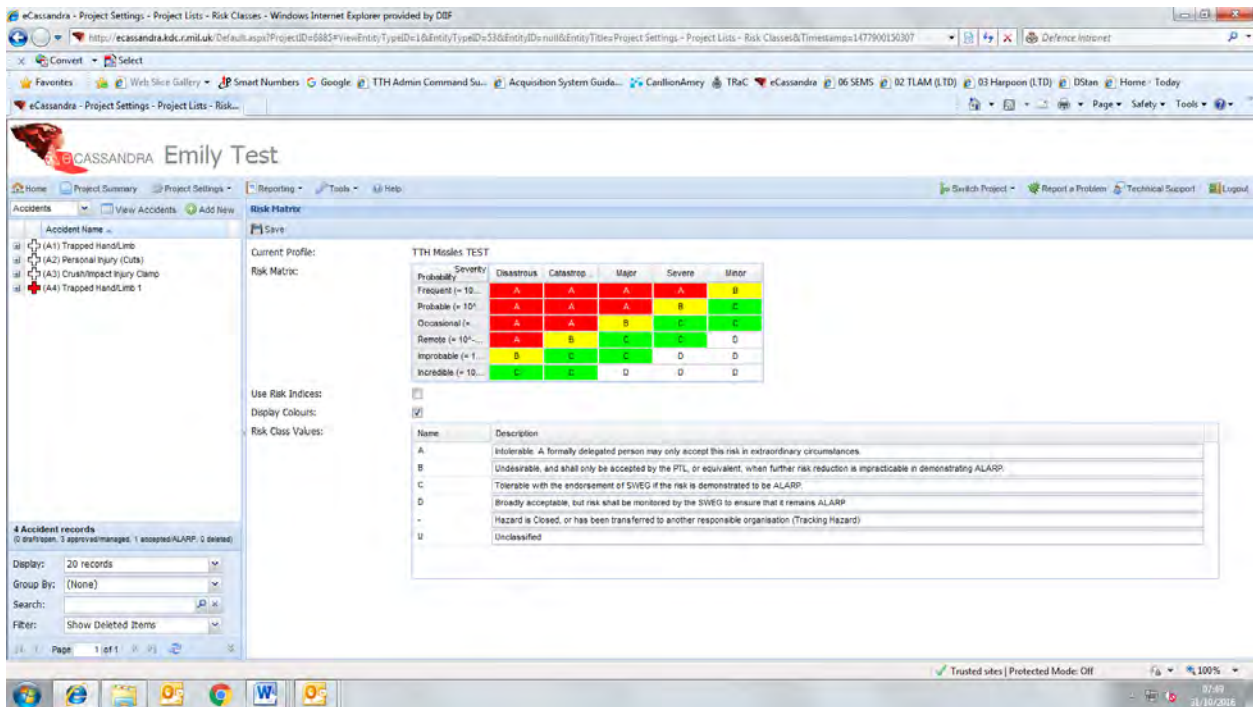This will open the risk matrix (Figure 11).

Figure 11

Upon opening this matrix for the first time all cells within the matrix will be assigned the classification 'U – Unrated'. To change this, select the cell you wish to change, a drop down box will then appear below the risk matrix (Figure 12). From this list you can then select the appropriate classification for that cell within the matrix. To complete the matrix you will need to repeat this process for each cell until they are all assigned classifications as defined in your particular Hazard Log. Once you have completed the risk matrix, make sure to click the 'Save' icon at the top left of the screen.

It is worth noting that the colours assigned to each risk class are chosen by Cassandra, you cannot choose these yourself.
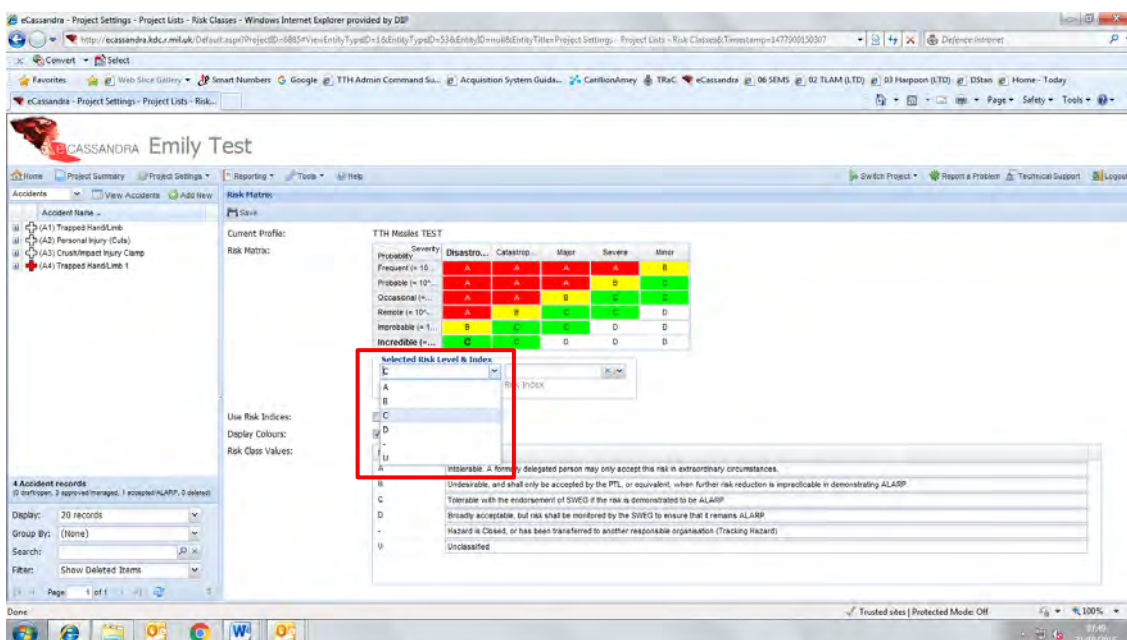

Figure 12

The next stage in setting up the Hazard Log is to define the Location breakdown. This is the list of physical locations where a Hazard/Accident/Cause may occur. To create this list we need to open

the 'Project Settings' menu. This time we select the 'Project Breakdowns' sub menu and then 'Location Breakdown' (Figure 13).
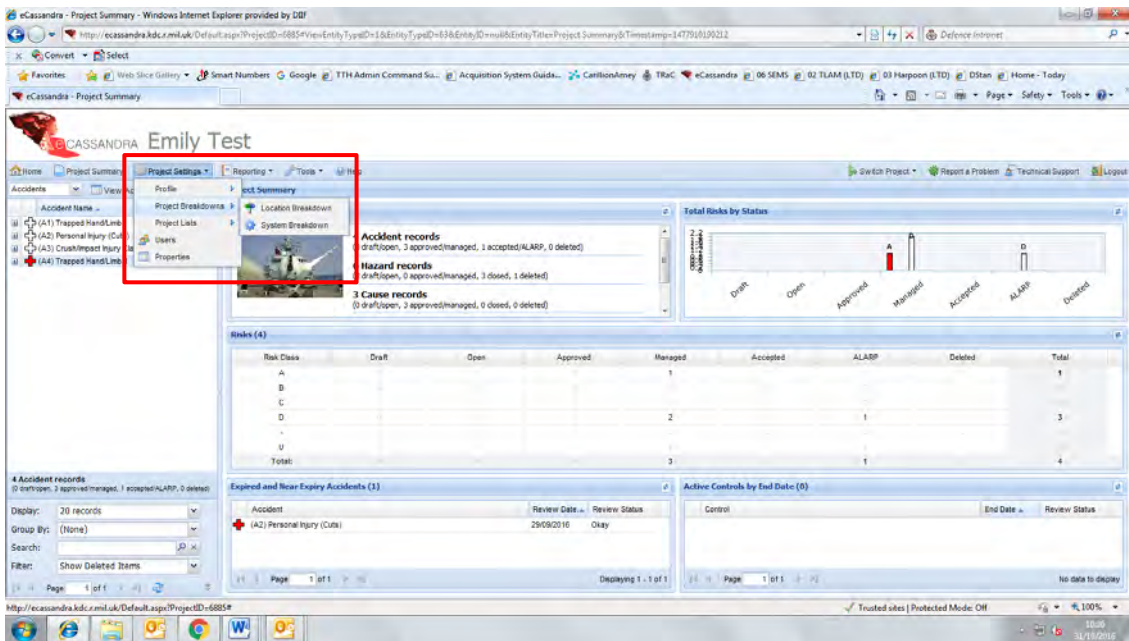

Figure 13

From this screen you can add the locations of possible Hazards as defined by your Hazard Log. To add a Location 'right click' on the white area of the 'Location Breakdown' screen. This will bring up the 'Add Location' option as shown in Figure 14.
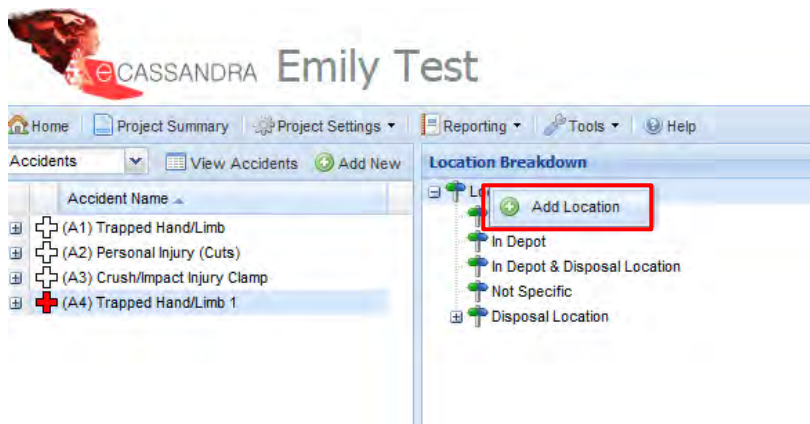

Figure 14

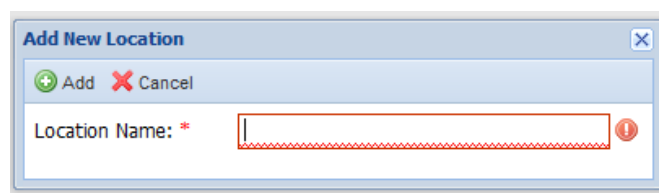From here you can add the locations as required by your particular system (Figure 15).

Figure 15

You can reorder the locations within the breakdown structure by clicking on a location and dragging them into the order you require. You can structure your location breakdown in a linear way, like a list, or you can structure it as a list of main locations with 'sub-locations' within these.

Note: you can only assign a hazard to one location within the breakdown, if a hazard occurs at more than one location you may require a location within the location breakdown such as 'Multiple Locations' to cover this option.

Once you have added a location to edit, delete or add a sub-location within it you can right click on the location and the following options will appear, Figure 16.
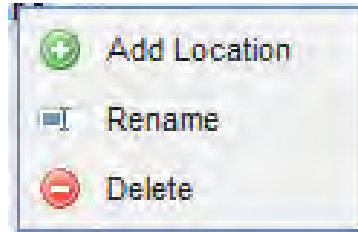

Figure 16

To exit out of the Location Breakdown you do not need to save any changes. If you click out of the Location Breakdown for example by clicking on the 'Project Summary' icon at the top of the Hazard Log screen this will automatically save any work you have done on the Location Breakdown.

You can add to/edit the Location Breakdown at any point during the project.

The final set of variables that we need to define is the 'System Breakdown'. This is the system in which a Hazard/Accident/Cause originates. The System Breakdown is accessed via the 'Project Settings' and then 'Project Breakdowns' as shown in Figure 13.

Once in the System Breakdown page you can add the system again as a linear, list type structure or as a multi-level breakdown. This will be determined by your Hazard Log convention. The level of detail to which this is broken down into is again determined by your projects conventions.
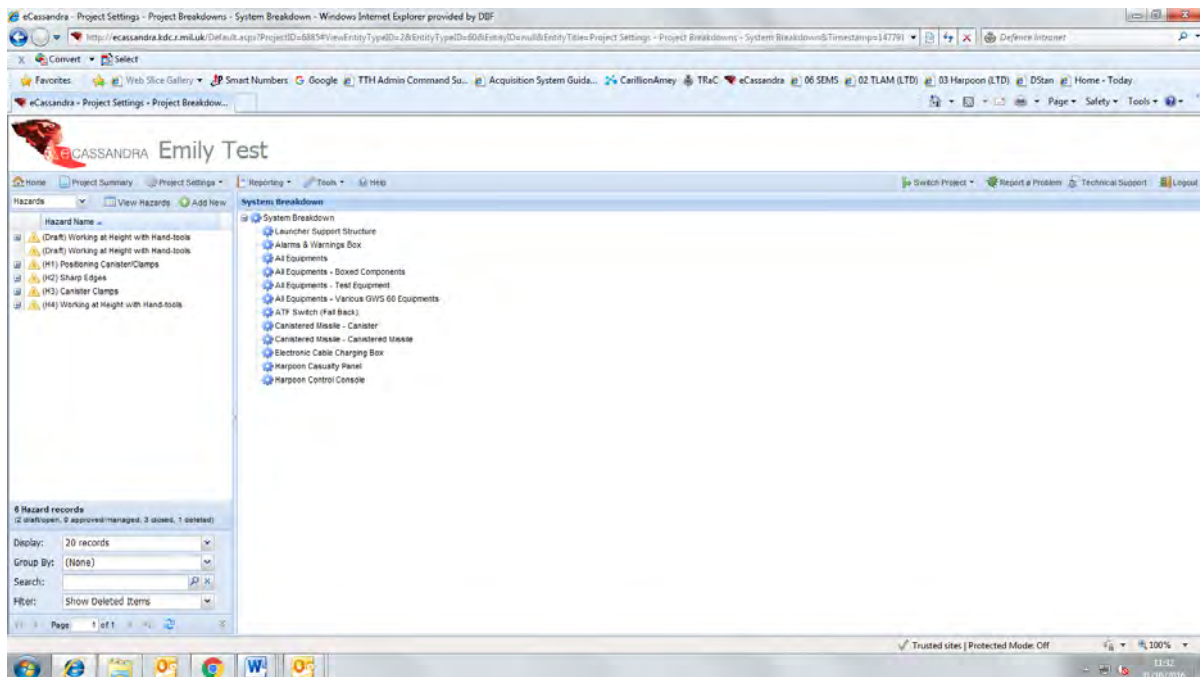

Figure 17

To add a new component to the System Breakdown, right click on the white area of the screen and select the 'Add System' option (Figure 18).
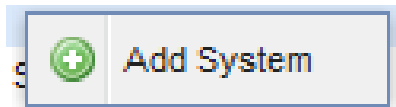
Figure 18

The System Breakdown can be added to/edited at any point during the project. To do this you can 'right click' on the component you wish to edit and the same editing options will appear as in Figure 16.

To exit from the System Breakdown you do not need to save any changes simply click the 'Project Summary' icon and any changes made will be automatically saved.

This step is the final stage in defining our Hazard Log options and limits. There are all of the systems now in place to start creating the Hazard, Accident, Cause, Control and References.

However there are two more 'Admin' activities that should take place before you progress to start populating the Hazard Log.

The first is to add any additional users of the Hazard Log and define their Permission Level to the project. To do this you will need to go to the 'Project Settings' and from there select the 'Users' option (Figure 19).
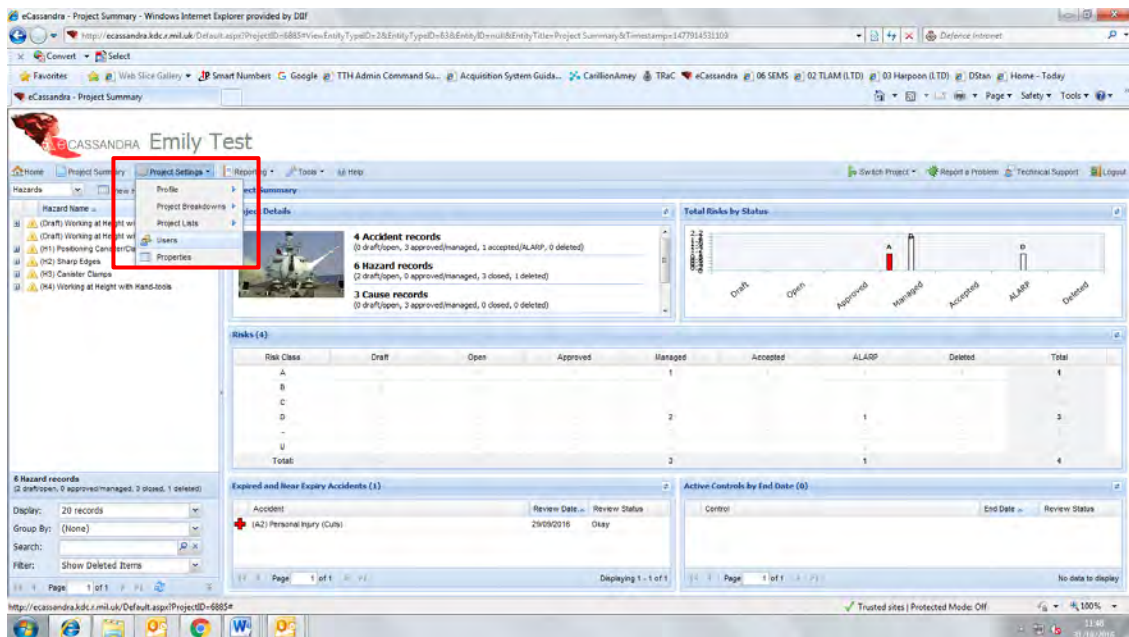

Figure 19

This will open the 'User Permissions' window (Figure 20). From here you can search through the list of all Cassandra users and select those who you wish to have access to your project. You can reduce the list of Users by using the search tool, highlighted in Figure 20. Once you have found the user that you wish to add to the project, select their name and then click the symbol in the centre of the window shown by two arrows pointing to the right (Figure 20).
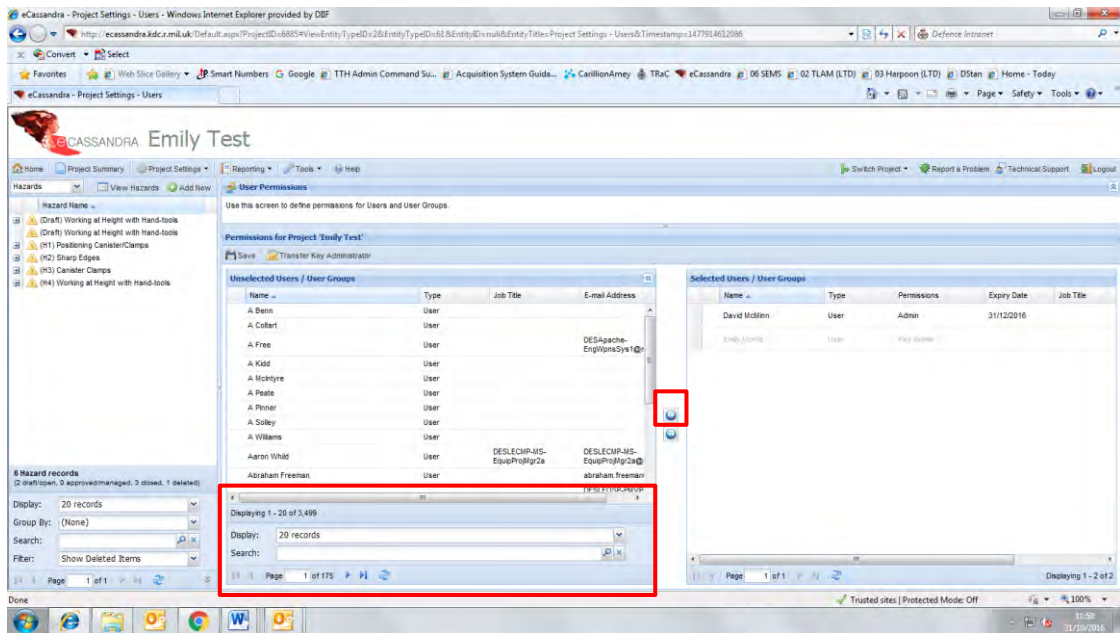
Figure 20

Once you have added the user to the project you will need to define their level of access to the project, and sent an expiry date for their access.

The level of access is defined in Figure 21 as taken from the Cassandra inbuilt help guide.

User Permissions

eCassandra permits five levels of user rights/permission. The *Key Administrator* is required to establish each user and allocate the appropriate access rights.

- Key Administrator – Only one *Key Administrator* is permitted per file. A *Key Administrator* has full control of the file (this includes editing rights over the *Probability*, *Severity* and *Risk Definitions* and *Risk Matrix*, full editing rights over *Accident*, *Hazard*, *Causes*, *Controls*, *References* and pre-defined fields). The *Key Administrator* is able to assign users access to the log and change expiry dates. The Key Administrator is able to enable the *Cause* capture facility that allows *Cause* records to be recorded for *Hazards* (once enabled this facility can not be turned-off). The Key Administrator's access to a file is does not have an expiry date.

- Administrator – Has similar rights as the *Key Administrator* (see above) with some important differences. There can be more than one *Administrator* and *Administrators* cannot assign other *Administrators* or a *Key Administrator* (only a *Key Administrator* can do this). Their access to a file is limited by an expiry date.

- Approval - Has read/write access to the file and reporting system and the ability change the status of *Hazards*, *Accidents* and *Controls* (as agreed by the *Management Authority*). *Approvers* cannot edit the *Severity*, *Probability* or *Risk* definitions or the pre-defined fields.

- User - Has read/write access to the *file* and reporting system. This is the default. A *User* cannot alter the status of any *Hazard*, *Accident* or *Control* (apart from changing it from *Draft* to *Open*) and they cannot edit any other information within the file.

- Read Only User - Most basic level of access. Has read only access to the file and reporting system. The *Read Only User* is not able to add, modify or delete any data, but is able to print reports.

In order to give *Access Rights* select the appropriate radio button.

The *Key Administrator* automatically has all rights. There can only be one *Key Administrator* per hazard log. Only the *Key Administrator* can transfer *Key Administration* privileges to other *Administrators* or assign new *Administrators*. Other *Administrators* can only assign users *Approval Rights* and below.

Personnel who move off the project are not deleted from the list. However their access can be restricted via the *Expiry Date* and the *Key Administrator* change their password to prevent them from accessing the data file.

Figure 21

By default you will be the Key Administrator of the project. Once you have decied on the level of access that you wish to assign to other users, you can select this from the dropdown list by their name, highlighted in Figure 22.
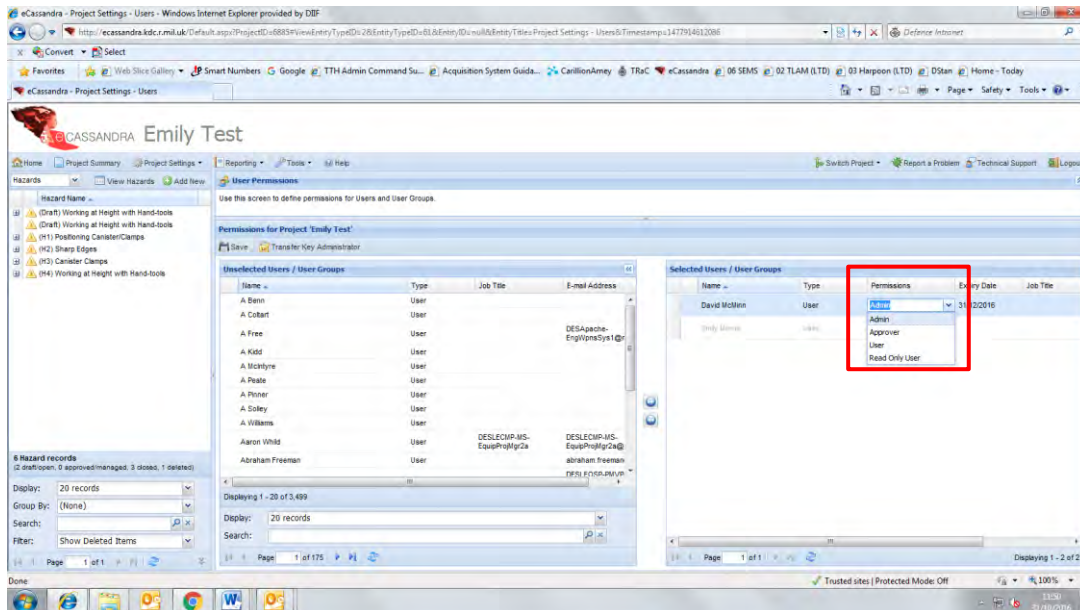

Figure 22

You will also need to assign the user an expiry date for access to the project. This can be any date and must be selected from the calendar in the drop down menu as shown in Figure 23. This expiry date can be extended at any point if the user requires further access to the project in the future. Once this is all defined make sure to click the save icon to save any progress.
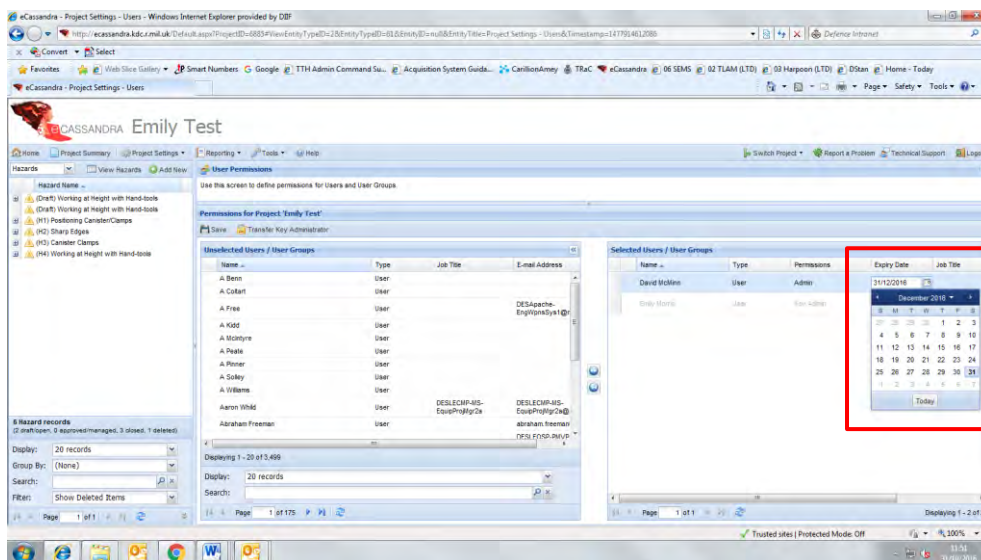
Figure 23

You can also add additional users to the project at any point.

The final 'Admin' step is to upload a project picture and company logo. This is done through the 'Project Settings' menu and selecting the 'Properties' option (Figure 24).
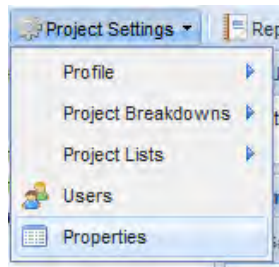
Figure 24

From here you can browse your documents/files to select and appropriate photo for the 'Project Summary' screen and also a company logo for the project (Figure 25)
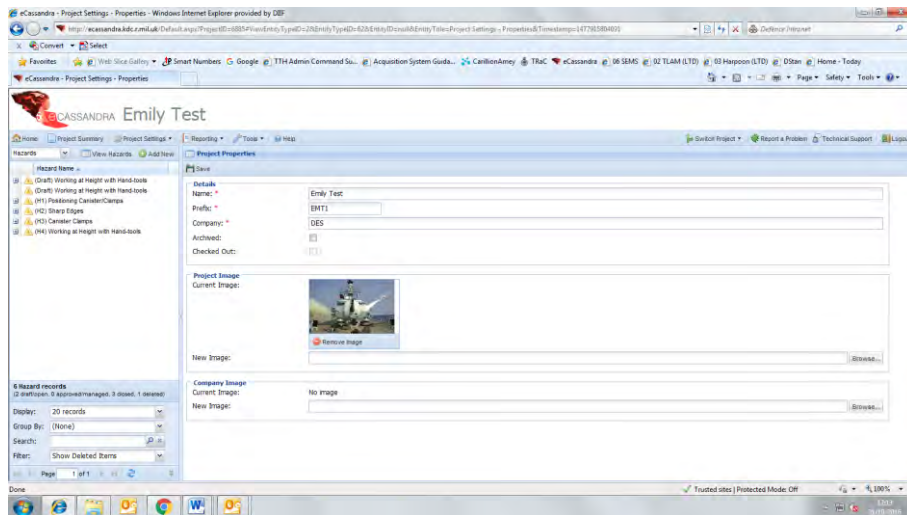

Figure 25

From here you can save the changes using the 'Save' icon and return the project summary.

2. Opening a Created Hazard Log

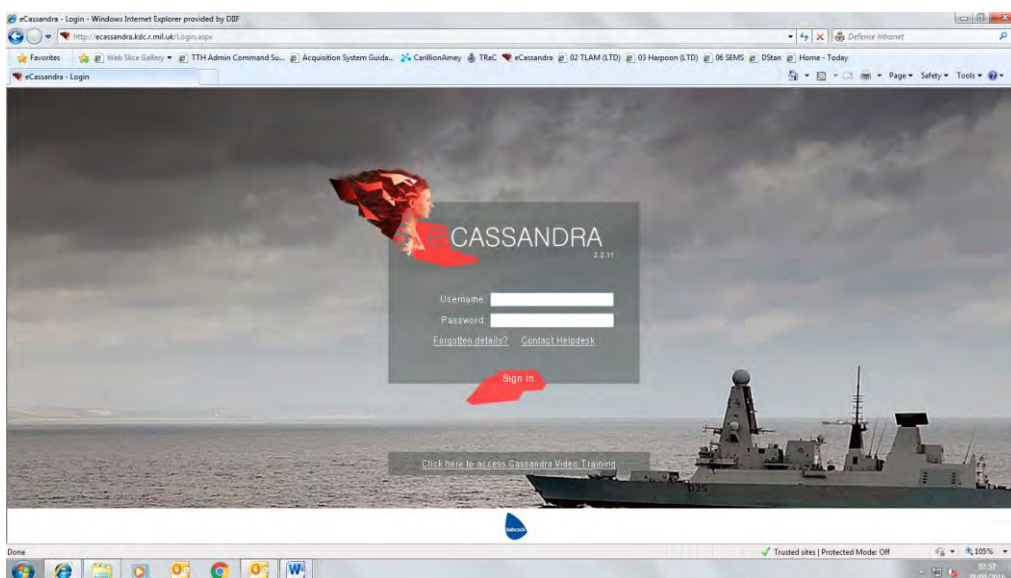The first step is to log into Cassandra Figure 26

Figure 26

You will then need to select the relevant Hazard Log from the list.

The first screen is your 'Recently Accessed Projects' (Figure 27). You many need to look at the other tabs at the top of the page such as 'Live Projects' which are those that have not been archived and that you are either Administrator or have access to.
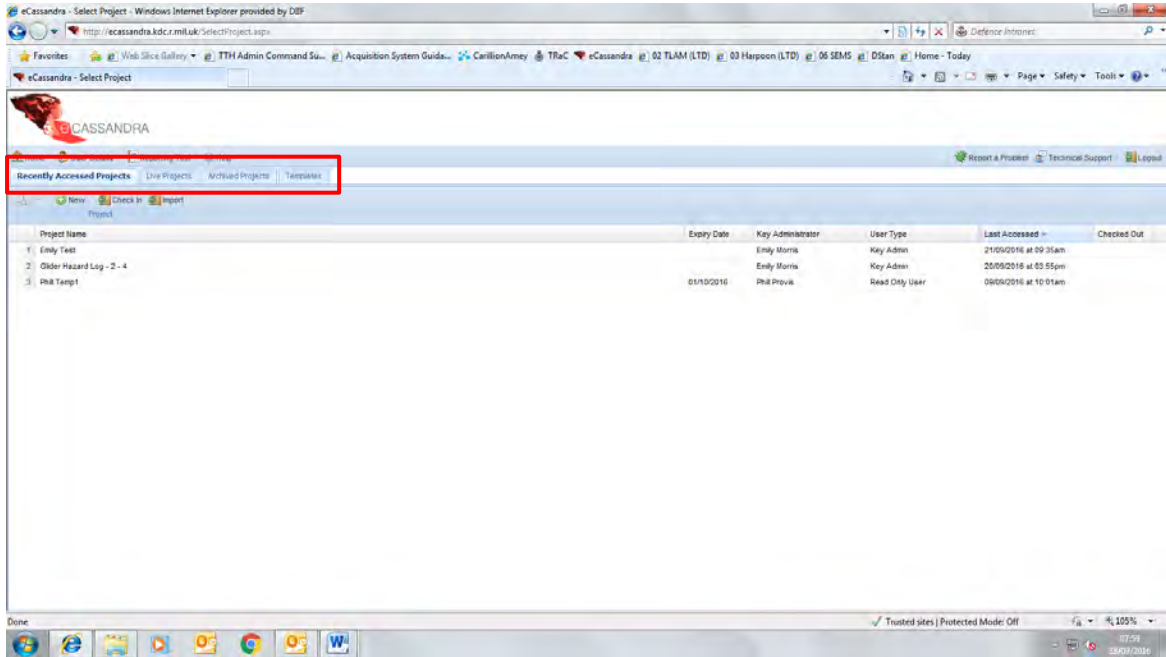

Figure 27

In this case we will use the 'Glider Hazard Log'.

Once the project has opened you will be able to see the front screen (Figure 28), which has a summary of the details contained in the Hazard Log.
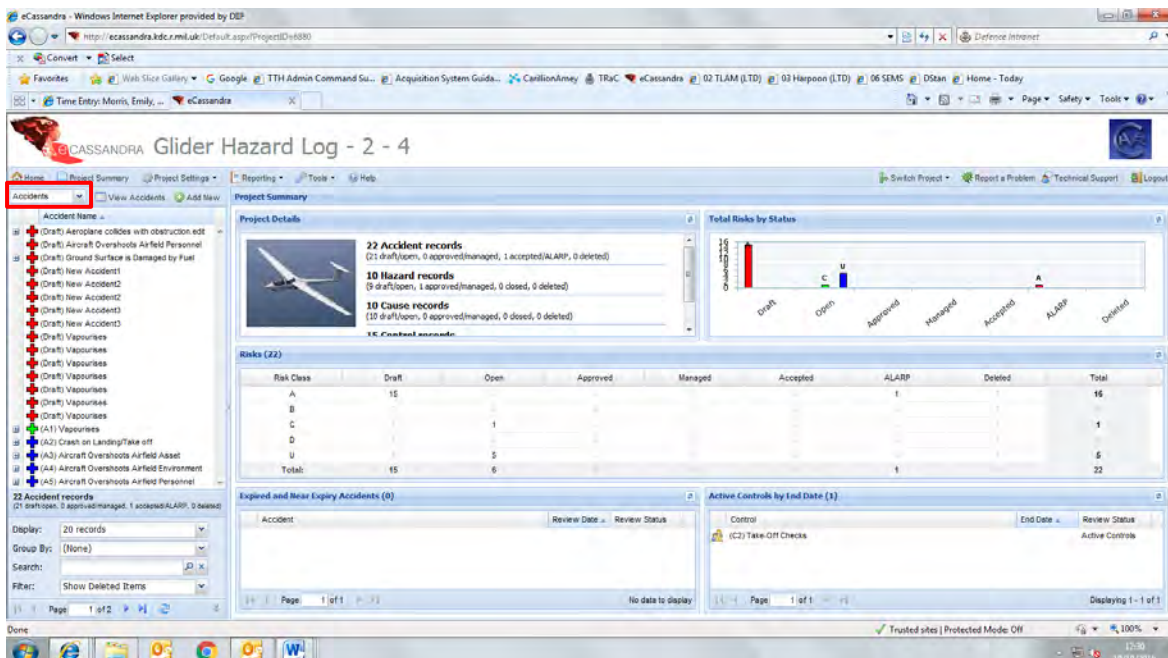

Figure 28

3. Adding a New Hazard

Cassandra automatically defaults to what is known as the 'Accident Node' on the left hand side of the page. This means that the 'tree structure' of the Hazard Log is viewed from the Accident perspective. To change this to Hazard View click on the drop down box, as highlighted in Figure 28, and Select the 'Hazard' option. The drop down list is shown in Figure 29.
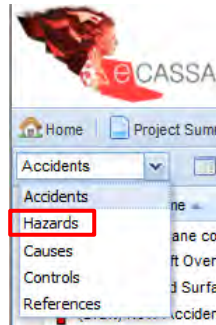

Figure 29

This allows us to view the Hazard Log from the Hazard perspective. Once in this view click the 'Add New' option shown by a green circle with a white plus sign inside. This will display the data entry fields available to add a new Hazard (Figure 30).
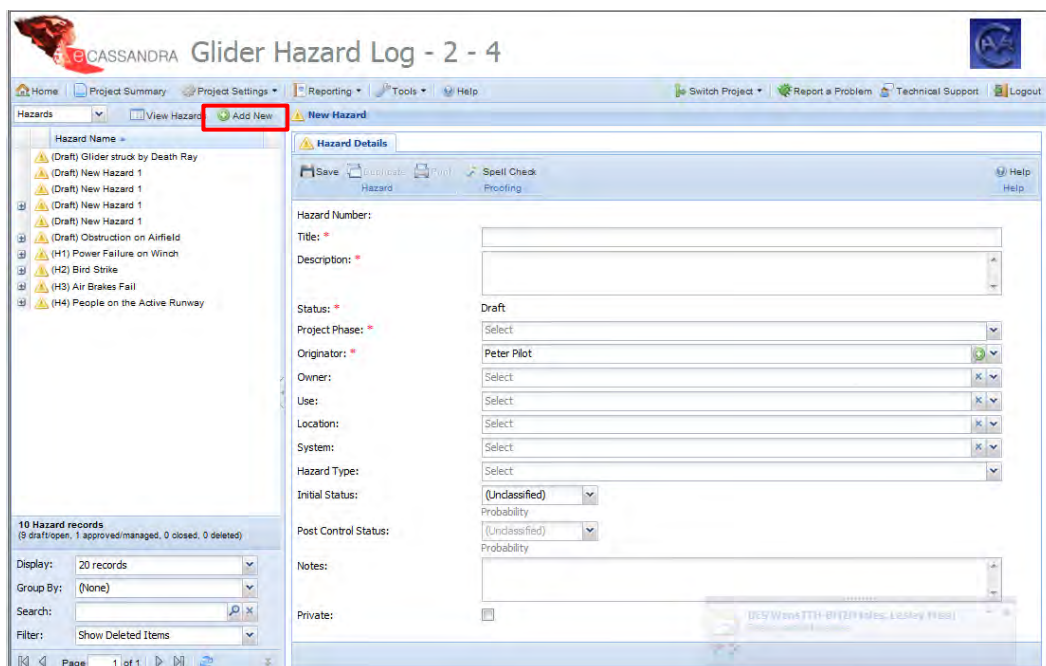

Figure 30

For details on how to fill out the data entry fields refer to the relevant *Hazard Log Definition Guide*.

Once the required fields are completed click the 'Save' button shown by the floppy disk icon.

Note: You can check that the Hazard has been added by looking in the list of Hazards on the left hand side of the screen. Your new Hazard should have appeared. To check any details within the Hazard simply click on the Hazard name and the 'Hazard Detail' screen will be displayed.

You can also manually refresh any of the 'tree view' panels by right clicking anywhere in the left hand panel and clicking the refresh box as shown in Figure 31.
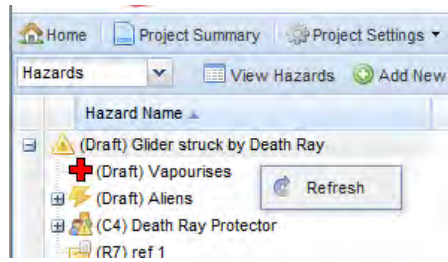

Figure 31

4. Adding a new Cause, Control, Accident or Reference

As for adding a Hazard you will need to change the view to the relevant 'node' (Figure 28 & Figure 29).

Once in the correct node again select the 'Add New' option shown as the green circle with the white plus sign in the centre.

The required data entry fields will then appear. Again the details for filling these fields out are found in the ***Hazard Log Definition Guide***.

Once the required fields are completed click the 'Save' button shown by the floppy disk icon.

Again you can check the new component has been added by looking at the list on the left hand side of the screen.

5. Linking Hazard Log components

Once you have added all of your 'components' from your bow-tie analysis you can look at linking these up to create the fully defined Hazard Log.

There are five types of linkages that we are interested in.
1. Hazard – Cause
2. Hazard – Accident
3. Hazard – Reference
4. Cause – Control
5. Accident – Control

Cassandra will allow other linkages to be added however the five listed above are sufficient to model the Hazard Log based on a Bow-tie Hazard Structure/Breakdown.

Cassandra will not allow Accidents to be linked to Causes.

5.1. Hazard – Cause Links

The first link that we will look at is the Hazard – Cause link. To create this you need to select the Hazard node view as detailed in the previous sections.

This time instead of creating a new Hazard you will need to select a previously created Hazard from which you wish to create the Hazard-Cause link. Select the chosen Hazard from the list on the Left Hand Side of the screen (Figure 32).
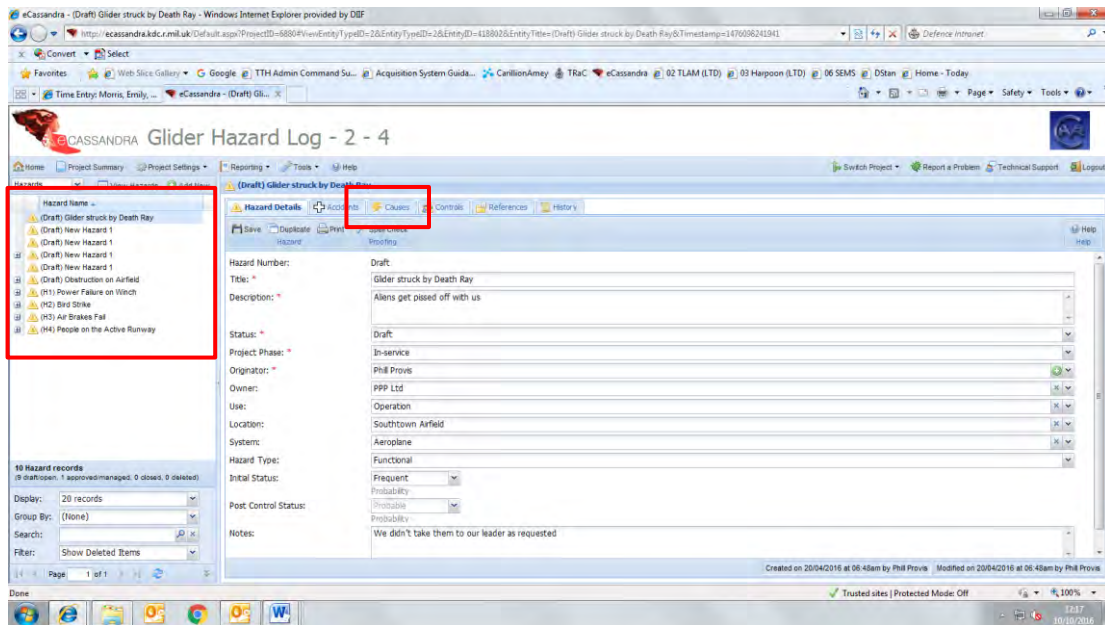
In this example we have selected the first Hazard from the list 'Glider Struck by Death Ray'.

To create the link to the related cause from this screen you will need to select the Cause 'tab' at the top of the 'Hazard Details' panel in the centre of the screen (Figure 32). This is shown by the smaller red box.

Once you have selected this the screen will change to show any causes already linked to this Hazard (Figure 33).
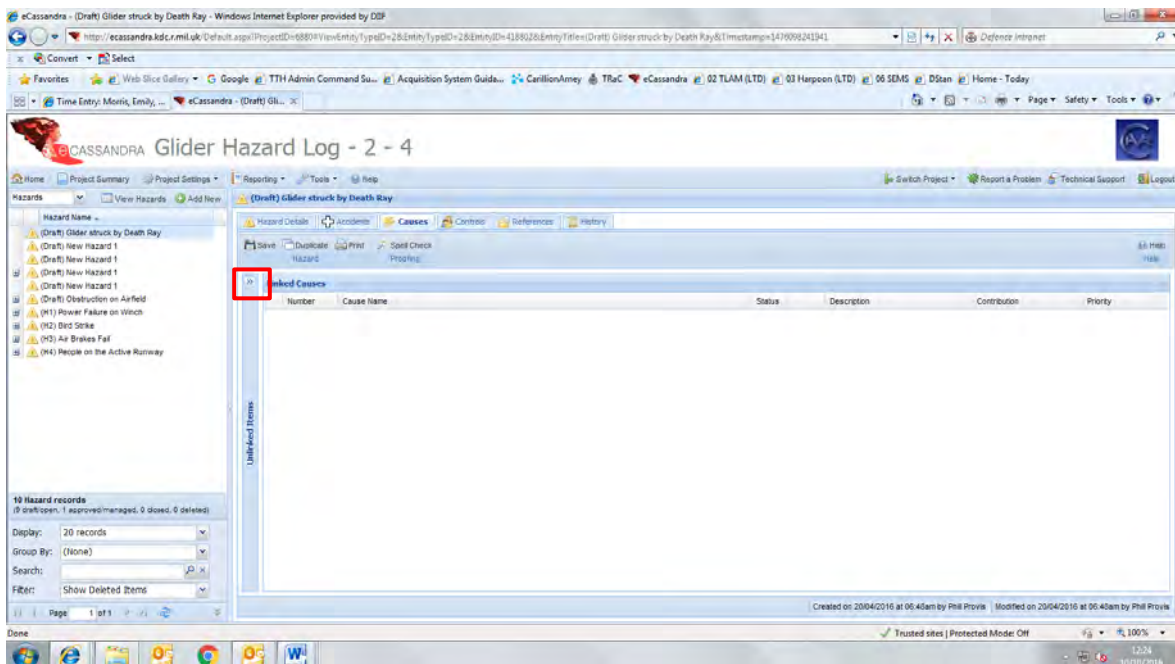
Figure 33

To add a new link we must expand the list of 'Unlinked Causes'. This is accessed by selecting the double arrow symbol at the top left next to the 'Linked Causes' title, shown by the red box in Figure 33.

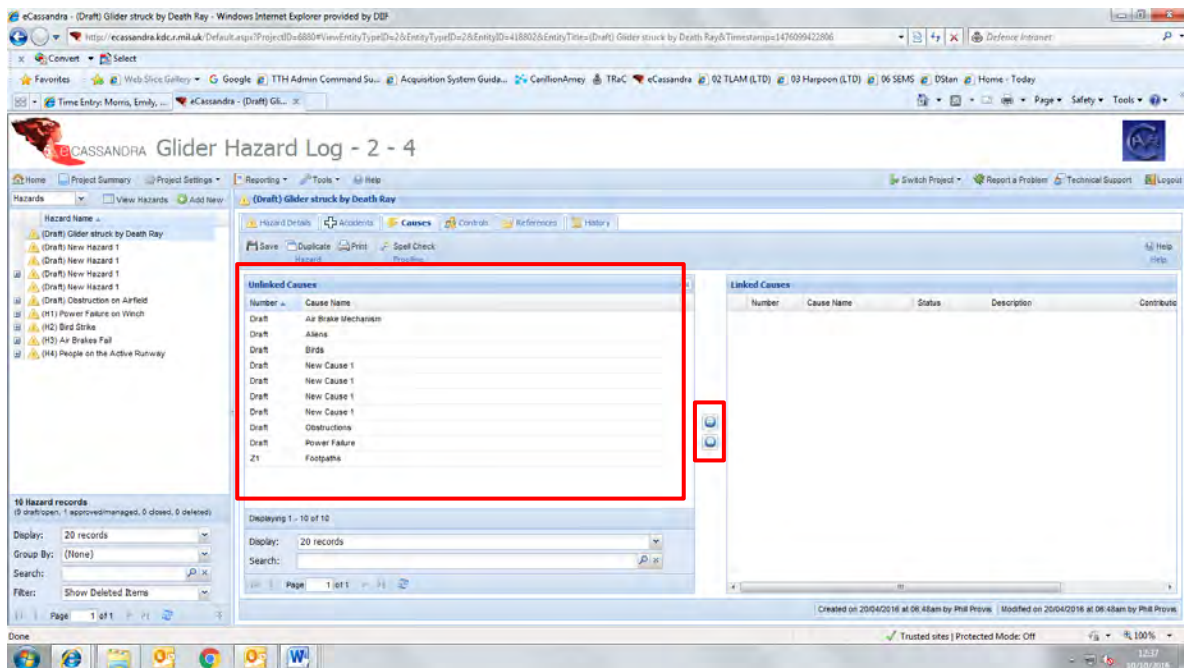This will then display a list of all the Causes within the Hazard Log (Figure 34).

Note: While this list is called 'Unlinked Causes', these Causes may be already linked to other Hazards, Cassandra allows for a single Cause to be linked to multiple Hazards. It also allows for multiple Causes to be linked to a single Hazard.

Once the 'Unlinked Causes' pane has been expanded you can then add a link to the relevant Cause of the Hazard. To do this you need to select the cause from the list on the left hand list.

To add a Hazard – Cause link select the Cause that you wish to link. Once this is selected, click the top symbol shown in the centre of the panel in Figure 34. This is the blue circle with two white arrows pointing to the right.

This will then move the selected Cause to the right hand panel and therefore it will become a 'Linked Cause' (Figure 35). To remove a link, use the bottom symbol, pointing to the left.
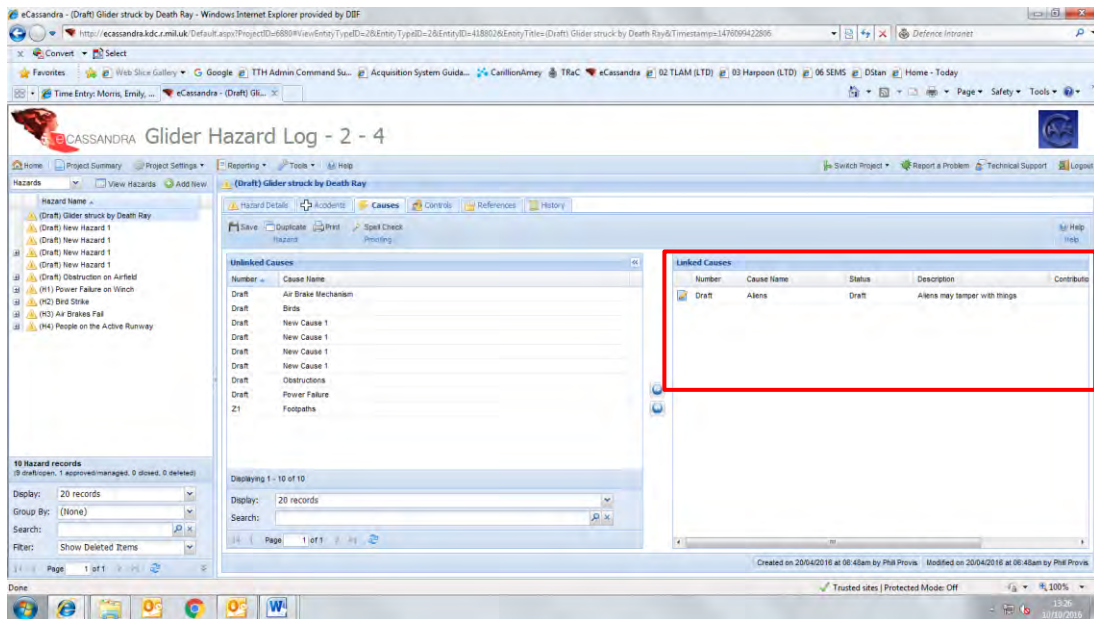
Figure 35

Once the required links are added click the 'Save' button shown by the floppy disk icon. This will save the links added.

As both the Hazard and Cause are in the 'Draft' status the link will not appear on the Hazard node view, even if the link has been added successfully. (Once both components are change out of the Draft status this will appear as a small Grey Plus symbol next to the Hazard Name, this can be clicked to expand and view any linked components including the linked Cause).

To check that the link between the Hazard and Cause has been added successfully you will need to view the Hazard Log from the Cause 'node' (Figure 36).
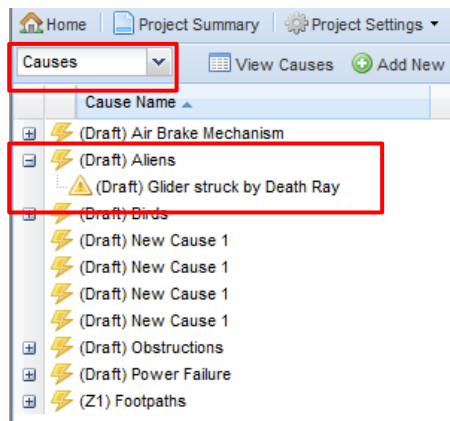
Figure 36

By expanding the Cause that you have just linked you should see the Hazard name that you have just created a link to.

5.2. Hazard – Accident Links

This is very similar to the previous linkage method.

Start by selecting the Hazard that you wish to link from the Hazard 'node'. This time you want to select the Accident 'tab' from the top centre of the 'Hazard Details' panel (Figure 37).
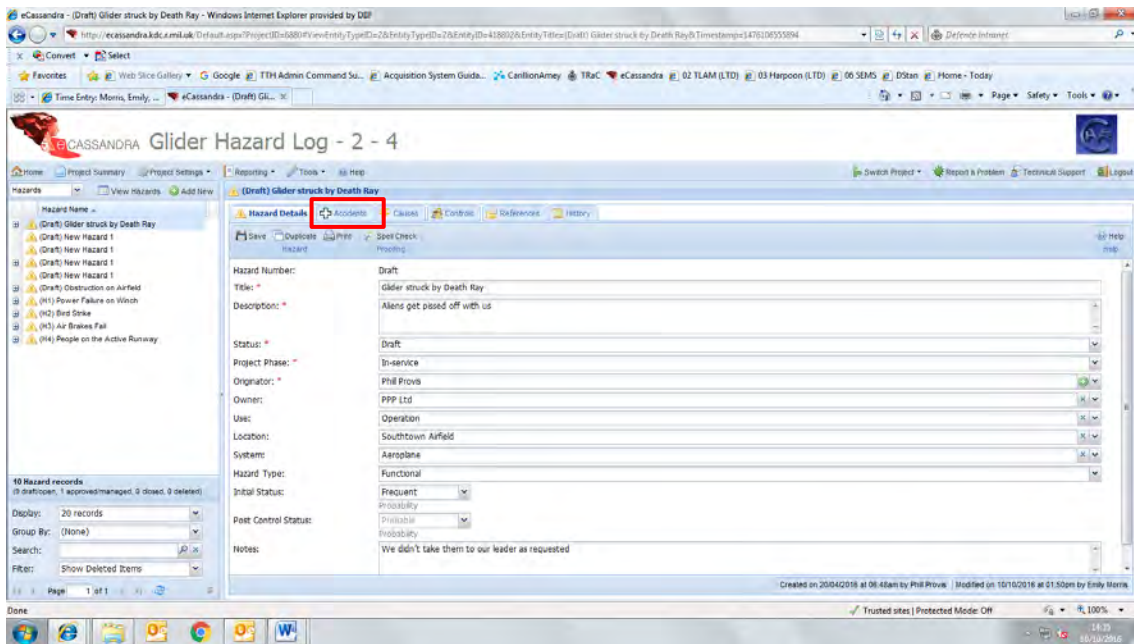
Figure 37

Again you will need to expand the view to show the 'Unlinked Accidents' using the double arrow symbol at the top left next to the 'Linked Accidents' title.
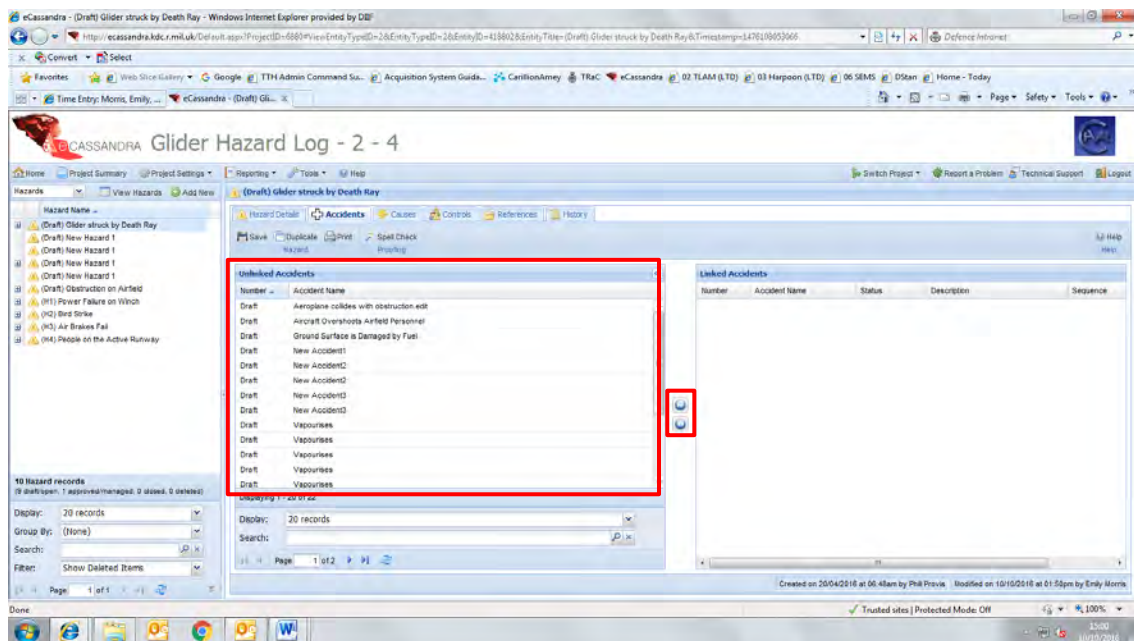

Figure 38

To link an Accident from the list to the Hazard you need to select the Accident name and then the first symbol in the centre of the panel, the blue circle with two white arrows pointing to the right (Figure 38). Again to remove a link you can use the symbol below the previous one, where the arrows are pointing to the left.
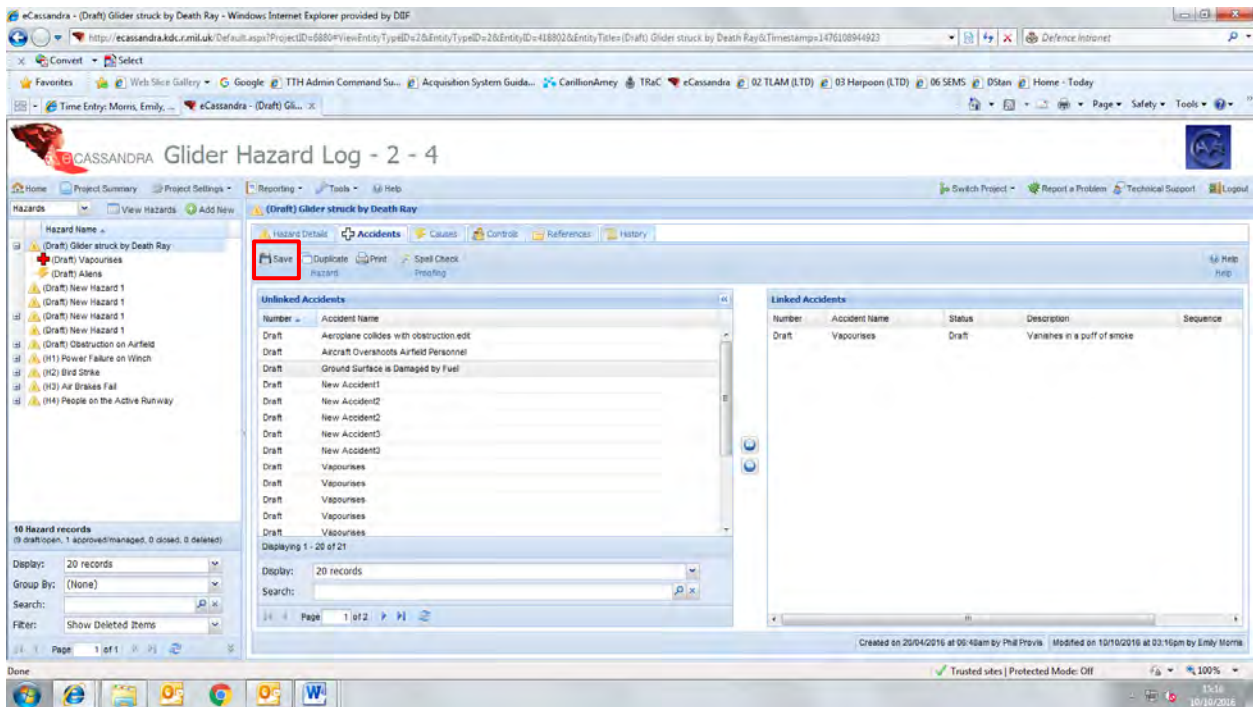
Figure 39

Once this link has been made click the save icon (Figure 39). Once the Hazard – Accident link has been saved the Hazard 'node' view should refresh. After the refresh the Linked Accident should appear 'under' the Hazard, notice how the linked Cause from the Hazard – Cause Links section has also become visible from the Hazard view structure (Figure 40).
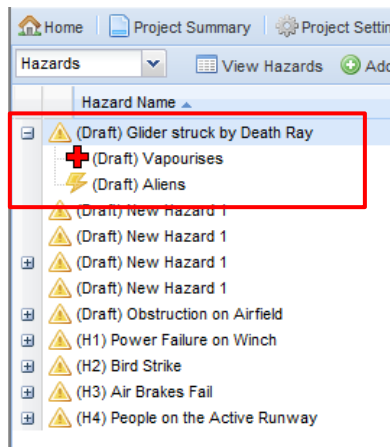
Figure 40

You can also manually refresh any of the 'tree view' panels by right clicking anywhere in the left hand panel and clicking the refresh box as shown in Figure 41.
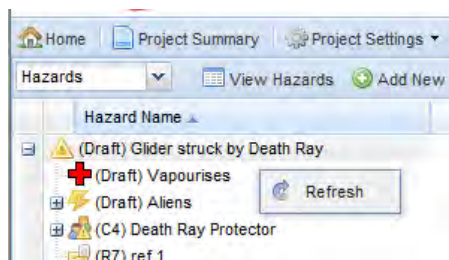
Figure 41

5.3. Hazard – Reference Links

Again this is a very similar method to the previous two sections.

Start by selecting the Hazard that you wish to link from the Hazard 'node'. This time you want to select the Reference 'tab' from the top centre of the 'Hazard Details' panel (Figure 42).
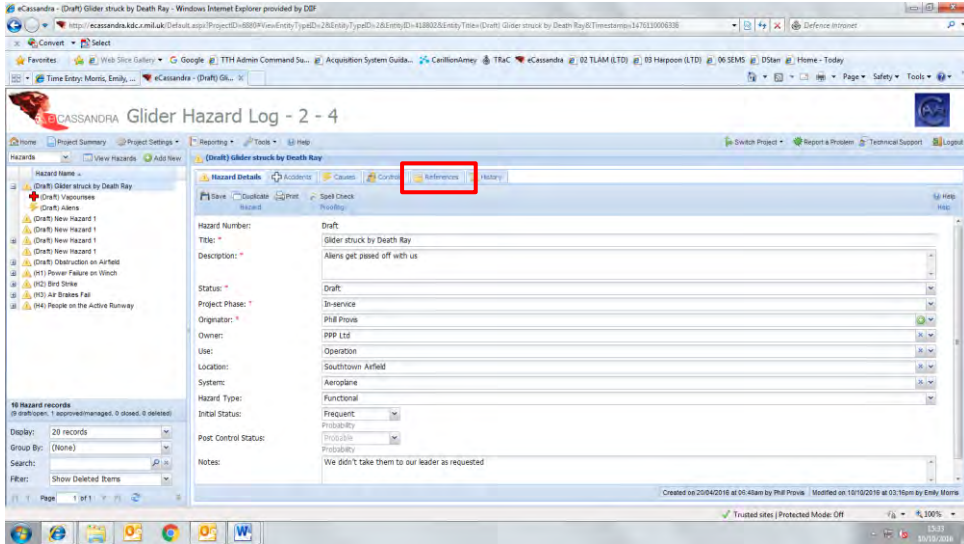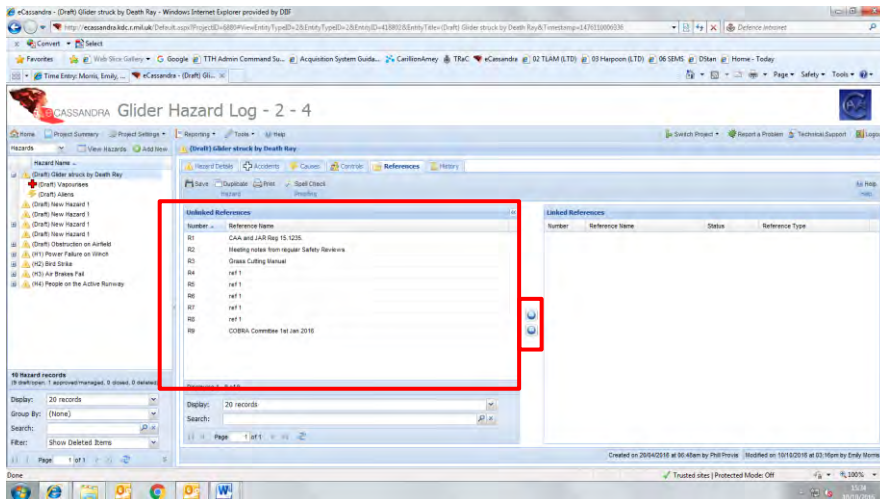

Figure 42

You will need to expand the view to show the 'Unlinked References' using the double arrow symbol at the top left next to the 'Linked References' title.

To link a Reference from the list to the Hazard you will need to select the Reference name and then the first symbol in the centre of the panel, the blue circle with two white arrows pointing to the right (Figure 43). Again to remove a link you can use the symbol below the previous one, where the arrows are pointing to the left.
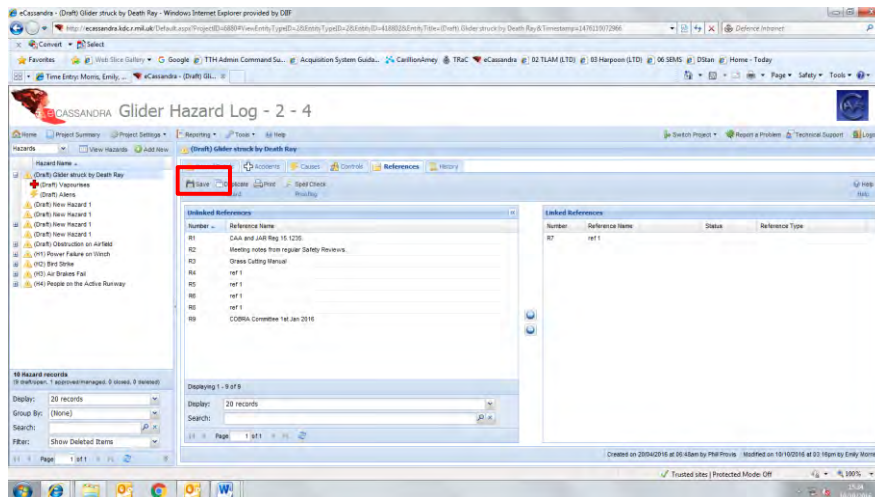

Figure 43

Figure 44

Again make sure to save the Hazard – Reference link by using the save icon (Figure 44). Once successfully saved the Hazard 'node' view will again refresh and the linkage will appear in the Hazard view structure (Figure 45).
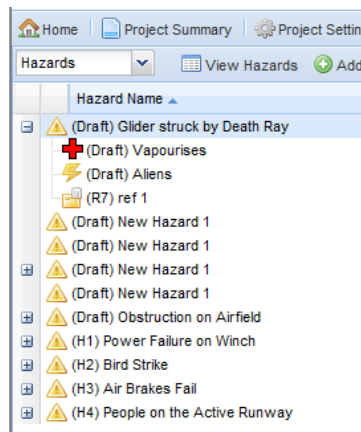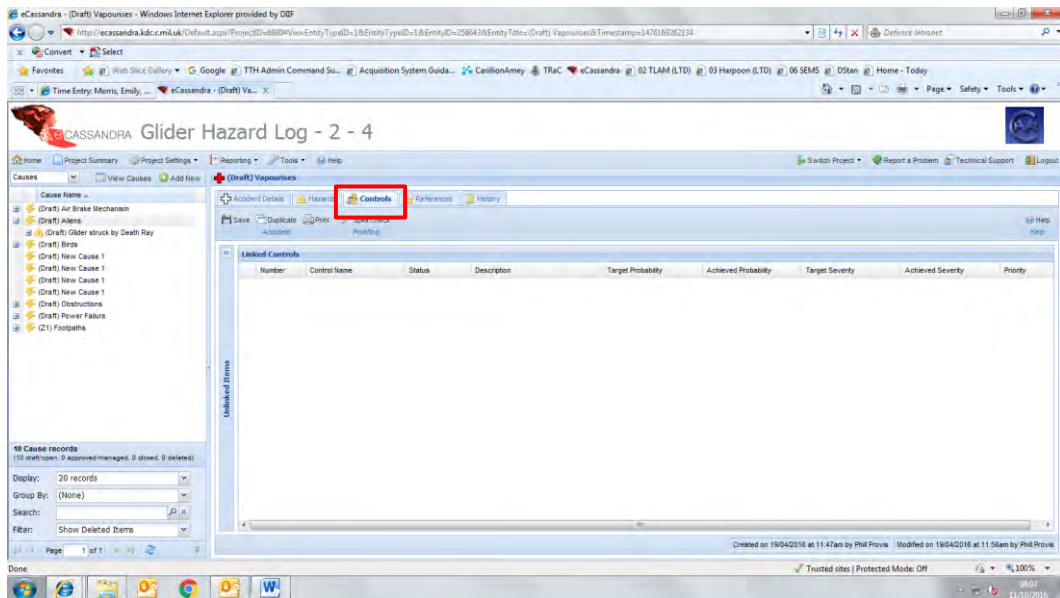

Figure 45

5.4. Cause – Control Links

To create the Cause – Control linkage you need to view the Hazard Log from the Cause 'node'. Once in this view select the Cause you wish to link and then select the Controls tab at the top of the window (Figure 46).

Figure 46

Again you will need to expand the view to show the 'Unlinked Controls' using the double arrow symbol at the top left next to the 'Linked Controls' title. From here you can select the relevant control and using the top button highlighted in Figure 47 and add this to the 'Linked Controls' window, ensuring to save the change using the save icon Figure 48.
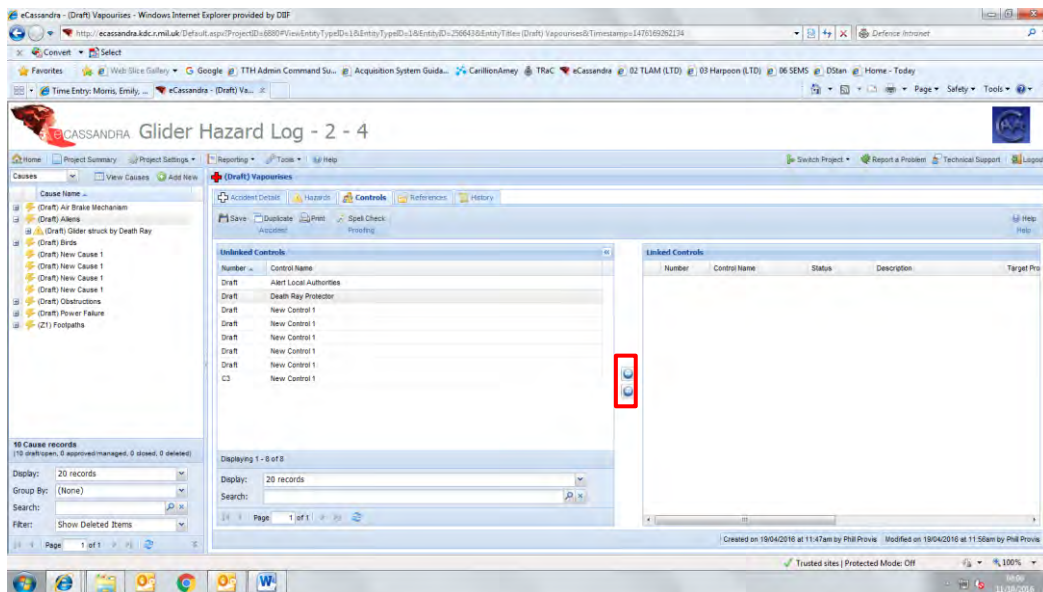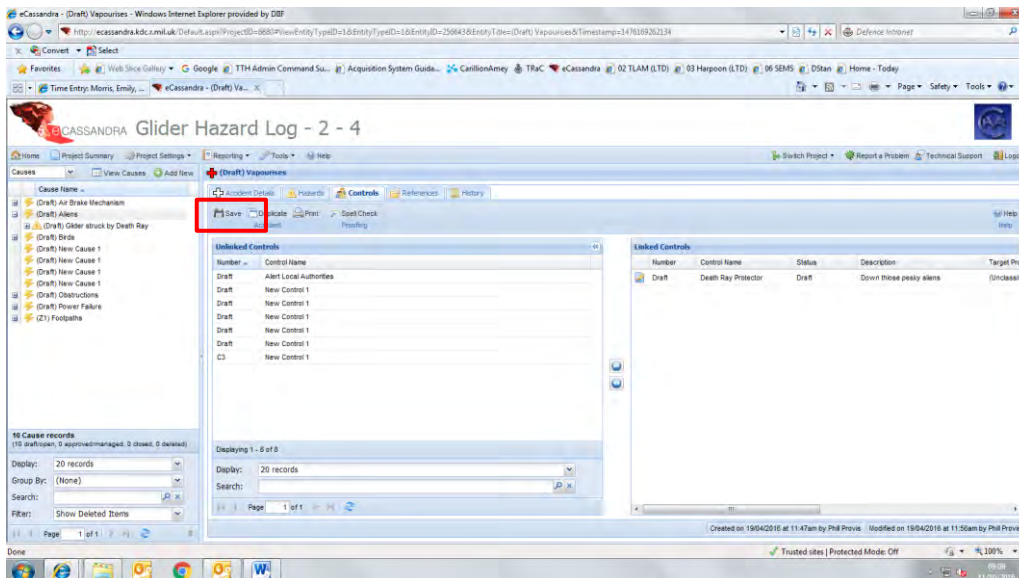

Figure 47

Figure 48

By refreshing the Cause pane you can see that the Cause – Control link has been successfully created.
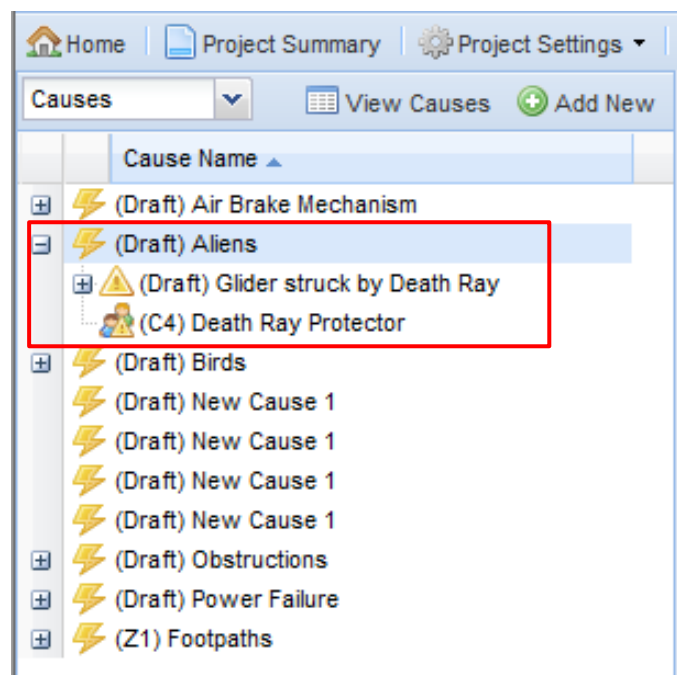

Figure 49

5.5. Accident – Control Links

To link an Accident and Control the process is very similar to that of the Cause – Control linkage. Firstly you will need to view the Hazard Log from the Accident 'node', and then select the Accident that you wish to form the linkage with. From this accident next select the Control 'tab' at the top of the accident central pane (Figure 50).
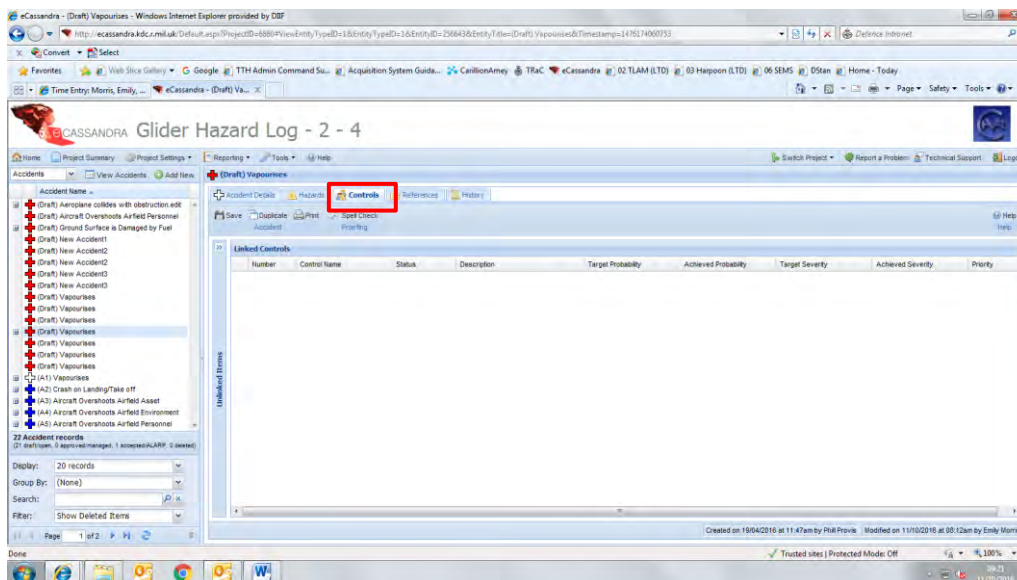

Figure 50

Again you can select the control that you wish to link and add this to the 'Linked Controls' pane with the top central button (Figure 51). Once you have linked all the relevant controls you must save this link by using the save icon.
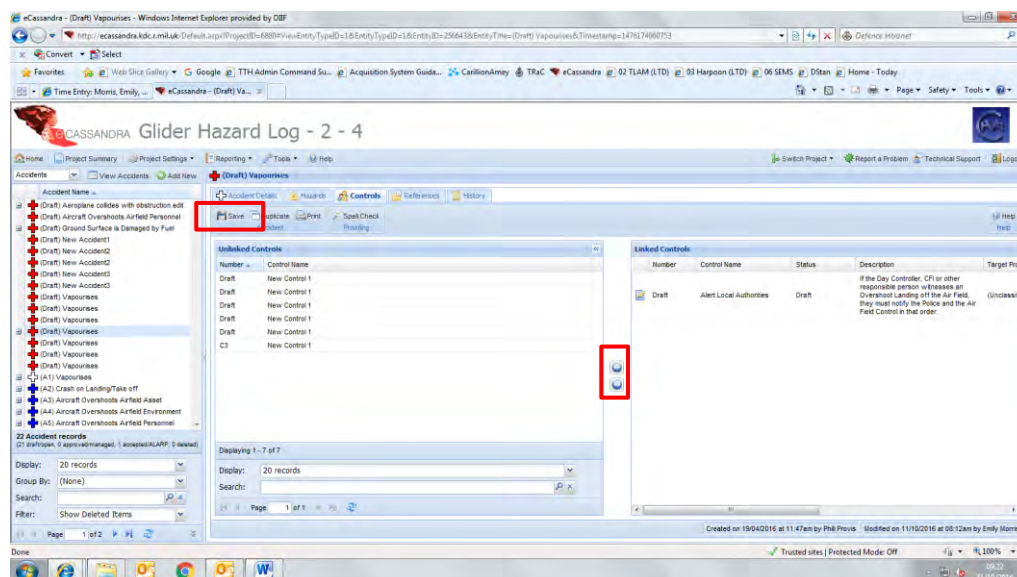

Figure 51

If you now go back to the Hazard 'node' we can view the Hazard with all of its associated linkages.

Figure 52 shows the Hazard that we have just linked successfully.

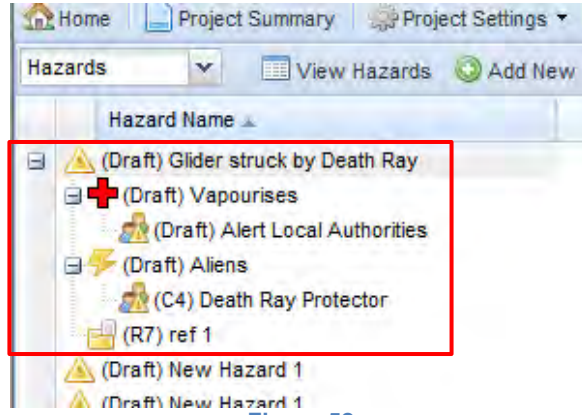Figure 53 shows the structure of the Hazard and its components.
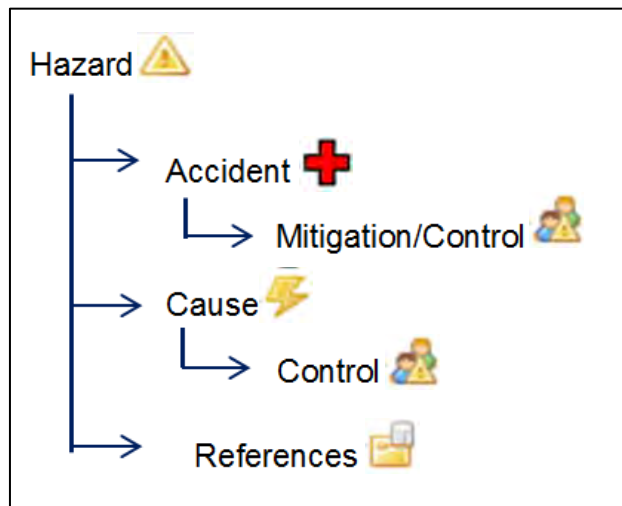

Figure 52

Figure 53