Vision Processing Path

How Diagrams are Processed & Used in Queries

INGESTION: How Diagrams are Processed

📄 PDF DOCUMENT

Construction Drawings & Diagrams

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EXTRACT IMAGES

PyMuPDF extracts each page as high-res PNG

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GPT-4o VISION ANALYSIS

AI "sees" diagram like an engineer

Extracts: Equipment, Connections, Specs, Locations

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DUAL STORAGE

NEO4J GRAPH	CHROMADB IMAGES
Equipment entities	CLIP embeddings
Relationships	512 dimensions
Connections	Visual search

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✅ READY FOR QUERYING

QUERY: How Diagrams are Used

🔍 USER QUERY

"What's in the refrigeration diagram?"

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4 PARALLEL SEARCHES

TEXT VECTOR	KEYWORD BM25	GRAPH Neo4j	IMAGE CLIP
ChromaDB 1536 dims	TF-IDF Exact match	Equipment relations	Diagrams 512 dims

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COMBINE ALL RESULTS

Text chunks + Graph facts + Vision summaries

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GPT-4o SYNTHESIS

Creates answer using all context