GUARDIAN

THE PURSUIT OF THE PERFECT LIBRARY

How Guardian partnered with RATIO design and AVAIL to clean up RATIO's family library.

AT A GLANCE

CHALLENGES

- Imperfect Content
- Inconsistent Standards
- Graphically Inconsistent Models

RESULTS

- Cleaned Content Library
- Consistent Standards
- Mapping Configuration File
- New Container File

"Getting our current content updated to the current standards makes it easier to find content, as well as maintain and add content with the Guardian mappings."

TOM KEMP
RATIO Design

BACKGROUND

It started during a conversation between the Guardian and AVAIL teams about how firms to hold back their content simply because it isn't perfect. The teams set out to demonstrate how Guardian can help firms make quick and significant improvements to their content for their design teams to immediately utilize.

THE CHALLENGE

RATIO's Revit library on AVAIL consisted of 3,741 loadable families and 291 standard details that were developed over the years to various graphical and Revit standards. RATIO Design had a current, well-defined set of graphical and Revit standards, but not all of their Revit families were developed to those current standards. Each time Revit connect was loaded from AVAIL into a project, there models were being contaminated with these outdated standards.

The how was easy: Guardian's Project Properties can process Revit families and their inherent properties, aligning them with a firm's graphic and Revit standards.

THE RESULTS

Time Savings for Cleaning Content
Cleaning RATIO's Revit family library took approximately 40 hours for 8,000 families.

Consistent Standards
The cleaned content was now aligned with RATIO's graphical and Revit standards.

Mapping Configuration File
All projects moving forward benefit from the automatic cleaning of imported content in real-time.

New Container File
There is a single container file with all of their content that adheres to their graphical and Revit standards.

See Guardian in Action

The Pursuit of the Perfect Library
The process and aftermath of cleaning up RATIO's Revit family library

BACKGROUND

It started during a conversation between the Guardian and AVAIL teams about how firms tend to hold back their content simply because it isn't perfect. The two teams set out to demonstrate how Guardian can help firms make quick and significant improvements to their content for their design teams to immediately utilize. The how was easy: Guardian's Project Properties can process Revit families and their inherent properties, aligning them with a firm's graphic and Revit standards. All they needed was a content library large enough to reveal just how effective the tool is.

Being a customer of both AVAIL and Guardian, RATIO Design was the perfect choice. They were gracious enough to lend their entire Revit family library to develop a robust process for perfecting a firm's library. This case study documents the process and aftermath of cleaning up RATIO's Revit family library.

THE STANDARDS

A critical step in the processes of a firm's Revit content is understanding a firm's graphical and Revit standards. From line patterns, line styles, filled regions, text styles, and dimension styles to shared parameters and subcategories, these properties are foundational to a firm's ability to generate high-quality and consistent design documents. RATIO already had a well-defined setup of graphical and Revit standards, which was beneficial to the process. However, not all their Revit families were developed to those standards, and some even created additional standards that needed to be incorporated.

Throughout Guardian's process of cleaning a firm's Revit family library, standards are set. More importantly, any foreign graphical or Revit standards are identified and converted to the firm's standards. These conversions are captured within Guardian's Mapping Configuration file, which ensures all projects moving forward automatically convert these identified foreign standards to the firm's standards.

> **Objective**
> Provide RATIO with a cleaned Revit Family library that is well-structured, easily accessible, and aligned with industry standards and RATIO's graphical standards.

The Pursuit of the Perfect Library

THE PROCESS

To clean RATIO's Revit family, a robust process was developed and executed.

Discovery of Standards:

RATIO made this project very easy, since a well-defined set of foundational graphical and Revit standards were already encapsulated in their Revit template. However, as previously mentioned, these standards were only the known standards and not the standards embedded in many of their Revit families. The entire process of cleaning RATIO's library required going through the process of cleaning RATIO's families before the standards could be finalized.

Cleaning of RATIO's AVAIL Library:

The Revit families RATIO provided to their employees through AVAIL were RATIO vetted and approved libraries. Utilizing RATIO's Revit template with Guardian turned on, these 3,741 families were simply dragged and dropped into the Revit project. Guardian Project Properties identified all the incoming graphical and Revit Properties which were either mapped (converted properties) to the RATIO standards or flagged for further review with RATIO. This also included the 291 standard details RATIO provided to its design teams so their Revit system families, such as text and dimension styles, could be identified and mapped. This also provided the opportunity to train Guardian in RATIO's Detail Items and Annotation families to prevent the dreaded "+1" added to the family name when loaded into the project.

Standards Foundation:

After processing all the RATIO-approved Revit families and standard details, there was a clear understanding of all RATIO's graphical and Revit standards. Understanding these foundational standards was critical for the next steps when all of RATIO's Revit families were processed through Guardian's Project Properties. For RATIO, this was all more important as a few years prior, they went through a standards conversion, and many of these families were built under those previous standards. The standards included:

1. Materials
2. Line Patterns & Styles
3. Fill Patterns & Filled Regions
4. Object Styles/Subcategories
5. Loadable & System Families

User's and Manufacturer's Libraries:

It is well known that even when firms provide a perfect library to their design teams, individuals will bring their own families into a Revit project. Now that RATIO's foundational standards were determined, RATIO provided a few of their power users' "secret" stashes of families and their interior's stash of manufacturer's families. These Revit families, totaling 4,470, were added to the Revit project to identify their foreign graphical and Revit standards and map them to RATIO's standards. By processing these families, these foreign standards were captured in the Mapping Configuration file to ensure that each time a project used these families going forward, they were cleaned to RATIO's standards.

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THE DELIVERABLES

Part of the process was determining what to deliver, and how to turn over these massive amounts of Revit families and other content.
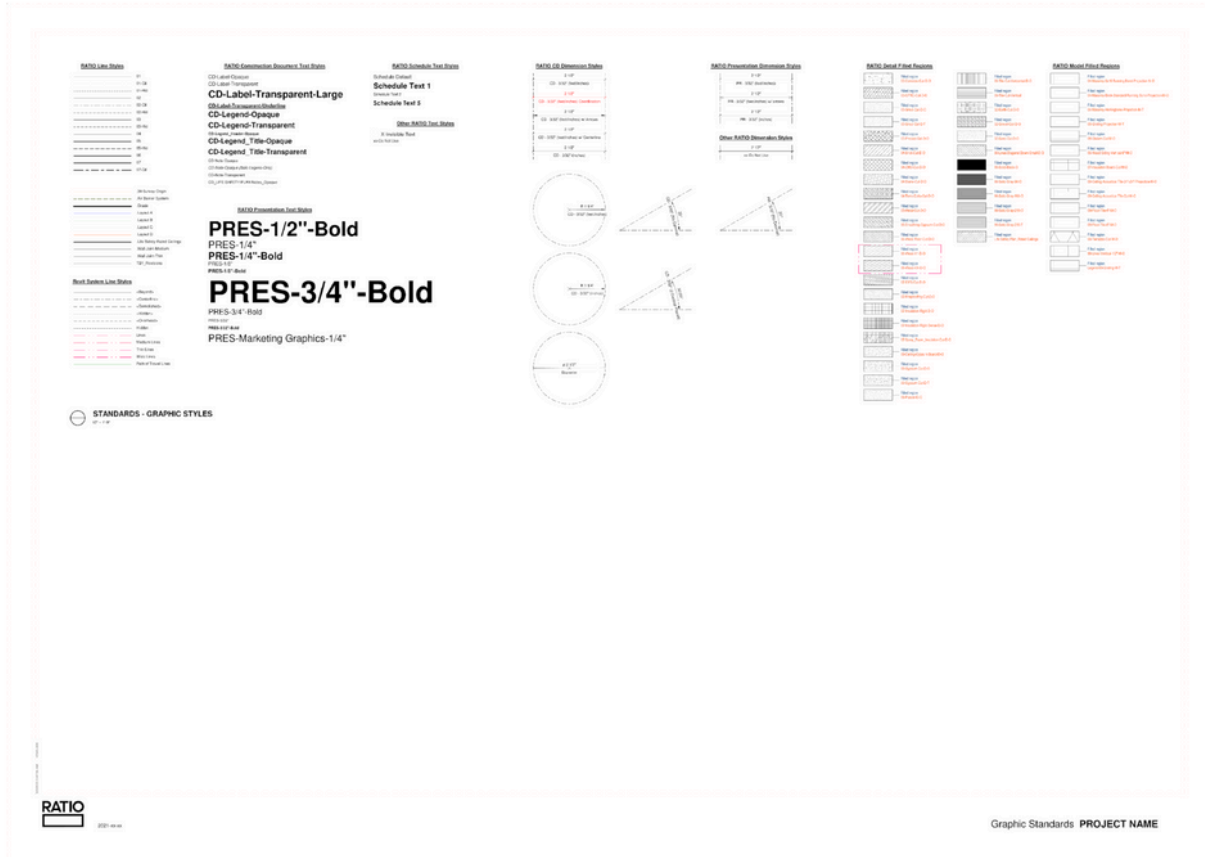
The Revit Families
Since BIM360 was used for the project, allowing all parties involved to have active access to the Revit project and families, all 8,211 loadable families were loaded into appropriate folders within BIM360 for RATIO to download at their convenience.

The Container
Since a single Revit project was used to process all RATIO families and standard details, the Revit project file became a container file with all their content. To ensure their graphical and Revit standards were fully maintained, their AVAIL families and standard details were delivered in one container file while their user's and manufacturer's families were in another container.

Properties Dashboard
A critical part of adopting a set of standards for any firm is communicating these standards to all design teams. To help facilitate this process, Guardian developed a properties dashboard within the RATIO container file that demonstrated all of RATIO's graphical and Revit Standards. See image below.

See Guardian in Action

The Pursuit of the Perfect Library

The Mapping Configuration File
While providing a firm with their full Revit family library cleaned to their standards makes an obvious impact, the Mapping Configuration file is the real value. The Mapping Configuration file ensures all future projects benefit from the automated alignment to the firm's standards. Guardian was able to add the Mapping Configuration file directly to RATIO's Guardian settings.

Power BI Dashboard of the Results
An important aspect of any such undertaking is understanding the value of the effort and informing decision-makers of that value. To assist in that process, Guardian provided RATIO with a PowerBI dashboard demonstrating the data and value of the effort. The process of cleaning RATIO's Revit family library resulted in some significant heavy lifting:

The Content:	**The Standards Improved:**
Approved RATIO families	Materials
• 3,741	• 719 mapped / 2,833 removed
User and manufacturer families	Fill Patterns / Filled Regions
• 4,470	• 572 mapped / 263 removed
Detail Items / Family Types	Line Patterns / Line Styles
• 614 / 744	• 244 mapped / 1,912 removed
Drafting Views	Object Styles / Subcategories
• 291	• 1,023 mapped / 624 removed
Total improved elements	Text Styles & dimension Styles
• 56,707	• 28
	CAD Imports / Layers
	• 1,513

VALUE TO THE CLIENT

The value of this effort to RATIO was multifaceted. Cleaning RATIO's Revit family library by the Guardian and RATIO teams took approximately 40 hours for the approximately 8,000 families. For most firms, 40 hours dedicated to a cleanup effort, when combined with typical day-to-day BIM support and project responsibilities, is just out of the range of what can realistically be completed in-house. Often, these types of efforts end up taking nearly two to three times as long, spanning many months.

Additionally, cleaning the approximately 8,000 families and 300 drafting views provided project teams with content that was aligned with RATIO's graphical and Revit standards. This significantly reduced the time teams needed to spend editing views and View Templates, as families now responded to these edits as intended. In short, the quality of the documentation was increased with less effort.

The mapping configuration file provided the most long-term value to RATIO. As the mapping configuration file captured every conversion of foreign properties to RATIO standards, all projects moving forward benefited from the automatic cleaning of imported content in real-time. This was especially critical for teams who revisited past projects that may not have had the current standards.

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