AIA25

AI: The Game Changer in Specification Management

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Learning Units: 0.5

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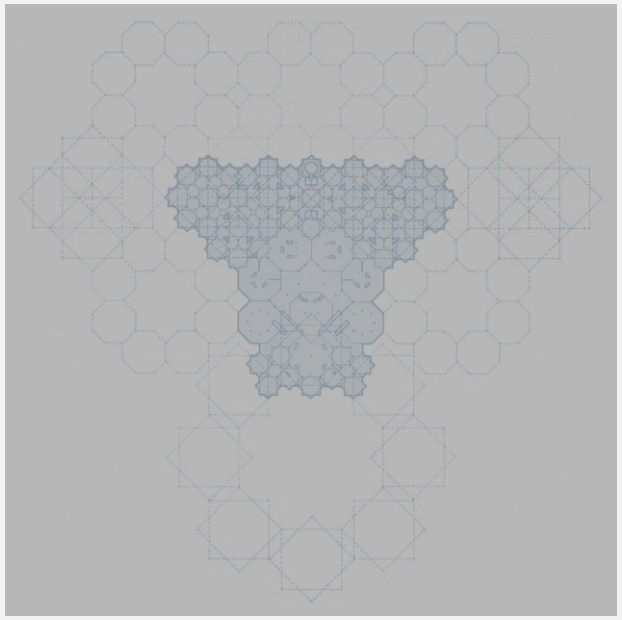

Chris Metropulos
AIA, LEED, Sr. Product Director – Deltek

Learning Objectives

- Explore common AI technologies and concepts to build a foundational understanding of their relevance in managing construction specifications.
- Discuss key data types crucial to construction specifications, and learn how AI applications enhance efficiency and accuracy in handling this data.
- Examine AI's role as a co-pilot in accelerating information delivery and automating tasks to improve efficiency.
- Gain insights into practical AI use cases that optimize specification development, increasing both accuracy and efficiency in project workflows.

What is AI?

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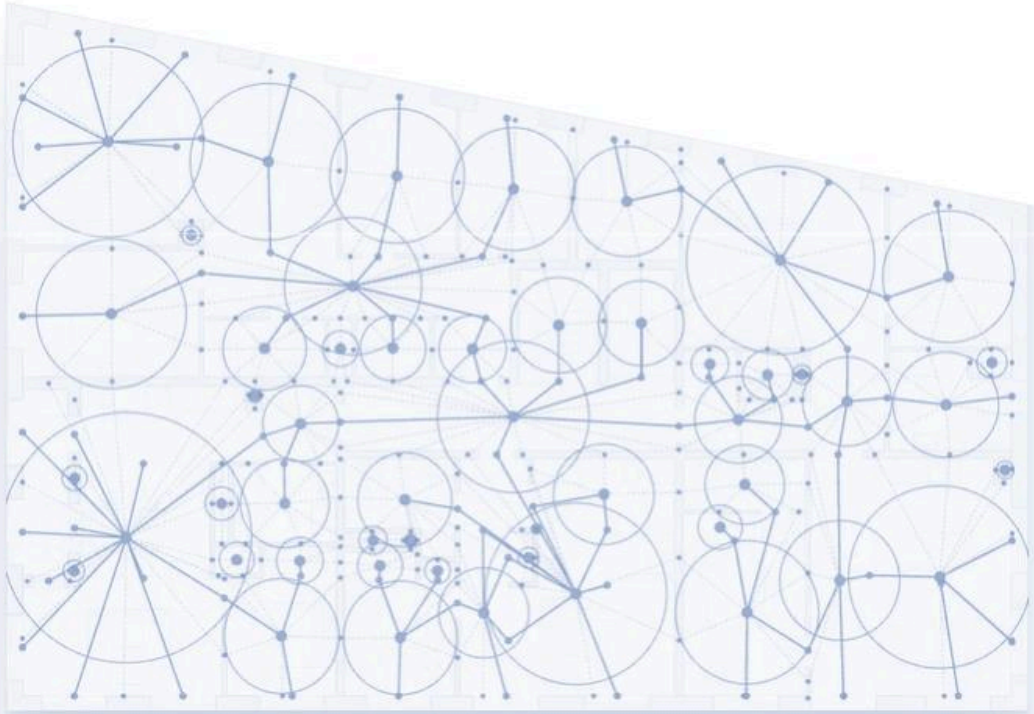
Key Terms

Machine Learning (ML)

A subset of AI that involves training algorithms to make predictions or decisions based on data.

Natural Language Processing (NLP)

A field of AI that focuses on enabling computers to understand, interpret, and generate human language.



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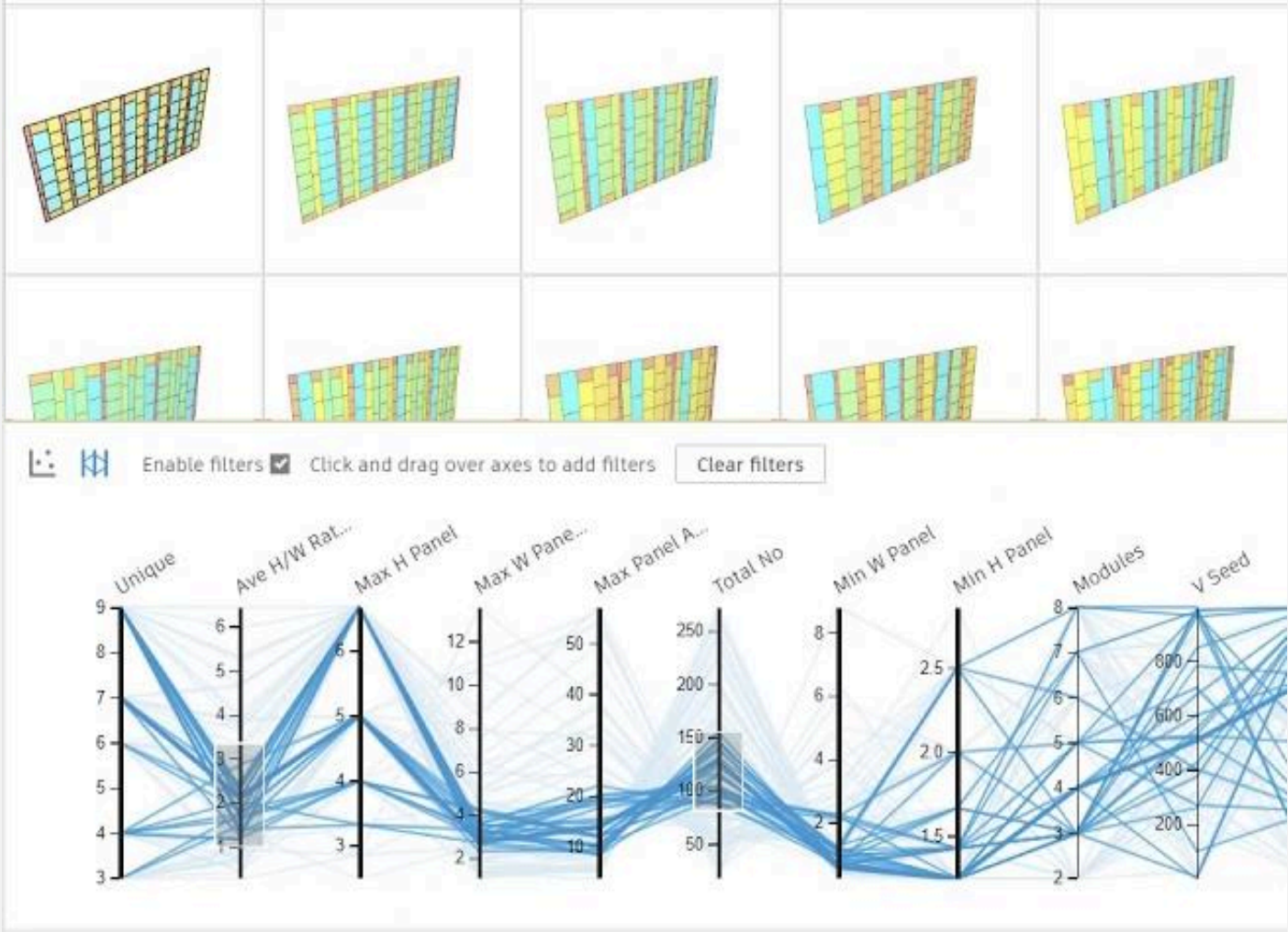
Generative Design

Tools intended to augment the design process by allowing design professionals to efficiently make more informed decisions based on data.

Tools achieve this by translating user-defined criteria into feasible design possibilities quickly using algorithms.



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AR/VR

Augmented Reality (AR) is technology that superimposes computer generated images into a view of the real world to create authentic visualizations of proposed designs.

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AR/VR

Virtual Reality (VR) is technology that creates a simulated environment that can be interacted with to inspire faster collaboration and make context specific decisions.

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Predictive Analytics

Presents real-time alerts or insights during design iterations to provide focus areas and impact of decisions.

Tools combine historical data and algorithms to predict outcomes without being programmed to do so.

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AI Assisting Challenges with Specification Processes

Time-Consuming

Researching products, complying with standards, and coordinating with drawings.

Inconsistent with Toolsets

Project Teams and their consultants frequently use different tools that often require manual processing and creates data siloes.

Approaches & Workflows

Lack of standardized workflows which limits efficiency and consistency across teams.

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AI Assisting Challenges with Specification Processes

Team Collaboration

Lack of tools, efficient workflows, and indifference leads to communication breakdowns and rework.

Product Research

Keeping up with the latest products, data, and sustainability criteria is overwhelming.

Little to No Data

Underutilization of technology that can organize and extract meaningful data.

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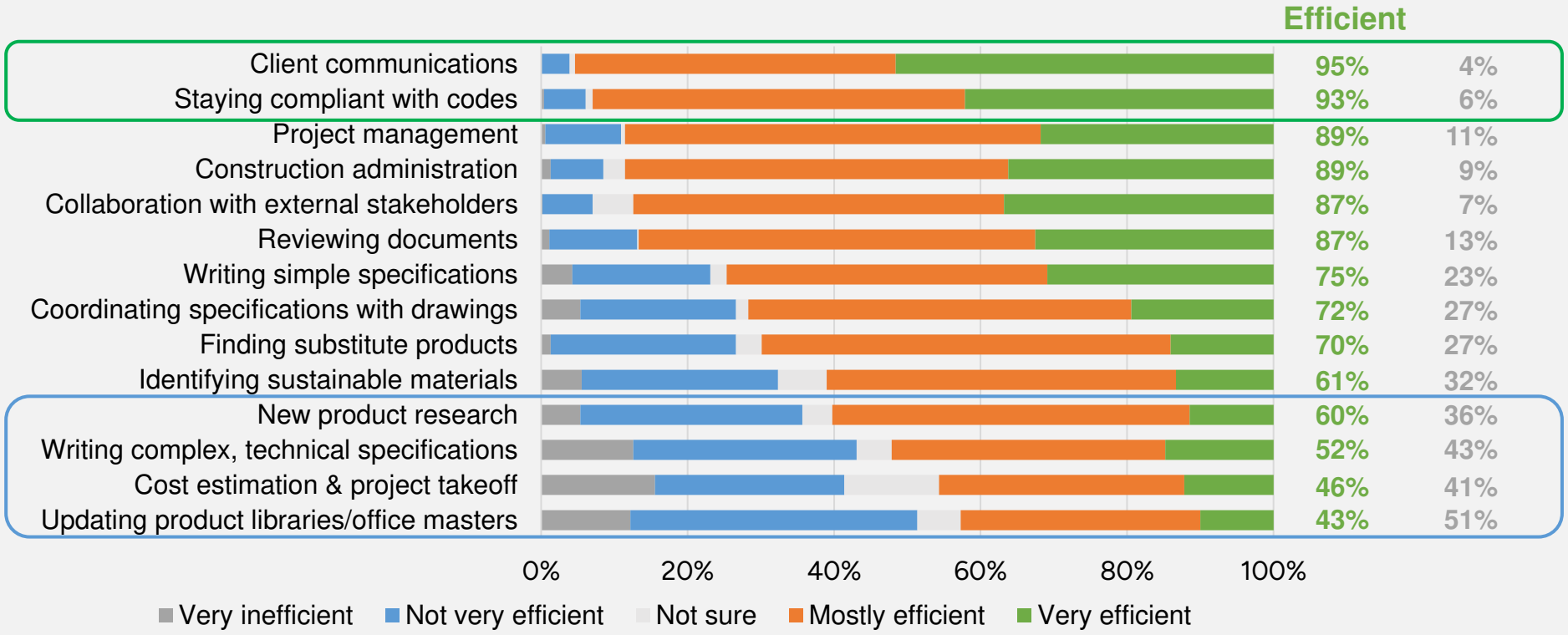
The AI Opportunity

Based on the 2025 AIA Journey to the Specification Study



Key Data Points AI Can Leverage

References Cross-references to sections, assemblies, systems, and product types.

Codes and Standards ASTM, ANSI, UL, etc.

Product Types Material properties, performance criteria, and approved products.

Key Data Points AI Can Leverage

Administrative Requirements Submittals, Quality Assurances, Warranty Details, etc.

Installation Requirements Methods and tolerances for product types or accessories.

Schedules Schedules for complex assemblies or systems.

The Impact of Content Consistency

- **ACTION SUBMITTALS**
  - Product Data: For each type of product.
    - Include manufacturer's written data on physical characteristics, durability, and fade resistance.
    - Include manufacturer's written installation recommendations for each type of substrate.
  - LEED Submittlas: Refer to Section 013415.13 - LEED Sustainable Design Requirements.
  - Environmental Product Declaration (EPD): Provide current certification for CPT-1.
  - Product Data: For adhesives and carpet products indicating VOC content compliant with California Department of Public Health's "Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers.".
  - Samples for Verification: For each of the following products and for each color and texture required. Label each Sample with manufacturer's name, material description, color, pattern, and designation indicated on Drawings and in schedules.
    - Carpet: 19.6 inch square Sample.
    - Exposed Edge, Transition, and Other Accessory Stripping: 12 inch long Samples.
    - Carpet Seam: 6 inch Sample.

The Impact of Content Consistency

- **Glass-Fiber, Preformed Pipe**: Glass fibers bonded with a thermosetting resin; suitable for maximum use temperature up to 850 deg F (454 deg C) in accordance with ASTM C411. Comply with ASTM C547.
  - Manufacturers: Subject to compliance with requirements, provide products by one of the following:
    - Johns Manville; a Berkshire Hathaway company.
    - Knauf Insulation.
    - Manson Insulation Inc.
    - Owens Corning.
    - <**Insert manufacturer's name**>.
  - Preformed Pipe Insulation: Type I, Grade A[**, unfaced**][**with factory-applied ASJ**][**with factory-applied ASJ-SSL**][**with factory-applied ASJ+ jacket**][**with factory-applied PSK jacket**].
  - Fabricated shapes in accordance with ASTM C450 and ASTM C585.
  - Factory-applied jacket requirements are specified in "Factory-Applied Jackets" Article.

- **INSTALLATION OF GLASS-FIBER AND MINERAL WOOL INSULATION**
  - Insulation Installation on Straight Pipes and Tubes:
  - Secure each layer of preformed pipe insulation to pipe with wire or bands, and tighten bands without deforming insulation materials.
  - Where vapor barriers are indicated, seal longitudinal seams, end joints, and protrusions with vapor-barrier mastic and joint sealant.
  - For insulation with jackets on above-ambient surfaces, secure laps with outward-clinched staples at 6 inches (150 mm) o.c.
  - For insulation with jackets on below-ambient surfaces, do not staple longitudinal tabs. Instead, secure tabs with additional adhesive, as recommended by insulation material manufacturer, and seal with vapor-barrier mastic and flashing sealant.

The Impact of Content Consistency

- **CARPET TILE**
  - Carpet Tile (CPT-1):
    - Basis of Design: Provide Straight Edge by Interface, LLC. or accepted equal:
      - Color: 102860 Base with 2 color changes.
      - Fiber Content: 100 percent nylon 6, solution dyed.
      - Construction: Tufted, Texture Loop.
      - Pile Thickness: 0.095 inches for finished carpet tile according to ASTM D 6859.
    - Primary Backing: GlasBac, manufacturers standard biobased, PVC-free backing.
    - Size: 19.7 inches by 19.7 inches
    - Appearance Retention Rating: Heavy traffic, 3.0 minimum according to ASTM D 7330.
    - Dry Breaking Strength: Not less than 100 lbf according to ASTM D 2646.
    - Delamination: Not less than 3.5 lbf/in. according to ASTM D 3936.

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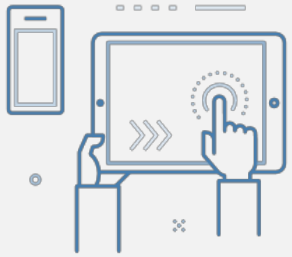
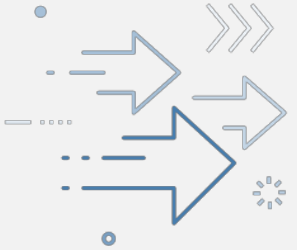
Results & Benefits

Automation of Best Practices and coordination.

Reports, extracting key data from administrative areas of a specification.



A structured **Product Library**, which enables collaboration and streamlines research.



AI, a copilot that can assist any type of professional eliminate monotonous tasks.

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AI Copilots, Prompting for Successful Outcomes

Always Start your prompt with the "Task" **(Persona, Format. and Tone as Nice-to-Haves)**	▪ Think: Generate, Analyze, Create, Compare, Summarize, Categorize, etc.
Strengthen using "Implied Context"	▪ Example: "…Include recycled content, light reflectance, and noise reduction coefficients in your comparison".

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AI Copilots, Prompting for Successful Outcomes

Strength with Examples, when applicable	▪ Example: "…Reference the below example from a previous projects' project description document."
Break down complex asks using "Chain of Though Prompting"	▪ "Based on a project with <insert conditions>, recommend products I should be considering." ▪ "Summarize the differences between <insert products>. ▪ "Provide contact and installation information for <concise list of products>".

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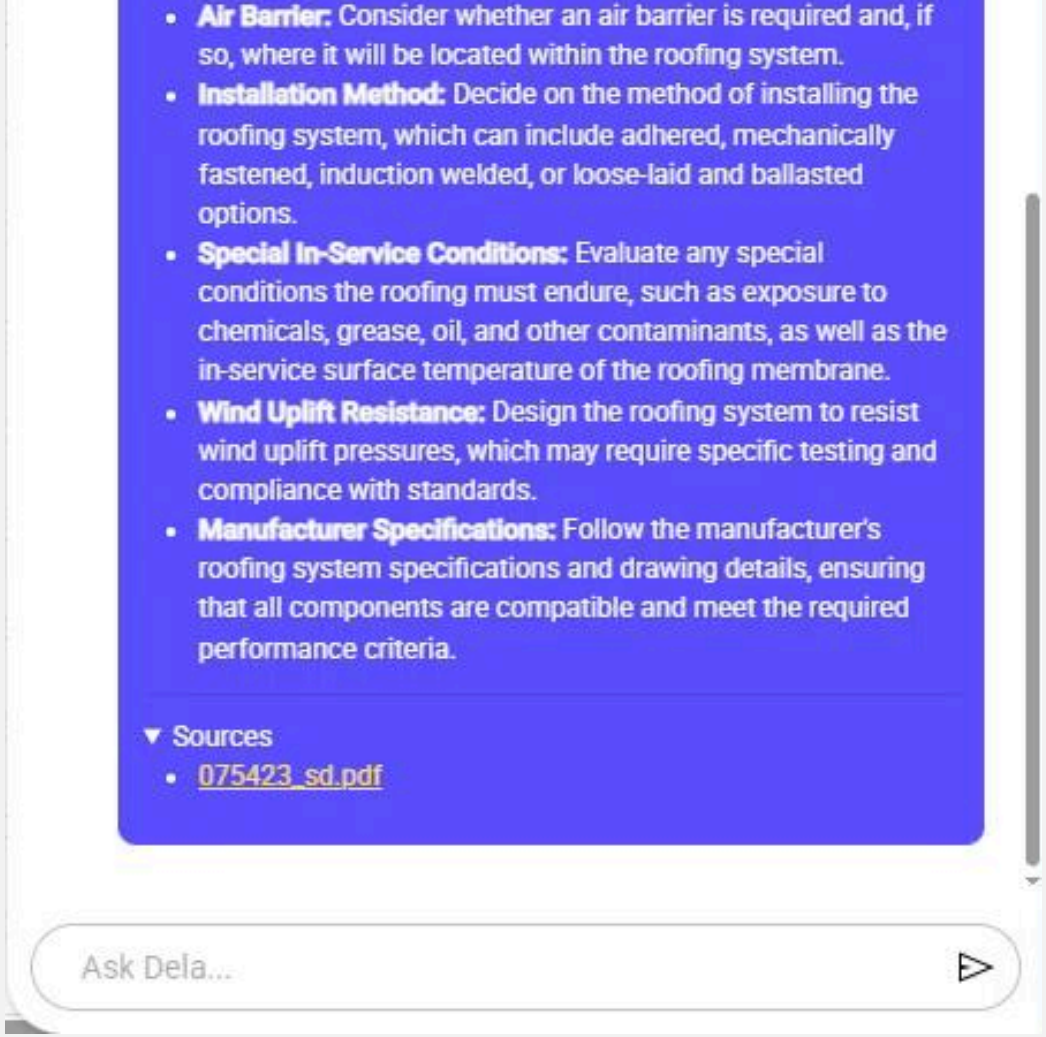
AI Copilot, Use-Cases

Deltek Specpoint's *Dela AI* assistant used for this example.



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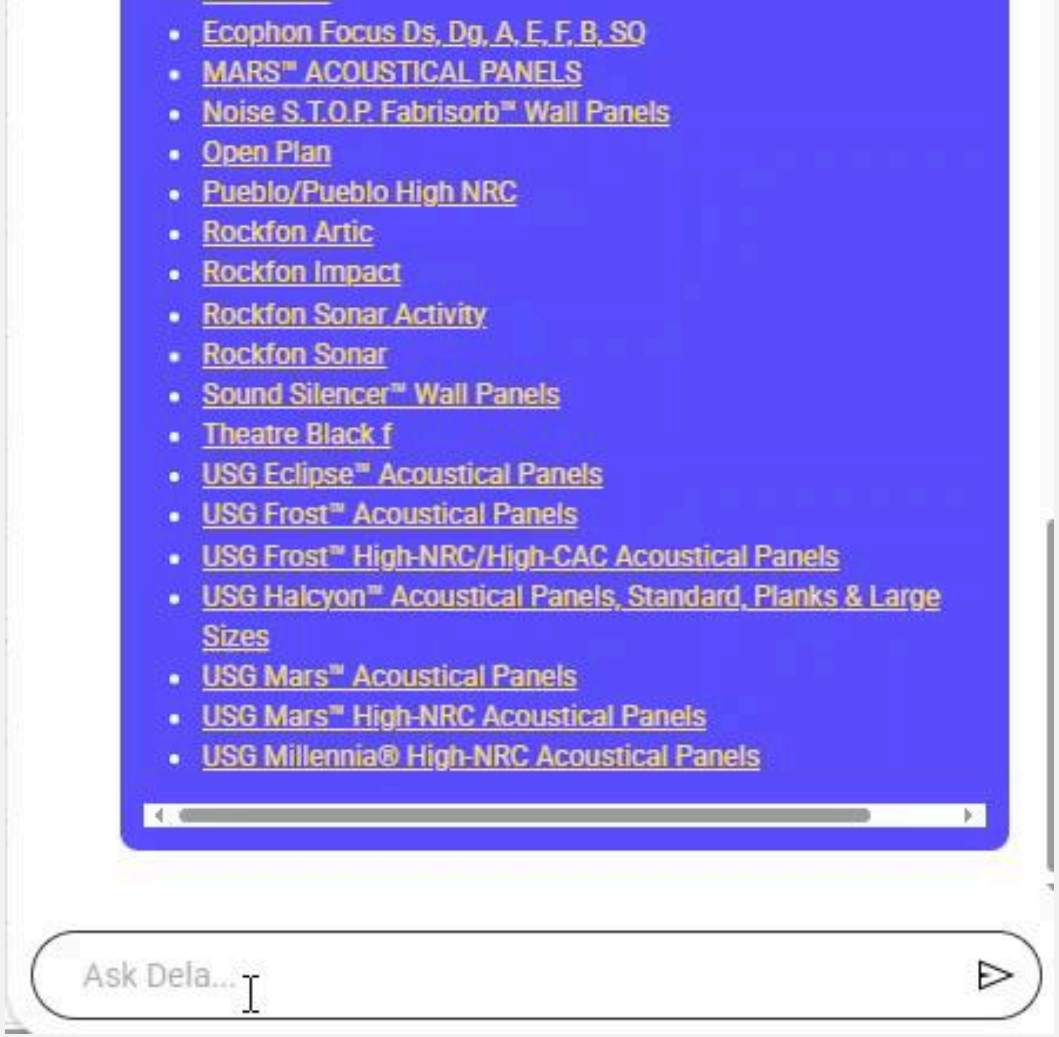

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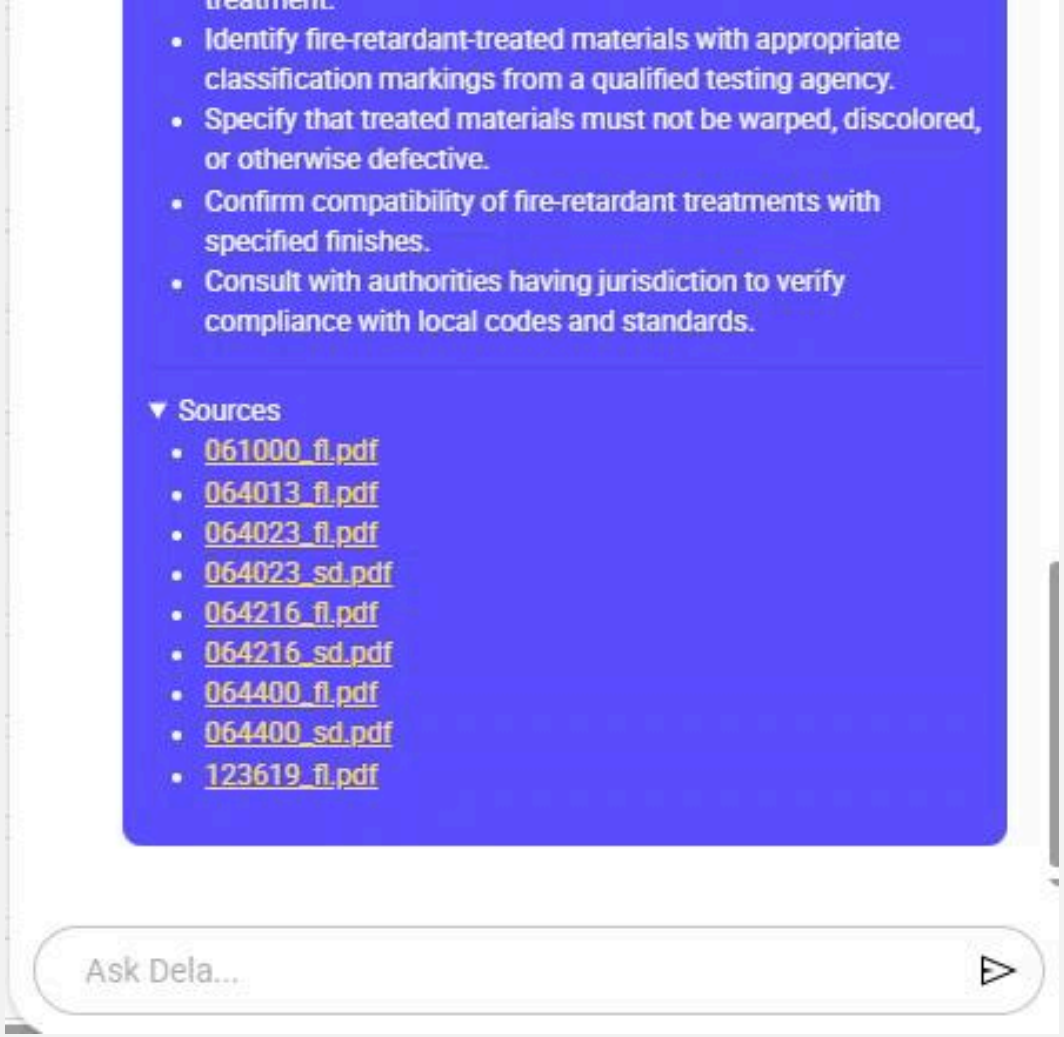

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Additional AI Copilot, Use-Cases

1. Provide a shortlist of vinyl floor tile products that meet ASTM F1700, can be recycled after use, and offer a 20-year warranty.
2. Generate a table with the manufacturer name, product name, and the following criteria for products suitable for an acoustical panel assembly: NRC of at least 0.90; Sustainability-Focused; Minimum 30-year Warranty
3. Develop a checklist with no more than 10 items for how to specify fire-retardant treated wood material.
4. What are key considerations when selecting sealants for control and expansion joints to ensure proper movement and longevity?
5. List all reference standards mentioned in 08 80 00 Glazing

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Security & Trust

Security

Keeping information safe and secure in transit or in storage and comply with essential programs.

Data Sources

Be mindful that data sources are neutral, current, non-conflicting, and avoid web sources.

Firm Privacy

Data is not shared with the community and third parties that do not have the authorization to access the information.

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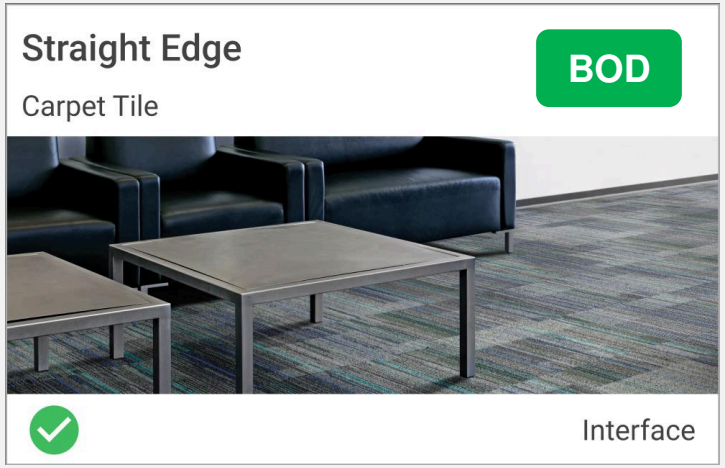
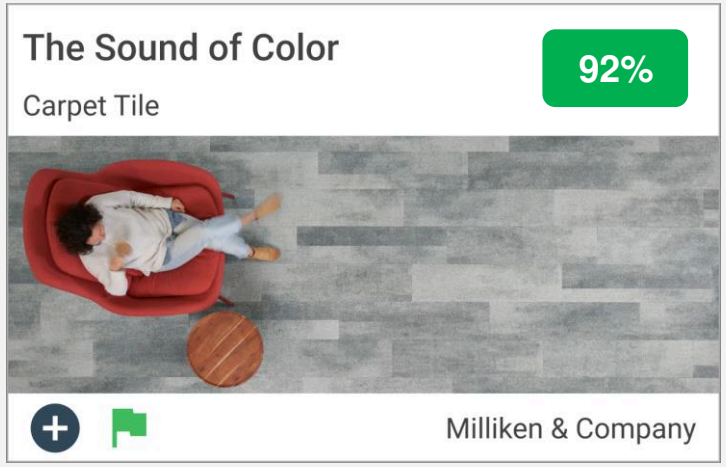
Emerging AI Use-Cases

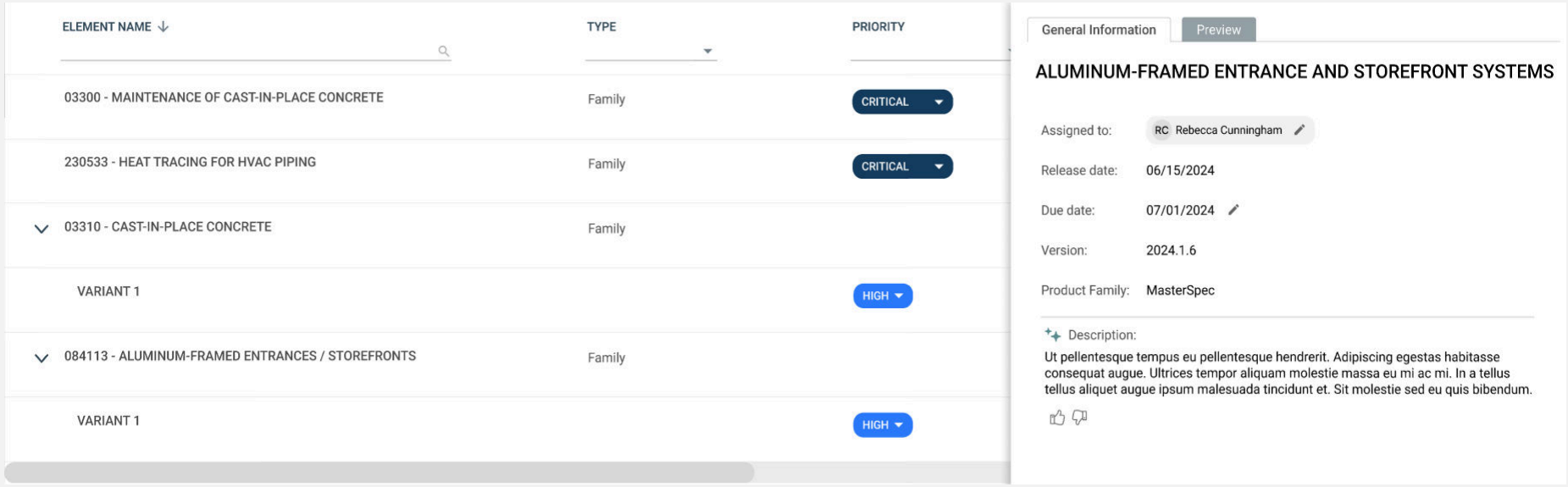
- Product/Material Recommendations
- Best Practice Recommendations





Emerging AI Use-Cases

- Updates Summary, Prioritization Recommendations
- Project Clash Detection
- BIM Clash Detection, Automation



Being Intentional About AI

1. Shift in Mindset, overcoming the resistance by addressing the *Fear of the Unknown* and reviewing proof of concepts.
2. Creating Business Processes that Incentivize Intended Behavior.
3. Adopting the right Technology: Serve the “Today” and the “Tomorrow” simultaneously.
4. Understand Data Security, especially How your Data is being used.

Contact Information

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THANK YOU!