

25 AI Terms Every Built Environment Professional Needs

Plain-English definitions with real-world examples for surveyors, quantity surveyors, project managers, and facilities managers.

A

Algorithm

A set of rules or instructions a computer follows to solve a problem or make a decision.

A cost estimation tool uses an algorithm to predict project costs based on historical data.

API

A way for different software systems to communicate with each other and share data.

Your project management software might use an API to pull weather data affecting construction schedules.

Artificial Intelligence (AI)

Computer systems that perform tasks normally requiring human intelligence, such as understanding language or recognising patterns.

AI-powered defect detection software analyses survey photographs to identify structural issues.

Automation

Using technology to perform tasks with minimal human intervention.

Automated quantity take-offs extract measurements from BIM models, reducing manual measurement time.

B

Bias

Systematic errors in AI outputs caused by skewed training data or flawed assumptions.

A valuation model trained only on London data may produce biased valuations for regional properties.

C

Chatbot

An AI programme that can have text-based conversations, answering questions or performing tasks.

A facilities management chatbot helps occupants report maintenance issues and check repair status.

Computer Vision

AI that can interpret and analyse images or video, identifying objects, defects, or patterns.

Drone-mounted computer vision inspects building facades for cracks, dampness, or deterioration.

D

Data Governance

The policies and processes ensuring data is managed properly, securely, and in compliance with regulations.

Your firm's data governance policy determines how client project data can be shared with AI tools.

Deep Learning

A type of machine learning using layered networks to find complex patterns in large datasets.

Deep learning models analyse thousands of past construction projects to predict cost overruns.

E

Explainability

The degree to which an AI system's decisions can be understood and justified by a human.

When an AI flags a building as high-risk, explainability means understanding which factors drove that assessment.

F

Fine-Tuning

Adjusting a pre-trained AI model with specialised data so it performs better on specific tasks.

A language model fine-tuned on RICS guidance can better assist with surveying queries.

G

Generative AI

AI that creates new content (text, images, code) based on patterns learned from existing data.

Generative AI drafts preliminary schedules of condition or creates first-pass feasibility report outlines.

H

Hallucination

When an AI generates information that sounds plausible but is factually incorrect or fabricated.

L

Large Language Model (LLM)

An AI system trained on vast amounts of text that can understand and generate human-like language.

ChatGPT and similar tools are LLMs — they can draft reports, summarise documents, or answer questions.

M

Machine Learning (ML)

A branch of AI where systems learn and improve from data without being explicitly programmed.

ML models learn from historical energy data to predict a building's future consumption patterns.

N

Natural Language Processing (NLP)

AI's ability to understand, interpret, and generate human language in a useful way.

NLP extracts key dates, obligations, and parties from construction contracts automatically.

Neural Network

A computing system inspired by the human brain, made of interconnected nodes that process information.

Neural networks power image recognition systems that classify building materials from photographs.

P

Predictive Analytics

Using data, statistics, and AI to forecast future outcomes or trends.

Predictive analytics forecasts when building components will need replacement based on condition data.

Prompt

The instruction or question you give to an AI system to get a specific output.

"Summarise this survey report in 200 words, highlighting the three most urgent defects" is a prompt.

Prompt Engineering

The skill of crafting effective instructions to get the best output from AI tools.

A well-engineered prompt for a QS task specifies format, scope, measurement standard, and detail level.

R

RAG (Retrieval-Augmented Generation)

A technique where AI retrieves information from a knowledge base before responding, improving accuracy.

A RAG system connected to your firm's past reports generates drafts grounded in your actual project data.

Risk Register

A structured record of identified risks, their likelihood, impact, and mitigation strategies.

Under the RICS AI standard, firms must maintain a risk register that includes AI-specific risks.

S

Shadow AI

Use of AI tools by employees without official approval, visibility, or governance from the organisation.

A surveyor using a personal ChatGPT account for client work without the firm's knowledge is shadow AI.

T

Token

The smallest unit of text an AI processes — roughly a word or part of a word.

AI tools have token limits. A 4,000-token limit means approximately 3,000 words of input and output combined.

Training Data

The information used to teach an AI model how to perform its task.

An AI valuation model is only as good as its training data — if it lacks listed building data, those valuations will be unreliable.

Know the language. Now build the competence.

Build on these concepts with structured, CPD-accredited training for built environment professionals.

Get in touch: support@responsiblewithai.com | responsiblewithai.com