

RockWare Image Linker (RIL)

“Navigating Information Through Pictures”



User Manual

3/8/25

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Introduction

How RIL Works

The *RockWare Image Linker* (RIL) is a software application designed to associate points (called “HotSpots”) on images with other images, files, or URLs. The linked images may have their own HotSpots that can be linked to other images, and so on thereby creating an interactive visual navigation system. The core functionality revolves around creating “Slides” – images that can contain multiple linked HotSpots. Each HotSpot therefore serves as a portal to additional resources.

Key Features

- **Slide-Based Navigation:** Organize and display images in a project, where points added to images can be linked to other images or resources.
- **Point Linking:** Add clickable points (HotSpots) to images, with customizable labels and links to other files.
- **XML-Based Storage:** Project data is stored in structured XML files which may be manually edited.
- **Interactive Features:** Move, edit, and adjust points dynamically.
- **Resource Linking:** Support for linking to various resource types, including other images, documents, or web URLs.
- **HTML Export:** Preserves the interactivity and navigation features of RIL, resulting in a PowerPoint presentation that closely mirrors the look and feel of the original RIL project. This capability provides a tool for making RIL projects available within web sites.
- **PowerPoint Export:** Preserves the interactivity and navigation features of RIL, resulting in a PowerPoint presentation that closely mirrors the look and feel of the original RIL project. This capability takes advantage of the familiarity and ubiquity of PowerPoint.

RIL is ideal for engineers, scientists, educators, web-designers, and other professionals who need to create interactive presentations or manage visual data with embedded links.

Getting Started

System Requirements

RIL runs on any system with Windows10 or higher.

Installation Instructions

Run the RIL_Installation.exe program and follow the on-screen instructions. In addition to adding the program, the installation process will also create a folder titled “Ril_Projects” within the Documents folder. The “RIL Projects” folder will contain a sub-folder titled “Infrastructure” that serves as an example of what can be done with the RIL product.

Viewing the Sample Project

Click on the “Load Demonstration Project” button within the introductory screen (Figure 1) or select the Open option and then select the “Infrastructure” project.



Figure 1

Experiment with moving the mouse cursor over the red HotSpots and notice how the linked images and notes are displayed within the “preview” area located along the right side of the screen (Figure 2).

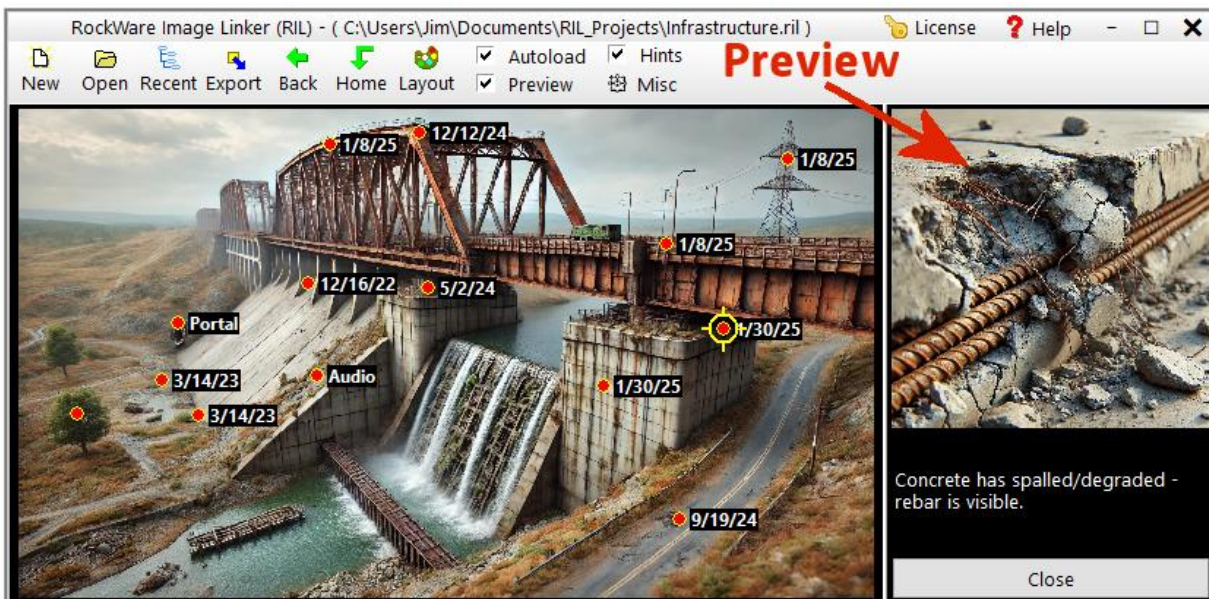


Figure 2

Be sure to click on the “Portal” HotSpot (Figure 3) to see how HotSpots can be successively linked to other images to create a “drill-down” experience.

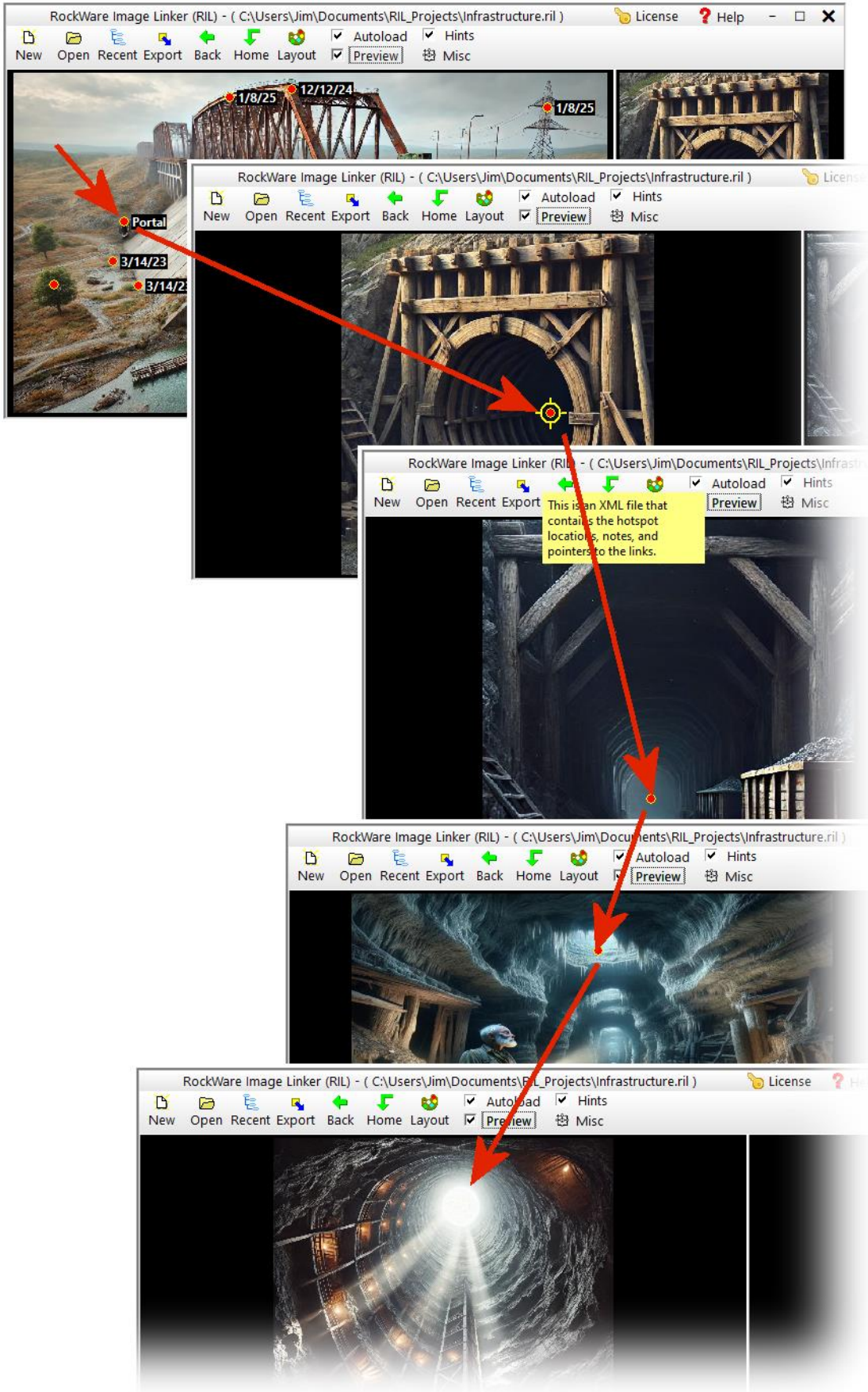


Figure 3

Creating Your First Project

- Step 1. Click the **New** button and enter the name for a new RIL project (Figure 4). This will create a folder with a “.ril” extension and a purple RIL icon.

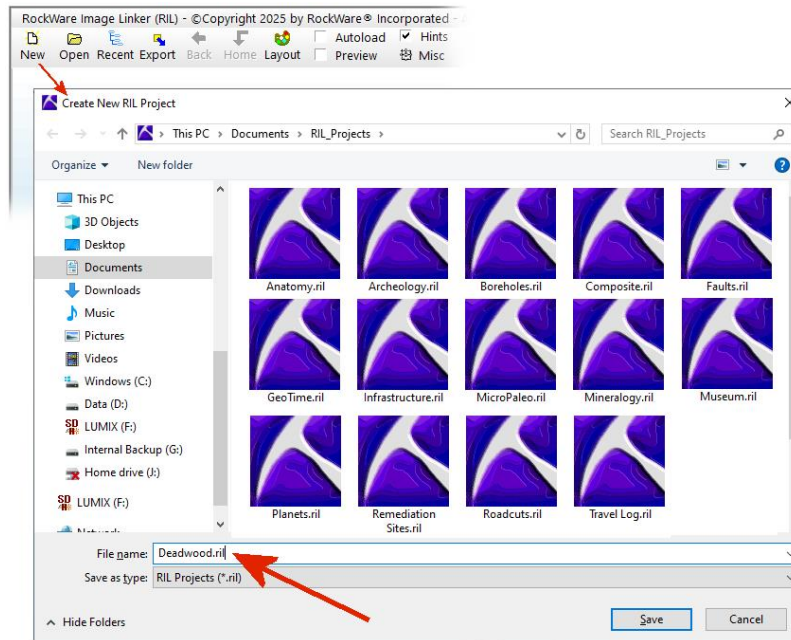


Figure 4

- Step 2. After specifying the name for the new RIL project, you will be prompted to “Select the Initial (“Home”) Image” (Figure 5). This is the image that will be displayed when the project is initially viewed. Note that this file will be automatically copied into the new Project Folder.

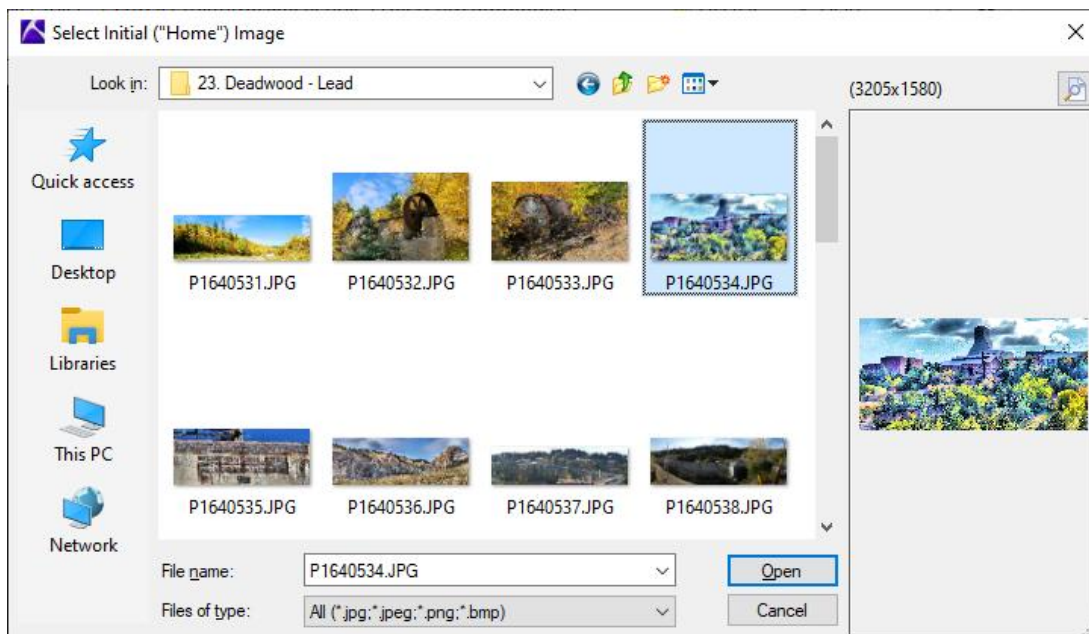


Figure 5

The Home Image will now be displayed within the main RIL screen and the project name will be displayed at the top of the form (Figure 6). You are now ready to start adding HotSpots.

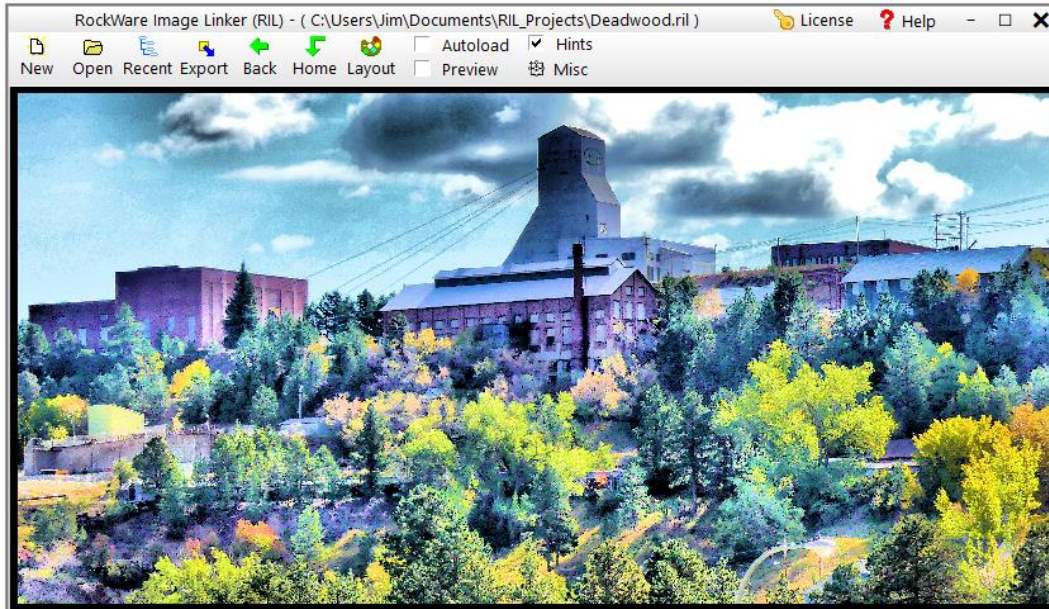


Figure 6

Adding HotSpots

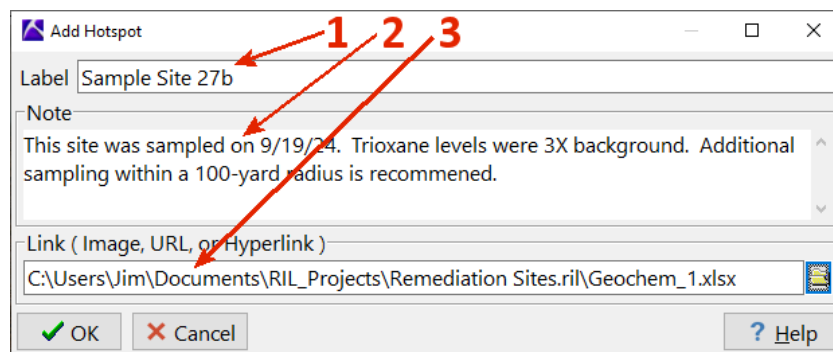


Figure 7

Clicking on a location that is not already occupied by a *HotSpot* (circular symbol) will display the **Add HotSpot** menu (Figure 7). This menu provides a means for defining;

1. The optional HotSpot *Label* (Figure 8). The text that is entered here will be displayed adjacent to the *HotSpot* symbol. If left blank, only the *HotSpot* symbol will be displayed.

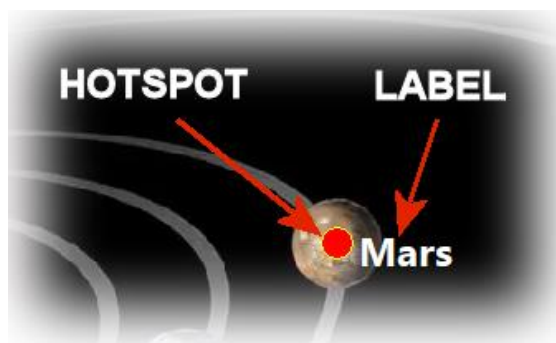


Figure 8

- The *Note* field is used for adding descriptive information that will be displayed when the cursor is passed over the *HotSpot* or when the *HotSpot* is selected.

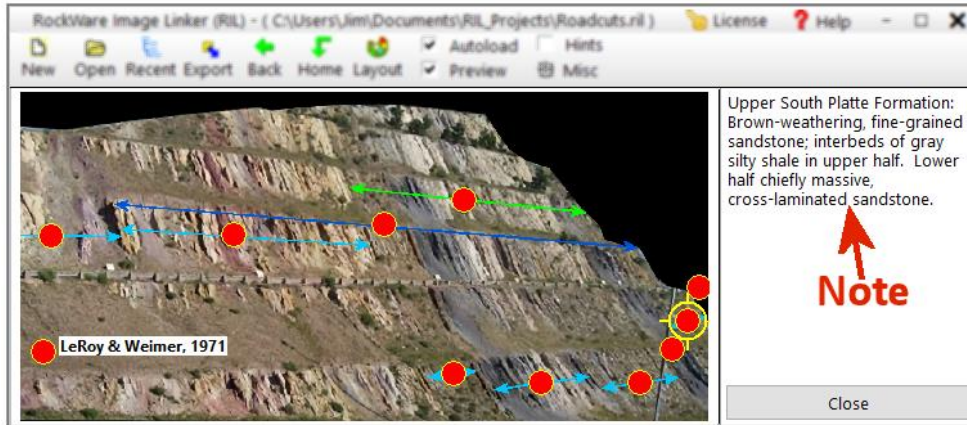


Figure 9

- There are four different types of *Links*;

- Image Link:** The specified image file (bmp, jpeg, jpg, or png) will be copied into the *Project Folder* and clicking on the associated *HotSpot* will display the image (Figure 10). Additional *HotSpots* may be added to the retrieved image for a "drill-down" effect.



Figure 10

- Hyper Link:** Any non-image file that is selected will be copied into the *Project Folder* and clicking on the associated hotspot will load the file into the associated application. For example, if an XLSX file is selected, clicking on the hotspot will load the file into Microsoft Excel (Figure 11). Other examples include PDFs, DOCX (Word), MP4 (video), and WAV (audio).

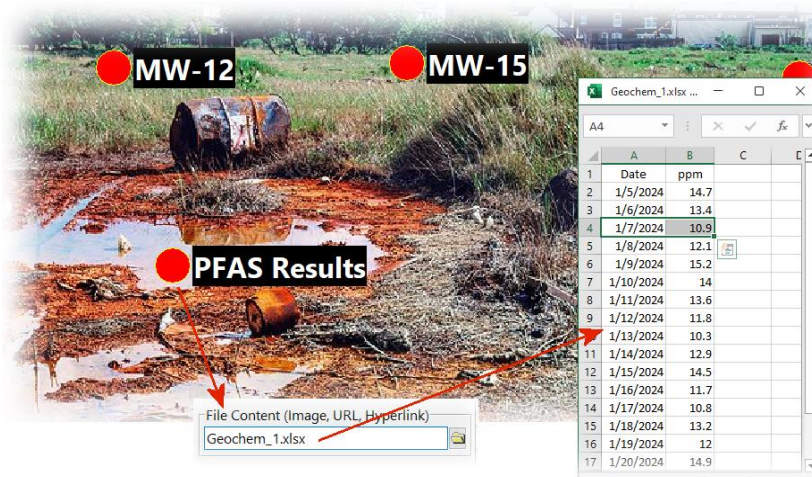


Figure 11

- URL's:** Entering a URL (web link) for the *File Content* will load and display the specified link the default web browser.

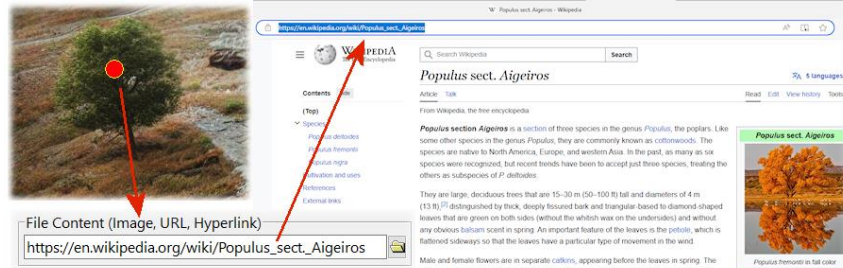


Figure 12

- Other RIL Projects:** Selecting another RIL project file (Index.ril) will copy all of the files within the specified *Project Folder* into the current *Project Folder* and link the *HotSpot* to the first slide within the embedded project. This is a useful tool for compositing multiple projects (Figure 13).

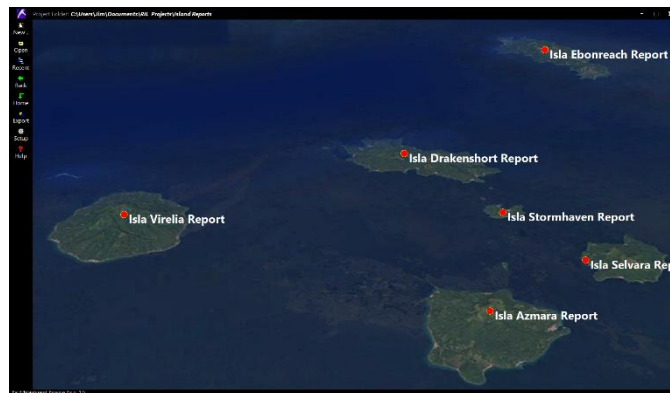


Figure 13

User Interface

The layout of the RIL program is described as follows;

The Project Folder

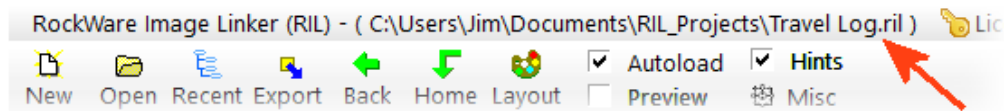


Figure 14

The *Project Folder* that is listed at the top of the main RIL menu (Figure 14) is a Windows directory designated by a ".ril" extension (e.g., "Site1.ril"). This folder contains an XML (eXtensible Markup Language) file titled "Index.xml". This XML file contains instructions that associate locations ("*hotspots*") on images with other images and files. The *Project Folder* also contains copies of all files referenced by the links within the XML file.

The License Button

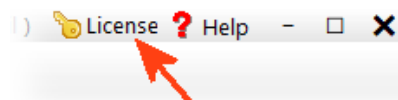


Figure 15

The licensing may be changed by clicking on the *License* button located within the upper-right corner of the main *RIL* menu (Figure 15).

The RIL program can operate in one of three modes;

1. **Trial:** When run in *Trial Mode*, users may create new *RIL* project and add HotSpots for a limited time (two weeks) in order to try out the program before purchasing a license.
2. **Licensed:** When run in *Licensed Mode*, users may create new *RIL* projects and add HotSpots to the images.
3. **Unlicensed:** When run in *Unlicensed Mode*, users may interactively access *RIL* projects without the ability to create or modify them. This means that *HotSpots* may not be added to the images.

The Help Button

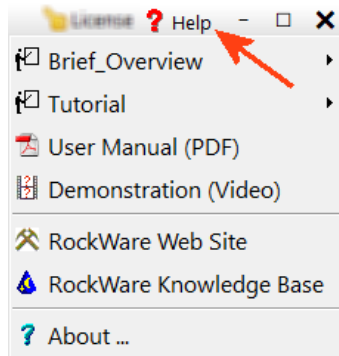


Figure 16

When clicked, the *Help* button, located in upper-right corner of the main *RIL* menu (Figure 16), will present a list of options for viewing PDFs and videos that provide step-by-step instructions, demonstrations, and links to other useful information.

The New Button



Figure 17

The *New* button, located in the upper-left corner of the screen (Figure 17), is used to start a new *RIL* project. Once selected, you will be asked to enter the name for a new *RIL* project. This will create a new folder that will be used to store the main project index file (*Index.xml*). Later on, images or files that are linked (via hotspots) will be automatically copied into this folder.

Once the new project has been specified, you will be asked to select a “home” image. This is the image that will be copied into the project folder and initially displayed when the project is subsequently opened.

The Open Button



Figure 18

The *Open* button, located in the upper-left corner of the screen (Figure 18), is used to open and display an existing *RIL* project.

After the *Open* button has been clicked, a dialog box will appear (Figure 19), prompting you to select a folder that contains a *RIL* project.

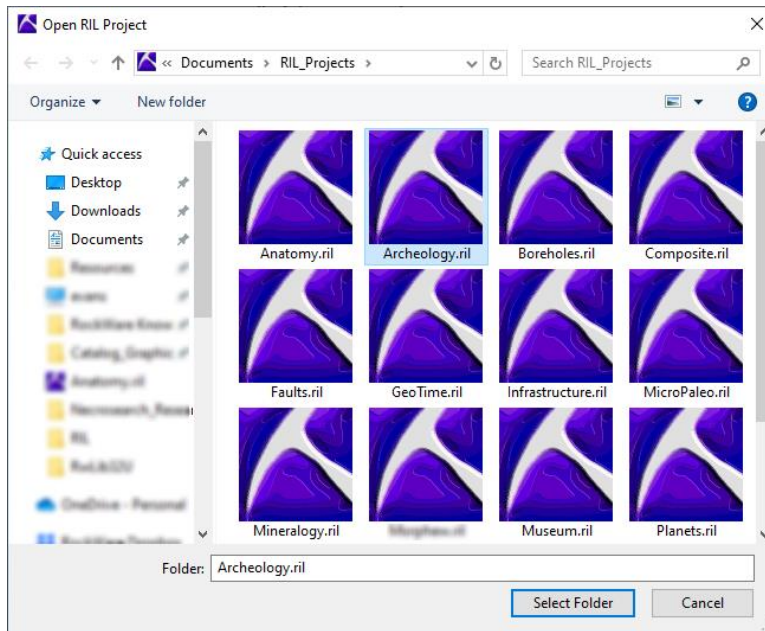


Figure 19

Click on the desired folder and then click on the *Select Folder* button and the program will load the *RIL* project and display the “home” image.

Note: Confusion may arise if you double-click on the folder in which case a “*No items match your search.*” message will appear. Please ignore this and just press the *Select Folder* button.

The Recent Button

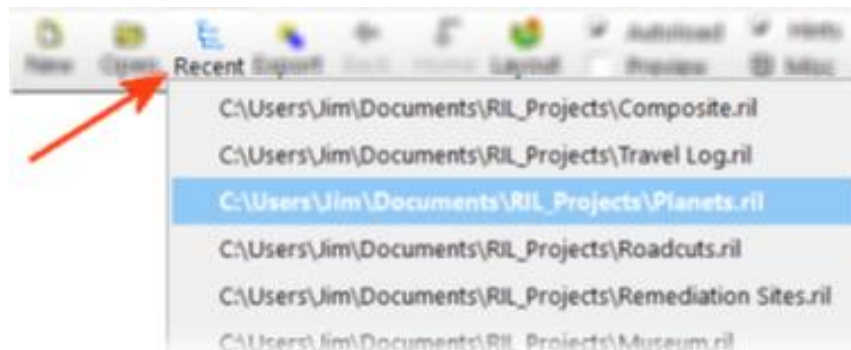


Figure 20

The *RIL* program will keep track of the project folders that you have created and opened. These folders may be quickly re-opened by selecting the *Recent* option located towards the left side of the main menu (Figure 20).

The Export Button

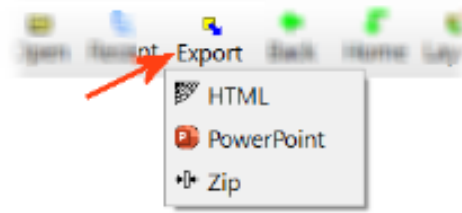


Figure 21

The Export button, located within the main RIL menu (Figure 21), provides tools for converting a RIL project into;

- **HTML:** (HyperText Markup Language) – Suitable for creating web pages.
- **PowerPoint:** Suitable for presentations.
- **Zip:** A compressed format for sharing RIL projects.

The Back Button

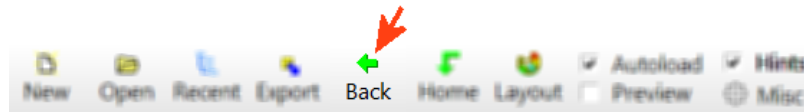


Figure 22

The *Back* button, as shown by a green arrow pointing to the left (Figure 22), is used to display the previously-viewed slide. The spacebar, backspace, and escape keys serve as “shortcuts” to emulate pressing the Back button.

The Home Button

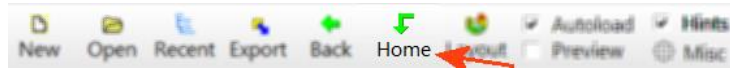


Figure 23

The Home button, located immediately to the right of the Back button (Figure 23) is used to return the viewscreen to the very first (“Home”) slide. The home key on your keyboard serves as a shortcut to emulate pressing the Home button.

The Layout Button

Clicking on the Layout button will display a list of options (Figure 24) that determine the size and colors for the display area, the hotspot symbols, and the hotspot labels.

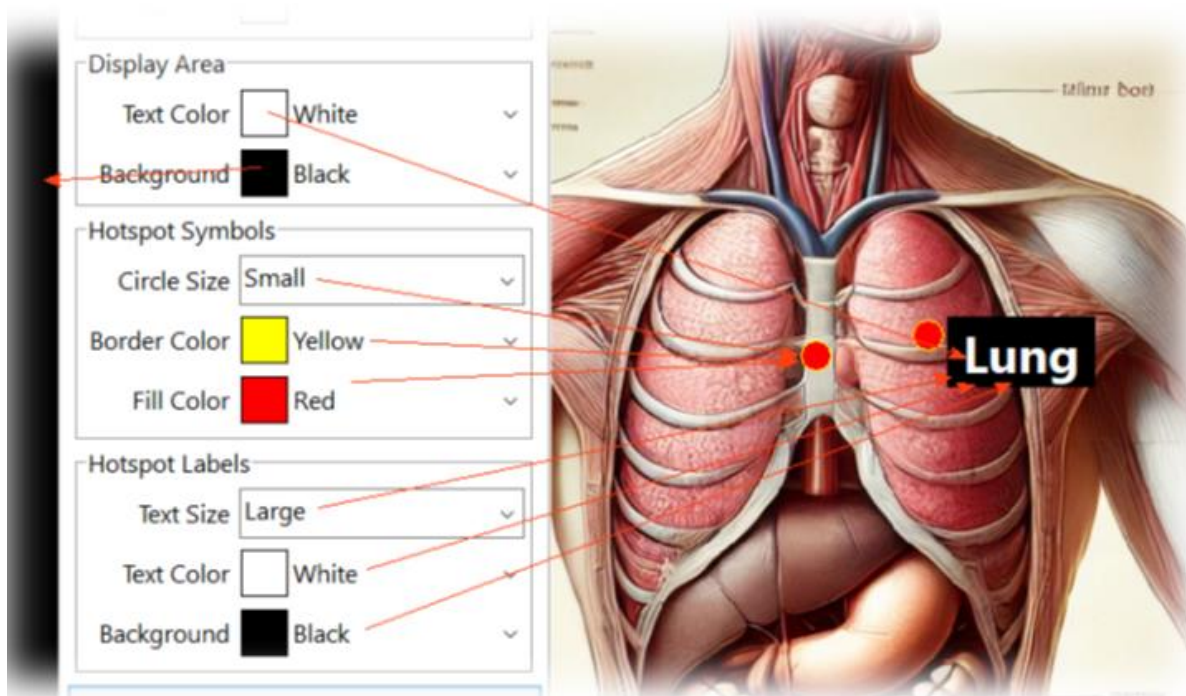


Figure 24

The AutoLoad Option

If enabled (checked), the *AutoLoad* option will cause the program to automatically open the last-used project upon startup.

The Preview Option

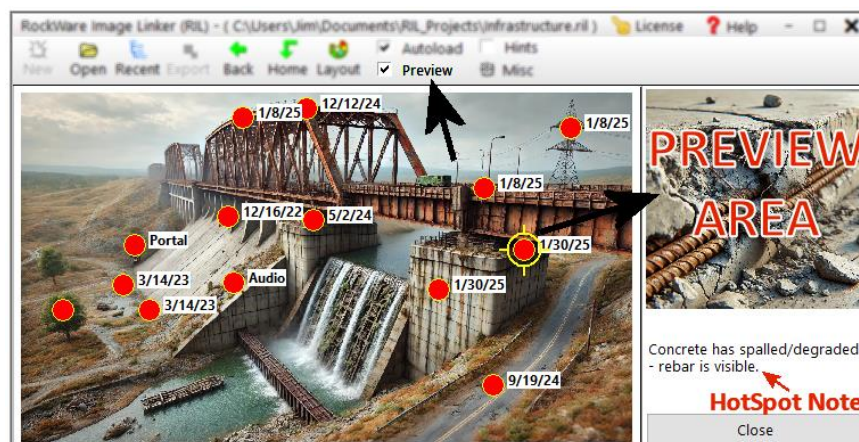


Figure 25

The *Preview* Option (Figure 25) will set aside a portion of the screen to display *HotSpot* information as the cursor is moved over a *HotSpot*.

- If the *HotSpot* links to an image, hovering the cursor over the *Preview* image will display the name of the image file.

- Clicking on the *Preview* image will load the file into whatever program is associated with the image file extension. For example, a “.bmp” file extension might load the image into the Windows Paint program.
- If the HotSpot contains a note, the note will be displayed within the *Preview* area.
- If the HotSpot contains a hyperlink to a non-image file (e.g., URL, xlsx, docx, etc.). A button (Figure 26) will appear that if clicked, will load the associated file into the appropriate program. For example, an XLSX file will be automatically loaded into the Microsoft Excel program. Hovering the cursor over this button will display the name of the hyperlinked file.

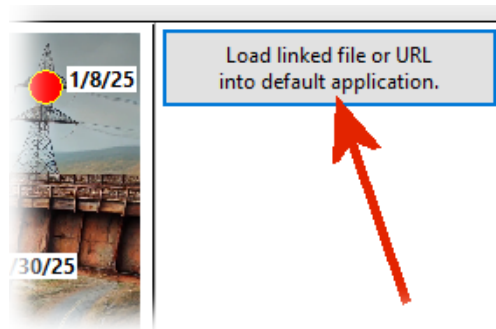


Figure 26

The Hints Option

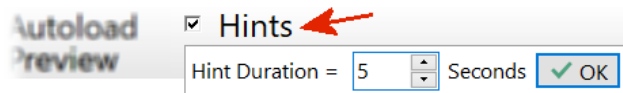


Figure 27

If enabled (checked), the *Hints* option will cause brief descriptions to be displayed adjacent to each menu item. These descriptions will be displayed for the number of seconds that is specified (Figure 28) when the *Hints* option is initially enabled. To change this duration, you will need to disable (uncheck) and re-enable the *Hints* option.

The Misc Button

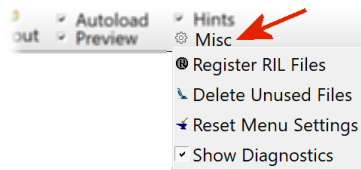


Figure 28

Clicking on the *Misc* button will display additional options (Figure 28) including;

- **Register RIL Files:** Configure Windows such that double-clicking a RIL index file ("Index.ril") will launch the RIL program and automatically load the project. This will also assign the RIL icon to all RIL index files.
- **Delete Unused Files:** Removes unused files within the current *Project Folder*.
- **Reset Menu Settings:** Restores menus settings to their default values.

- **Show Diagnostics:** If enabled (checked), diagnostic information will be displayed along the right side of the screen. This information is useful for trouble-shooting problems with RockWare technical support staff.

Adjusting the RIL Menu Interface

The *Font Size* may be adjusted in 1-unit increments from a 9-point font to a 24-point font (Figure 29). The larger font sizes may seem silly until you consider classroom presentations or geriatric vision limitations.

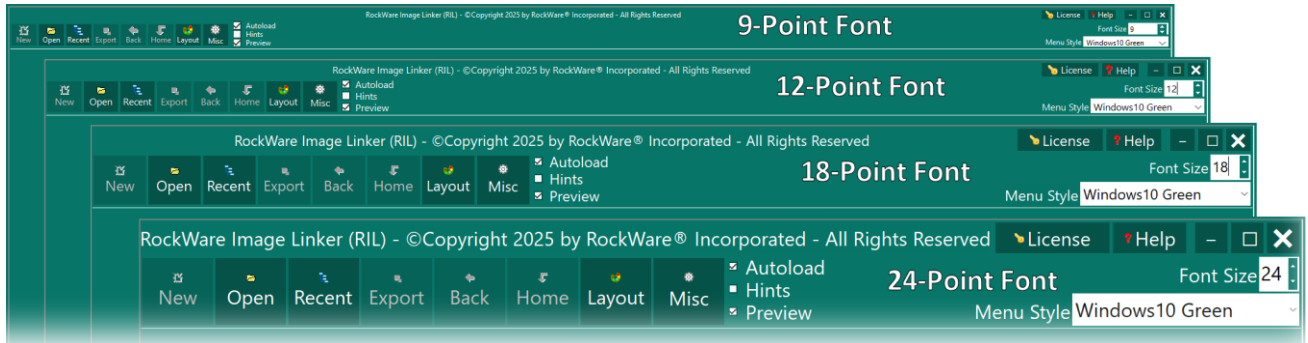


Figure 29

The *Menu Style* option eliminates the possibility of inadvertently selecting colors that render the program unusable (e.g., white text on a white background).

Clicking on the *Menu Style* pull-down will list 37 different Windows color palettes (Figure 30) examples of which are shown within Figure 31.



Figure 30

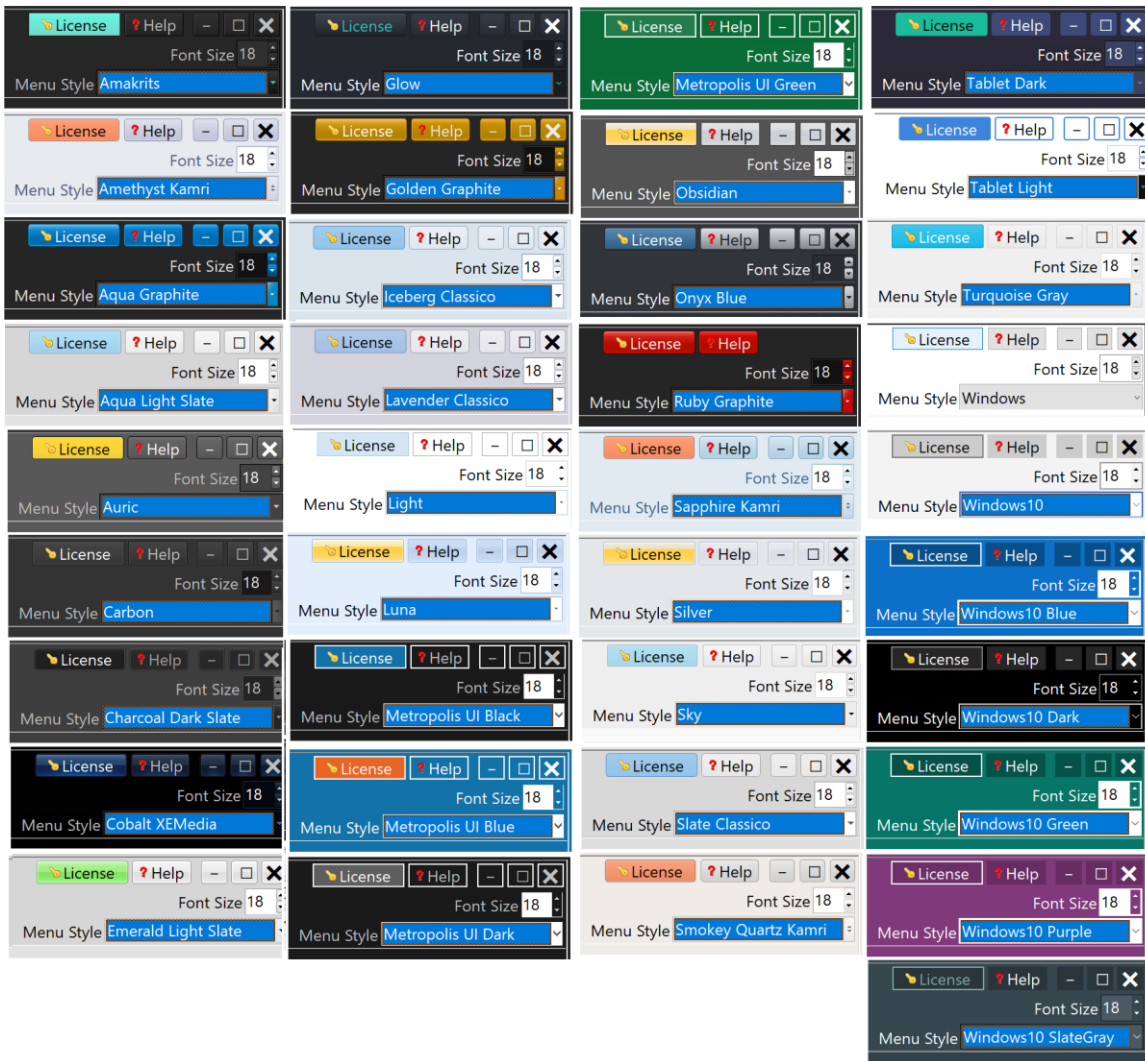


Figure 31

The HotSpot Editing Options

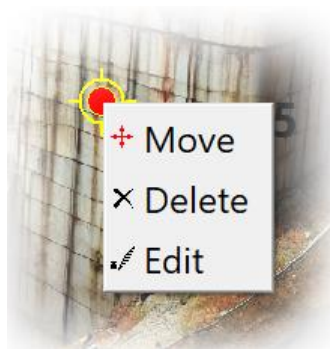


Figure 32

Right-clicking on an existing *HotSpot* will display a popup menu (Figure 32) with three options;

- **Move:** Prompts the user to click on a new location for the *HotSpot*.
- **Delete:** Deletes the current *HotSpot*.
- **Edit:** Opens a dialog allowing the user to modify the *HotSpot* label, notes, and/or file link.

Applications of RIL

- Botanical Inventory
- Botany: Forest to plant parts.
- Cosmetic Surgery Evaluation
- Crime Scene Investigations
- Employee Training
- Geologic Time Charts
- Heritage Tourism
- Home Inspections
- Insurance Inspections
- Insurance Investigations
- Jury Presentations
- MRI & CT Annotation
- Outcrop / Road Cut Virtual Tours
- POGIs
- Timelines

Technical Details (XML File Structure)

The RockWare Image Linker (RIL) XML file is the structured format used to store project data, including images (Pics) and clickable points (HotSpots). All project data is stored in an XML file named Index.xml, which is located in the project's folder.

The XML file consists of two main sections:

<Pics> – Stores all images in the project.

<HotSpots> – Defines interactive points linked to images, external resources, or just containing labels or notes.

Example RIL XML File:

```
<?xml version="1.0" encoding="UTF-8"?>
<Data>
  <Pics>
    <Pic ID="0" File_Name="Infrastructure.png" Caller="-1"/>
    <Pic ID="1" File_Name="High_Voltage.png" Caller="0"/>
    <Pic ID="2" File_Name="Bridge_Support.png" Caller="0"/>
  </Pics>
  <HotSpots>
    <HotSpot Host="0" X="0.899" Y="0.102" Title="1/8/25" Link="1"/>
    <HotSpot Host="0" X="0.477" Y="0.365" Title="5/2/24" Note="This footer is in need of immediate
repair/replacement."/>
  </HotSpots>
</Data>
```

Image Nodes: <Pic>

Each <Pic> node represents an image (or slide) in the project.

Attributes:

ID - A unique identifier for the image (starting at 0 for the home slide).

File_Name - The filename of the image (relative to the project folder).

Caller - The ID of the image that contains the HotSpot linking to this image. Caller="-1" indicates this is the home image.

Example:

```
<Pic ID="2" File_Name="Bridge_Support.png" Caller="0"/>
```

This means "Bridge_Support.png" is linked from the image with ID="0".

Clickable Points: <HotSpot>

Each <HotSpot> node represents an interactive point on an image. It may link to another image, a document, a URL, or simply contain a label or a note.

Attributes:

Host - The ID of the image (Pic) that contains this HotSpot.

X - The horizontal position of the HotSpot (relative, 0.0 to 1.0).

Y - The vertical position of the HotSpot (relative, 0.0 to 1.0).

Title - The label displayed for the HotSpot (optional).

Link - The destination the HotSpot navigates to when clicked (optional).

Note - A description or annotation (optional).

Example of a HotSpot that links to an image:

```
<HotSpot Host="0" X="0.477" Y="0.365" Title="5/2/24" Link="2"/>
```

This HotSpot is on image ID="0" (Infrastructure.png).

When clicked, it navigates to ID="2" (Bridge_Support.png).

The HotSpot appears at (47.7% from the left, 36.5% from the top).

Example of a HotSpot with a note but no link:

```
<HotSpot Host="0" X="0.680" Y="0.573" Title="1/30/25" Note="GPR survey indicates a large void in the column, suggesting faulty construction."/>
```

This HotSpot includes a detailed note but does **not** link to another image.

Example of a HotSpot linking to an external URL:

```
<HotSpot Host="0" X="0.068" Y="0.623" Link="https://en.wikipedia.org/wiki/Populus_sect._Aigeiros"/>
```

Clicking this HotSpot on image ID="0" opens the Wikipedia page in a web browser.

Example of a HotSpot with an audio file link:

```
<HotSpot Host="0" X="0.348" Y="0.543" Title="Audio" Link="Concrete_Damage_Below_Gravel.wav"/>
```

Clicking this HotSpot plays the associated audio file.

Summary

- Index.xml stores all project data.
- <Pics> contains images (with unique IDs).
- <HotSpots> defines clickable points (linking images, files, or URLs) but may also exist without a Link (for labels or notes only).
- The XML format is structured, editable, and portable.