SMART QS HACKATHON 2026

智慧測量創新賽

Smart Decode · Intelligent Surveying

數據解碼・精測細量

Winners

Final Presentation and Awards Presentation Day

17 November 2026 (Tuesday), 2:00 p.m. - 5:30 p.m.

Function Room, 3/F, Core E, Cyberport

Organisers

Housing Bureau
The Government of the Hong Kong Special Administrative Region of the People's Republic of China

香港房屋委員會
Hong Kong Housing Authority

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THE UNIVERSITY OF HONG KONG 香港大學
faculty of architecture 建築學院
Department of Real Estate and Construction 房地產及建設系

Judging Panel for the Final

Final Presentation · 17 November 2026

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying



Mr Andrew LAM

Assistant Director (Project)2, Housing Department



Professor Wilson LU

Head of Department and Chair Professor (Digital Construction), Department of Real Estate and Construction, The University of Hong Kong



Dr Crystal FOK

Head of Business Development, Cyberport



Sr Eric TING

Quantity Surveying Division Chairman, The Hong Kong Institute of Surveyors



Professor YANG Hongxia

Board of Director of Hong Kong Artificial Intelligence Research and Development Institute; Chief Scientist and Founder of Infix.ai



Mr Fei HE

Vice President, Alibaba Entrepreneurs Fund NextGen Partners

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Roll of Honour

(Team Name)

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Award for Smart Contract Advisory

Champion

China Overseas Building Construction Limited – ConSense

1st Runner-up

HKU CI3Lab

2nd Runner-up

SHK (Construction)

Award for Smart Payment Valuation

Champion

LiDARist Company Limited

1st Runner-up

Luban

2nd Runner-up

isBIM Limited

SmartPro Innovation Award

Champion

Glodon (Hongkong) Software Limited

1st Runner-up

CityU-ACE

2nd Runner-up

EPC Solutions (Hong Kong) Limited

The NextGen Smart Frontier Award

Champion

Quantify

1st Runner-up

Permisi

2nd Runner-up

QSight AI

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Champion · Smart Contract Advisory

SMART QS HACKATHON 2026
Smart Decode
Intelligent Surveying

Assigned Challenge - Contract Advisory

Team Name: China Overseas Building Construction Limited – ConSense

Solution Name: **ConSense**

PROJECT SUMMARY

Construction contracts involve extensive documents and interrelated clauses. Quantity surveyors must spend considerable time preparing documents, checking their consistency and locating relevant provisions, while omissions or conflicting interpretations can create downstream risks. ConSense is an AI-assisted contract management solution that brings drafting, vetting and advisory functions together in one workflow. It processes project documents using document parsing, optical character recognition and semantic search, then combines relevant project information with contract templates to help prepare tender and contract documents. Its vetting function assists users in identifying potential inconsistencies, omissions and cross-reference issues, while its advisory function retrieves relevant contractual material to support answers to users' questions.

It also helps users navigate relevant information without searching through each document manually. The innovation lies in connecting clause relationships and information across documents with traceable references to the original sources, enabling users to review the basis of an output and exercise professional judgement. By bringing information and evidence into a common workspace, ConSense aims to reduce repetitive manual work, improve the consistency of contract preparation and review, and make specialist knowledge easier to access and carry forward. It supports quantity surveyors in making informed decisions throughout the contract workflow, while keeping people responsible for checking the information and determining the appropriate contractual response.









1st Runner-up · Smart Contract Advisory

Assigned Challenge - Contract Advisory

SMART QS HACKATHON 2026
Smart Decode
Intelligent Surveying

Team Name: HKU CI3Lab

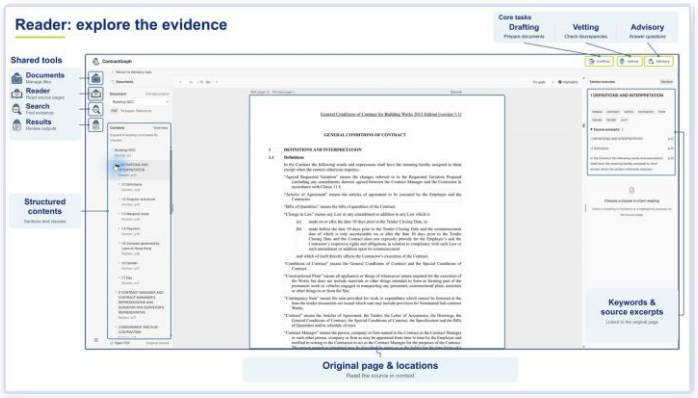
Solution Name: ContractGraph

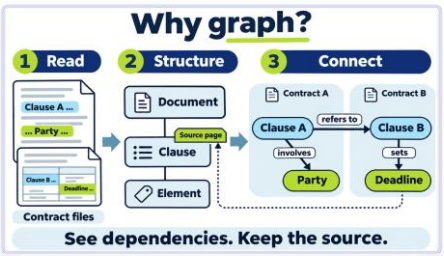
PROJECT SUMMARY

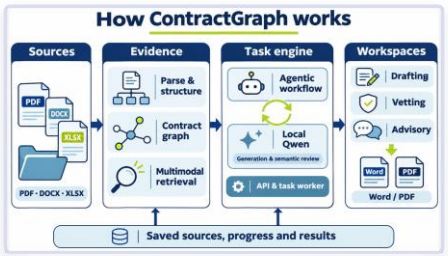
Contract information is distributed across lengthy tender documents, tables, drafting guidance and project correspondence, making related conditions difficult to locate and assess together. ContractGraph combines structured contract knowledge with retrieval augmented generation (RAG) to support tender drafting, vetting and contractual advisory. It organises evidence at page, clause and element levels, retaining source locations and contextual relationships. Multimodal retrieval combines text and page-image embeddings with reranking, while knowledge graph retrieval helps explore entities and connections across documents. Locally deployed Qwen models support semantic analysis and generation. An agentic search workflow can iteratively retrieve evidence, read original passages, follow references and request missing project facts before composing a response.

Drafting translates template guidance and project information into clarification questions and document edits for Notes to Tenderers, Special Conditions of Tender and Special Conditions of Contract. Vetting combines programmed checks with model-based review across nine categories, linking findings and unresolved issues to source evidence. Advisory brings relevant provisions, conditions and visual relationships together for professional assessment. The distinctive feature is the integration of structured contract evidence, multimodal retrieval, graph exploration and interactive workflows in one workspace. Navigation to original pages, source linked outputs and explicit uncertainty allow quantity surveyors to inspect how results are supported. The prototype aims to reduce repetitive cross-document checking and improve the consistency, transparency and reviewability of contract work.











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2nd Runner-up · Smart Contract Advisory

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Assigned Challenge - Contract Advisory

Team Name: SHK (Construction)

Solution Name: **Smart QS Workmate**

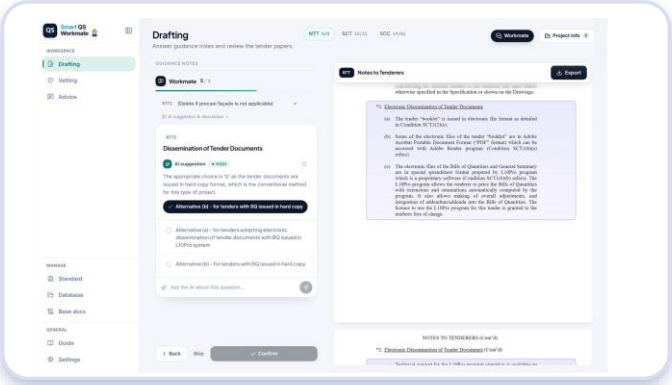
PROJECT SUMMARY

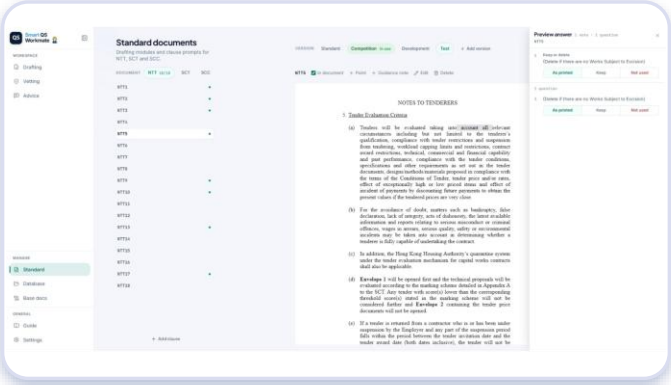
Conventionally, tender preparation has relied on Word documents containing extensive Guidance Notes. Quantity Surveyors (QSs) must manually determine which clauses apply, adapt the wording, and manage document formatting. These repetitive tasks consume valuable time, often delaying attention to more critical contractual and commercial risks.

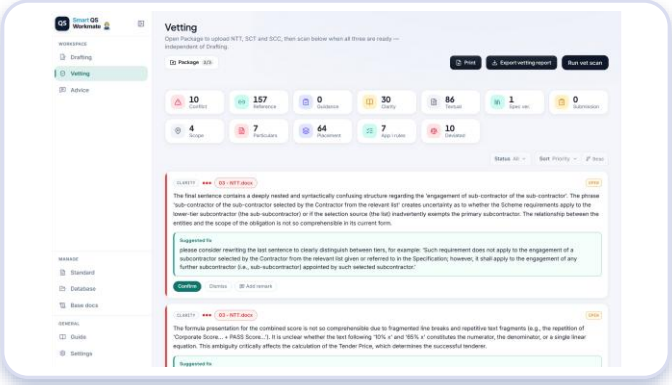
Smart QS Workmate addresses these challenges through an AI-assisted workflow that streamlines drafting, document vetting, and professional advice. It supports tender preparation using standardised, editable modules, with all proposed content subject to human review before being incorporated into the documents. Its Vetting function identifies potential conflicts, inconsistencies, and omissions, while Advice provides guidance only when supported by relevant documentary evidence.

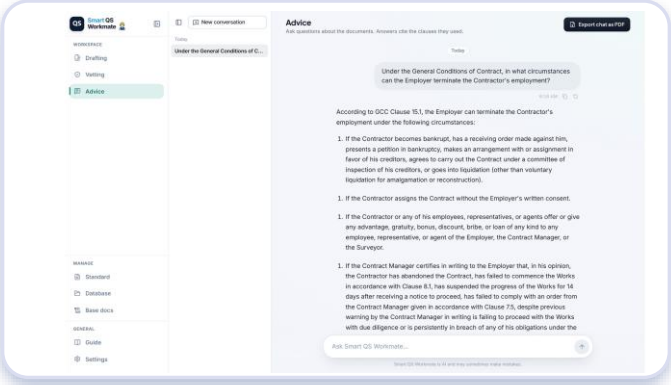
The key innovation lies in the balance between AI automation and professional oversight. Rather than replacing QS expertise, the system takes over repetitive drafting, checking, and formatting tasks while keeping interpretation, risk assessment, and final decisions firmly in the hands of QS professionals.

By reducing manual effort and identifying potential issues earlier, Smart QS Workmate accelerates initial drafting, minimises overlooked details, and improves document consistency. Ultimately, it enables QS teams to focus their expertise on higher-value activities, particularly risk management, professional judgment, and informed decision-making throughout the tender process.









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Champion · Smart Payment Valuation

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Assigned Challenge - Payment Valuation

Team Name: LiDARist Company Limited

Solution Name: **CertainBill – *"Certainty from capture"***

PROJECT SUMMARY

CertainBill is an AI-driven scan-to-payment valuation platform that turns interim payment cycles in Hong Kong construction from weeks of manual valuation into days of evidence-based certainty.

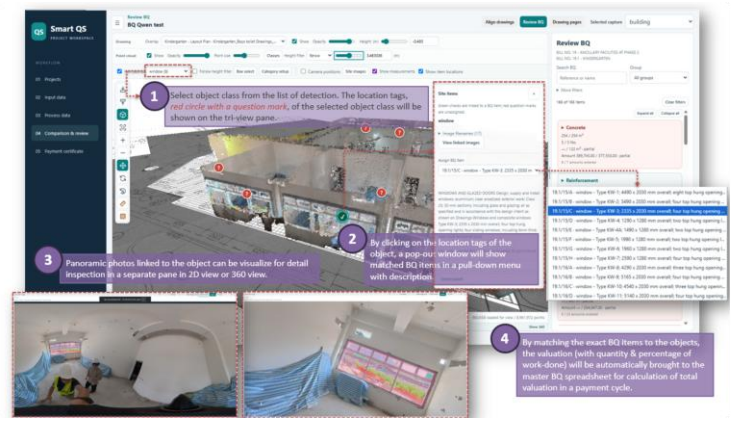
Challenge: Interim valuations still depend heavily on QS input. QS teams walk the site, verify claimed works, assess quantities against drawings, compare against previous payment certificates, and reconcile the differences item by item. The process required detailed, sample-based verification and clear supporting evidence when a payment valuation is required.

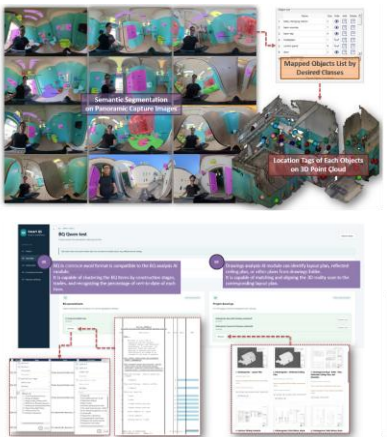
Solution: CertainBill digitises the cycle end to end. The contract Bill of Quantities is imported and AI-clustered by construction stage and trade, with certified-to-date percentages carried forward. A 3D reality-capture scan of completed works feeds AI object recognition, which counts installed items and records their XYZ coordinates. Each detected object is matched to symbols on the drawings and to BQ items on a visual interface, where the QS verifies AI pre-matches item by item and can take manual length or area measurements directly on the point cloud. The draft payment certificate is then generated automatically, backed by photos, coordinates and previous certified percentages, and issued for endorsement.

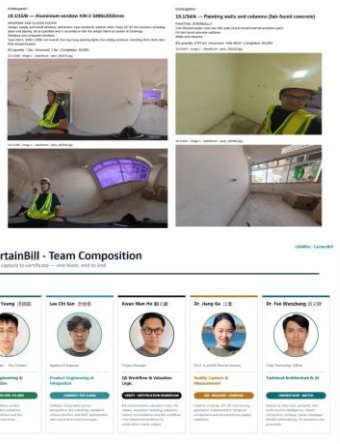
Key innovations:

- An automated platform that delivers item-level evidence, chain-linking every BQ item to its photographic and point-cloud location.
- Quad-view alignment of point cloud, images, detected objects and layout drawings, so verification and review happen on a single screen.
- Robust BQ and drawing-symbol analysis that works from the project's existing spreadsheets and drawings, without rebuilding the data model.
- A shared evidence platform supporting spot checks and a full audit trail for both client and contractor.

Impact: 3D reality capture and purpose-built AI replaces the site walk and manual valuation, and full coverage replaces spot checks. Payment differences fall sharply because every claim is anchored to counted, located evidence, with less back-and-forth on substantiation. QS teams concentrate on verification, and clients pay with confidence.







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1st Runner-up · Smart Payment Valuation

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Assigned Challenge - Payment Valuation

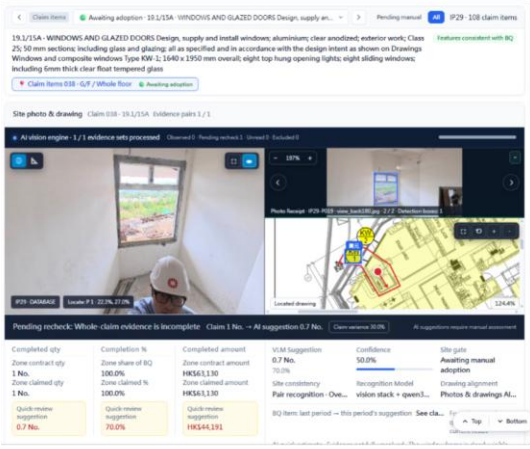
Team Name: Luban

Solution Name: QSight — AI-Powered Evidence-Backed Payment Valuation & Certification Platform

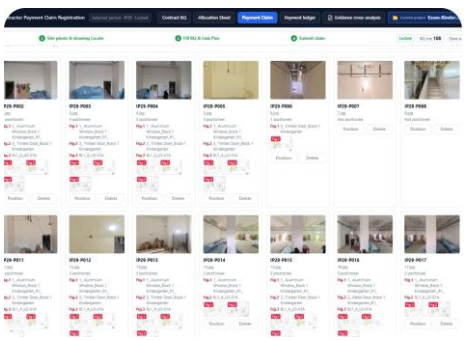
PROJECT SUMMARY

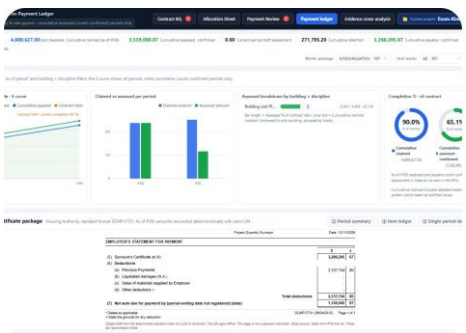
Conventional interim payment valuation relies on manual auditing of massive Bills of Quantities (BQ), drawings, and physical on-site completion via in-person inspections—while requiring compliance with the strict 30-day statutory timeframe and the management of payment disputes under the Construction Industry Security of Payment Ordinance (CISOPO). QSight resolves these bottlenecks through an end-to-end, evidence-backed digital workflow connecting contractors and Project Quantity Surveyors (PQS). On the contractor side, users batch-import 360° site photos, pin them to zone floor plans, and attach paired photo–drawing evidence to corresponding BQ items and allocation sheets.

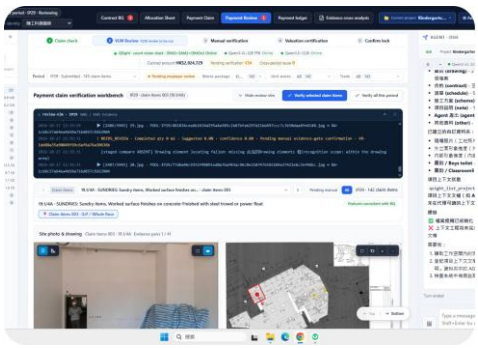
On the QS side, an AI-native pipeline orchestrates a computer vision stack (Grounding DINO, SAM 2, DINOv2) with Vision-Language and Large Language Models (Qwen-VL/LLM) to audit work completion and concealed work coverage against versioned BQ semantic profiles, while flagging uncertain cases for human review. Verified quantities are then processed by a deterministic rules engine that deducts prior certified baselines and generates payment ledgers, previous certified summaries, and standard payment certificates. Our key innovations lie in a strict neuro-symbolic architecture—where multi-modal AI audits completion while a deterministic engine executes all arithmetic with zero LLM math hallucinations —alongside a three-way BQ–drawing–photo spatial evidence chain with automated cross-period photo-reuse detection. Ultimately, QSight compresses certification cycles from days to hours, prevents duplicate claims, ensures statutory compliance, and stabilises cash flow across the construction supply chain.











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2nd Runner-up · Smart Payment Valuation

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Assigned Challenge - Payment Valuation

Team Name: isBIM Limited

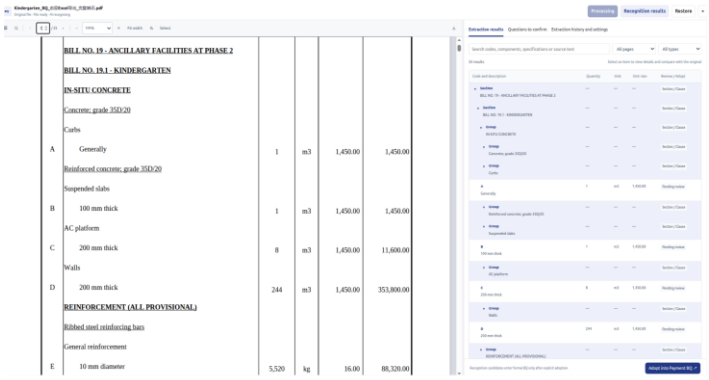
Solution Name: JARVIS Eagle Eye

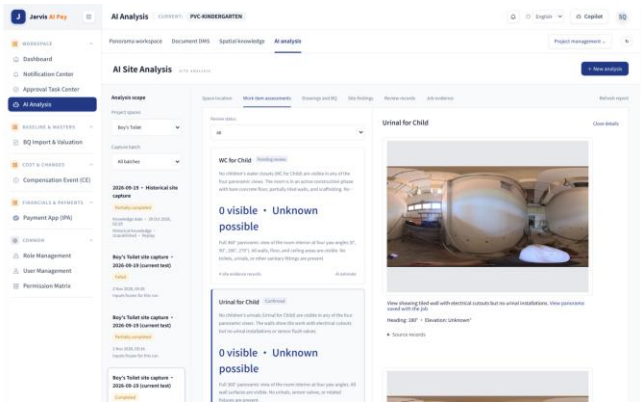
PROJECT SUMMARY

Monthly payment valuation requires quantity surveyors to reconcile site photographs, drawings, bills of quantities and previous payment records. Disconnected information makes it difficult to trace an assessed amount back to its supporting evidence. JARVIS Eagle Eye is designed to connect these activities in one AI assisted workflow. It brings together panoramic site imagery and project documents to help identify completed work, locate relevant evidence and suggest matches to bill of quantities items. Quantity surveyors review the recommendations, resolve uncertain observations and confirm the quantities used for valuation. The reviewed information then supports an itemised valuation breakdown and preparation of a draft interim payment certificate.

The key innovation is a continuous, traceable link between site evidence, work locations, measurement bases, bill items and professional review decisions. AI supports interpretation and matching, while defined calculation rules use confirmed quantities and rates to calculate amounts. This separation keeps professional judgement and approval with the authorised quantity surveyor and makes the basis of an assessment easier to inspect. The solution aims to support evidence organisation and cross-checking, improve consistency and make payment discussions more transparent. By helping project teams understand what has been assessed and why, it supports more efficient collaboration throughout the monthly payment cycle.







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Champion · SmartPro Innovation Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Professional

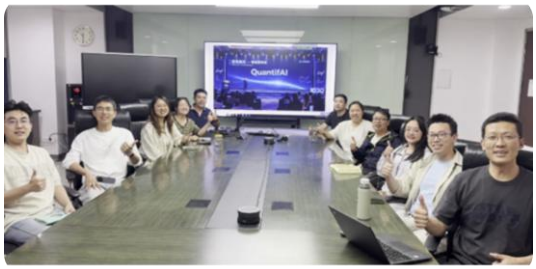
Team Name: Glodon (Hongkong) Software Limited

Solution Name: **Glodon QuantifAI & CostAI —One-Click Quantity Surveying**

PROJECT SUMMARY

Quantity surveying data in Hong Kong's construction industry has long been scattered across drawings, spreadsheets and models. Design changes are frequent, drawings fall out of step with the BQ, and manual measurement requires rigorous checking — in fact, a QS spends lots of their time on detailed measurement and data verification. To address this, Glodon's AI × 5D BIM solution applies its self-developed AecGPT large language model together with Hong Kong measurement rules: AI first interprets drawings and parses spreadsheets, then completes one-click quantity take-off for concrete, formwork, reinforcement, finishes and structural steel, and automatically links quantities to the BQ and matches BQ rates, greatly improving tendering and cost management efficiency.

The core innovation brings together three elements — AECOS, built on more than 20 years of accumulated industry data, self-developed 3D graphics technology, and AecGPT — consolidating AI, drawings, spreadsheets, rules and BIM data onto single platform, so that measurement efficiency rises, measurement consistency improves, project cycles shorten and operational efficiency improves for all parties.











1st Runner-up · SmartPro Innovation Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Professional

Team Name: CityU-ACE

Solution Name: iQSmart - An Intelligent AI Assistant for Smart Quantity Surveying

PROJECT SUMMARY

The field of quantity surveying faces significant challenges due to multi-stage verification, detailed document processing requirements and fragmented information sources, requiring rigorous integration and precise verification. To address this, we propose developing an autonomous, goal-oriented AI assistant tailored for QSs that leverages natural language processing to interpret inputs, fetch information from various sources, and orchestrate multiple tools to support informed decision making. Using the common valuations of variations as a testbed, this innovative system features a locally deployed LLM at its core, along with an MCP server that serves as an integration layer, connecting to BIM software for real-time data interaction. Key innovations include automated document processing via a RAG layer and a supervisory Orchestrator Agent that synthesises results and validates outputs, thereby enhancing accountability within the QS workflow. The inclusion of human-in-the loop validation ensures that the system enhances professional judgment, which is crucial in real-world practice where accountability and accuracy are essential.

All completed valuations are recorded on a permissioned blockchain network in which the Employer, Main Contractor, Subcontractors, and Suppliers operate as interconnected nodes. Upon formal agreement, the valuation record becomes immutable, preventing any subsequent amendment. This multi-party consensus mechanism delivers significant benefits, including an unalterable audit trail that remains intact even if surveyors change roles or leave the project, reliable continuity for chasing outstanding valuations, and enhanced trust through transparent yet appropriately restricted data sharing among project stakeholders. The ultimate goal of this project is to revolutionise the quantity surveying profession by improving efficiency, accuracy, and overall productivity.

2nd Runner-up · SmartPro Innovation Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Professional

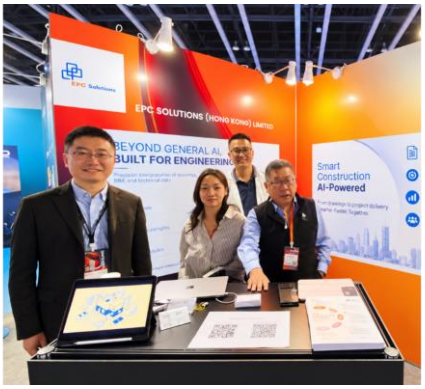
Team Name: EPC Solutions (Hong Kong) Limited

Solution Name: **AI-powerd QS Digital Copilot**

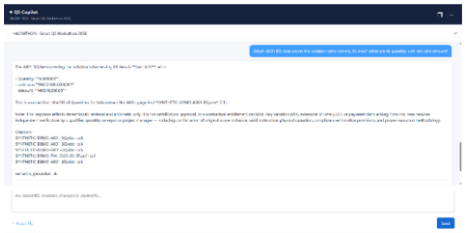
PROJECT SUMMARY

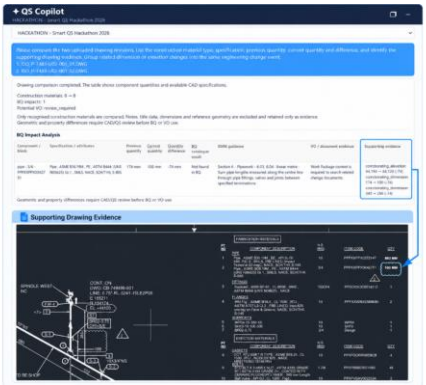
Quantity surveyors preparing tender submissions, assessing payments, and valuing construction changes must repeatedly review drawings, bills of quantities, contracts, and pricing records held across different files. Finding comparable rates and checking whether work is included in the original scope can be complicated and time consuming. QS Copilot combines construction domain knowledge with an AI Chat to help quantity surveyors search, compare, and interpret project information through natural language. The system is designed to extract information from drawings, material schedules, BQs, and contracts, then highlight irregularities, quantity changes, and potential variations for professional review. Through natural language, quantity surveyors can request pricing support for tender submissions and compensation event (CE) valuations.

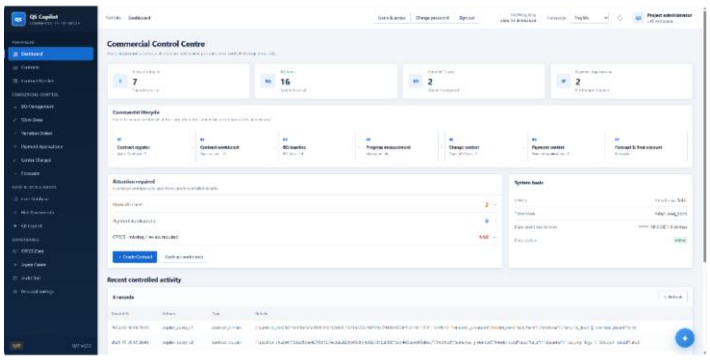
The system searches comparable historical records and presents suggested rates alongside their median, highest and lowest values, with references to the underlying sources. Its key innovation is the use of construction components and an evidence hierarchy to connect drawing differences with BQ items and relevant contract provisions. The assistant also brings together work done, payment records and project context, so that users can investigate discrepancies and identify the next steps. By making evidence and pricing information easier to access and review, QS Copilot aims to reduce repetitive checking, improve the efficiency and accuracy of payment assessments, and support more informed decisions about project costs and risks.











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Champion · NextGen Smart Frontier Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Student

Team Name: Quantify

Solution Name: QS Smart AI

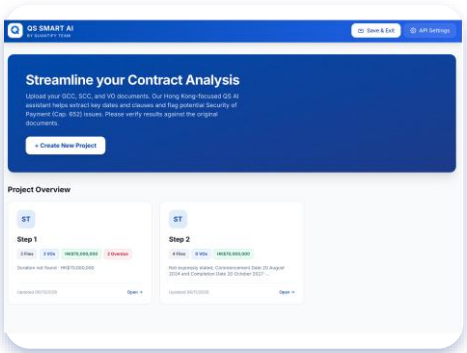
PROJECT SUMMARY

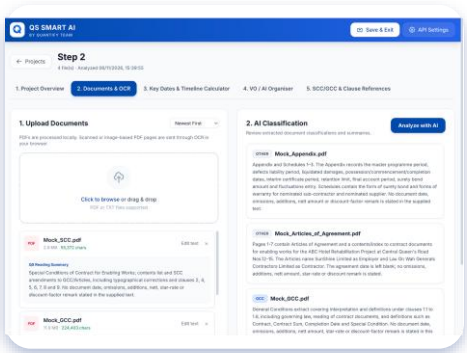
In the fast-track Hong Kong construction sector, practitioners constantly face administrative bottlenecks and strict statutory compliance challenges when dealing with complex contract documentation, payment claims and variations. To tackle this, Quantify have developed QS Smart AI, an intelligent assistant that ingests contract documents, cost data, drawings, and interim payment applications to help automate file sorting, statutory payment protection under the Construction Industry Security of Payment Ordinance (Cap. 652), and variation assessments.

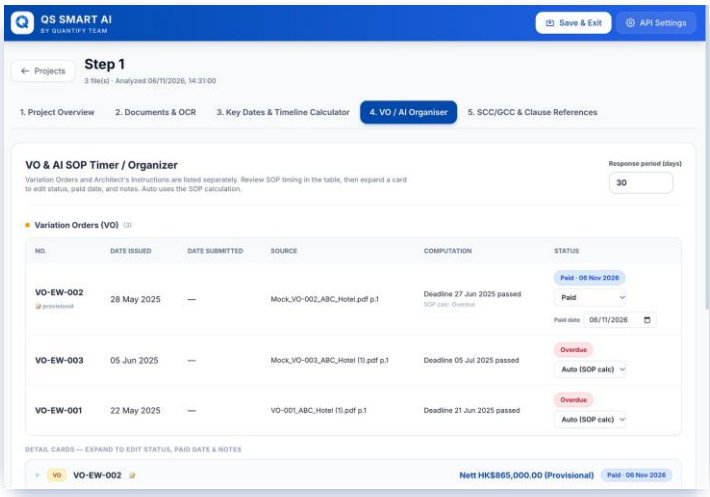
Powered by our cutting-edge core innovations, including automated filing and workflow optimisation, a 30-day statutory countdown tracker, strict contractual time-bar filtering, and a specialised variation order (VO) document analysis and flagging function—our system acts as a reliable reference for Quantity Surveyors in executing the contractual clauses and reacting to possible conflicts. By combining these capabilities in a single platform, QS Smart AI reduces repetitive manual work, improves document consistency, and helps users identify critical deadlines and compliance issues earlier in the process, tracking payments and additional costs incurred.

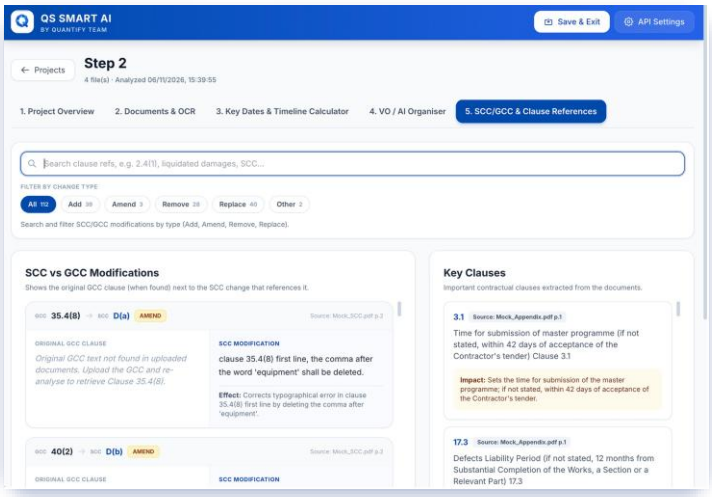
Ultimately, our solution empowers the construction sector to eliminate statutory default risks, protect project budgets from late or invalid claims or missing supporting documents, and streamline the entire quantity surveying workflow with unprecedented accuracy, efficiency, and full alignment with government standards. As a result, Quantity Surveyors can confidently provide cost and contractual information for decision making across project teams, enabling stakeholders to respond faster to contract issues, strengthen claim management, and maintain better control over commercial outcomes throughout the project life cycle.











Organisers

Housing Bureau
The Government of the Hong Kong Special Administrative Region of the People's Republic of China

香港房屋委員會
Hong Kong Housing Authority

數碼港 Cyberport

THE UNIVERSITY OF HONG KONG 香港大學
faculty of architecture 建築學院
Department of Real Estate and Construction

1st Runner-up · NextGen Smart Frontier Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Student

Team Name: Permisi

Solution Name: AegisQS

PROJECT SUMMARY

Quantity surveyors in Hong Kong still control project costs across scattered 2D and 3D drawing revisions, email attachments and disconnected Excel files. When a revised drawing arrives, manual review is required to assess the potential variations and cost implications before work starts and costs are committed. Volatile material prices add further risk, while conflicting file versions complicate audit trails. AegisQS is an AI-assisted cost-control platform built around the way QS teams already work.

Its drawing revision analyser automatically compares successive 2D and 3D drawing revisions, highlights added, removed and modified elements, and flags each change as a potential variation event, linked to the affected BOQ items so its indicative cost impact can be reviewed early. A forecasting module predicts price trends for individual materials from Hong Kong price and index data, helping the QS advise on the best time to buy. All contract documents, site records and financial data sit in one central hub with version history and a full audit trail, and a direct Excel integration lets surveyors keep estimating in familiar spreadsheets while AegisQS synchronises, version-controls and error-checks the data in the background. Key innovations are automated change detection across drawing revisions, item-level material price forecasting, and an Excel-native single source of truth that needs no change in working habits. The result: QS teams catch variations earlier, time purchases to reduce price risk and resolve queries with traceable records, giving clients greater cost certainty.

2nd Runner-up · NextGen Smart Frontier Award

SMART QS HACKATHON 2026

Smart Decode
Intelligent Surveying

Open Challenge - Student

Team Name: QSight AI

Solution Name: **QS Preflight**

PROJECT SUMMARY

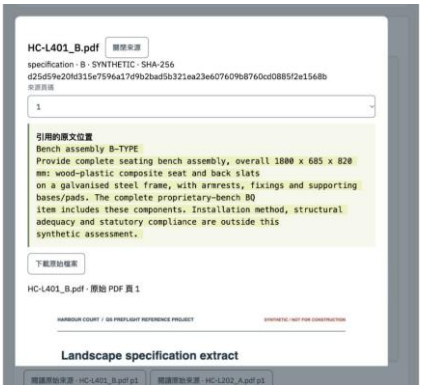
Early design changes leave quantity surveyors searching across drawings, schedules, specifications and bills of quantities to understand both direct costs and related work. QS Preflight helps client-side and consultant quantity surveyors prepare a traceable, indicative cost-impact draft before a formal instruction is issued. Users import baseline and proposed drawings, supplied BQ rates and supporting documents. Document text, tables and supported geometry generate candidate changes and quantities; source-linked rate matching and deterministic calculations then prepare an editable draft. Users can inspect original evidence, correct proposals, undo changes, save and reopen work, and export draft reports. Missing information and unpriced scope remain explicit.

The innovation is the connection between a design change, its related cost consequences and the evidence needed for professional review. For example, the prototype distinguishes a complete bench assembly from components already covered by its rate, and separates paving additions from omissions. This supports discussion about accepting, revising or clarifying a proposed design, rather than presenting an unexplained total. The current prototype has demonstrated this workflow using synthetic documents and rates. Optional AI can suggest additional candidates, but its incremental benefit and actual time savings have not yet been established. The public demonstration uses deterministic processing and calculations, with human confirmation. Professional validation remains pending; the system supports, but does not replace, the quantity surveyor's judgement.











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