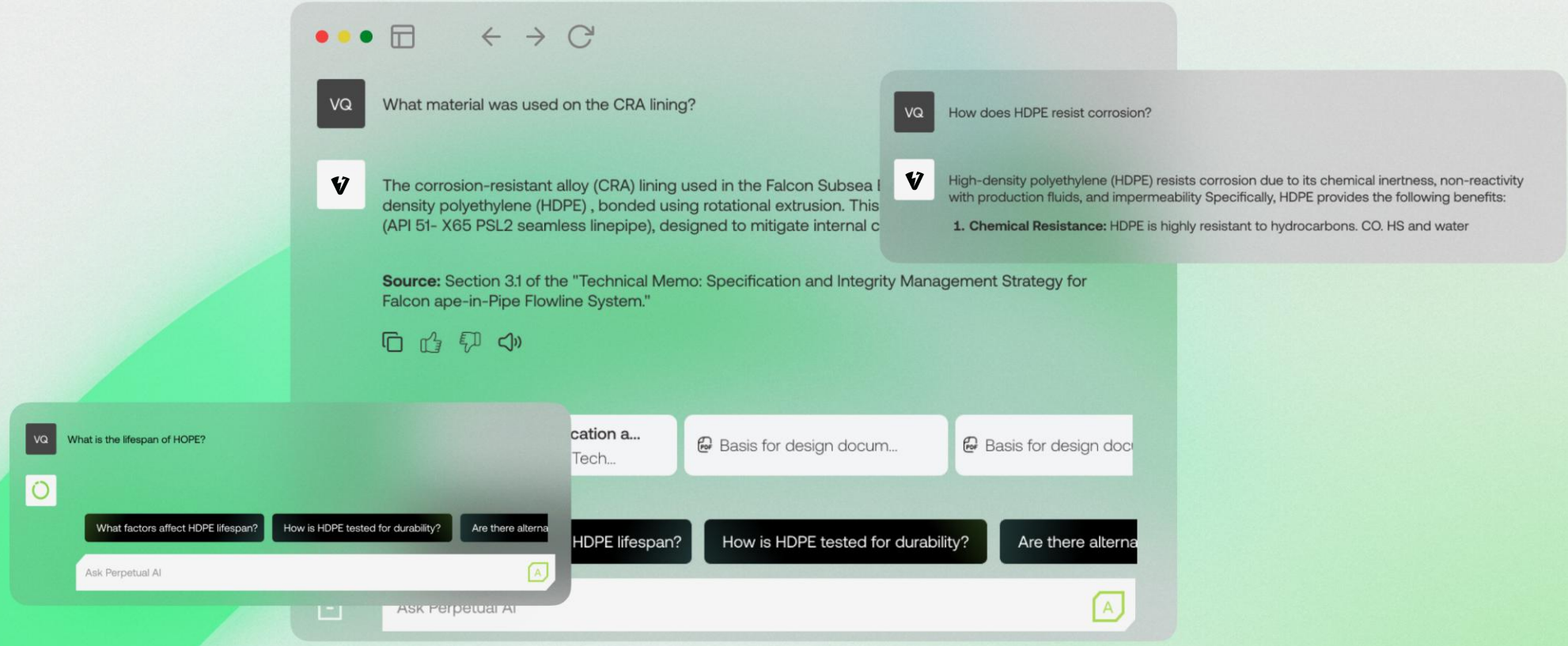
VOLTQUANT

Applying AI in Capital Projects

Use cases and Value Realisation



Agenda

✓ Why AI in Capital Projects?

The reality of today's project environment. Leaner teams, tighter schedules, and increasing information overload.

✓ The Case for Change

How traditional tools fall short in capturing knowledge and supporting engineering decisions.

✓ What AI Brings to the Table

From intelligent agents to knowledge-driven reasoning. Focusing on outcomes, not algorithms.

✓ Real-World Use Cases and Demo

Practical examples showing how AI supports engineers in document review, compliance, and decision-making.

✓ What this Session Is Not About

Not a deep dive into data science, model architectures, or LLM theory. This is about practical adoption, value, and lessons learned in live projects.

Today's Project Reality

Rising Cost

+6%
Labour,

+10%
Materials YOY- CAPEX Rises

Pressures on Schedule

Design changes, rework, delays in regulatory approval squeeze timelines

Rework & Overruns

12%
Rework

20%
budget overrun from quality defects

Do More with Less

Execute Smarter. Do more with smaller teams.

Overloaded. Under Resourced. Accountable to Deliver

Too Much Data

Engineers waste time finding and integrating info—instead of adding value.

Lean Teams, More Demand

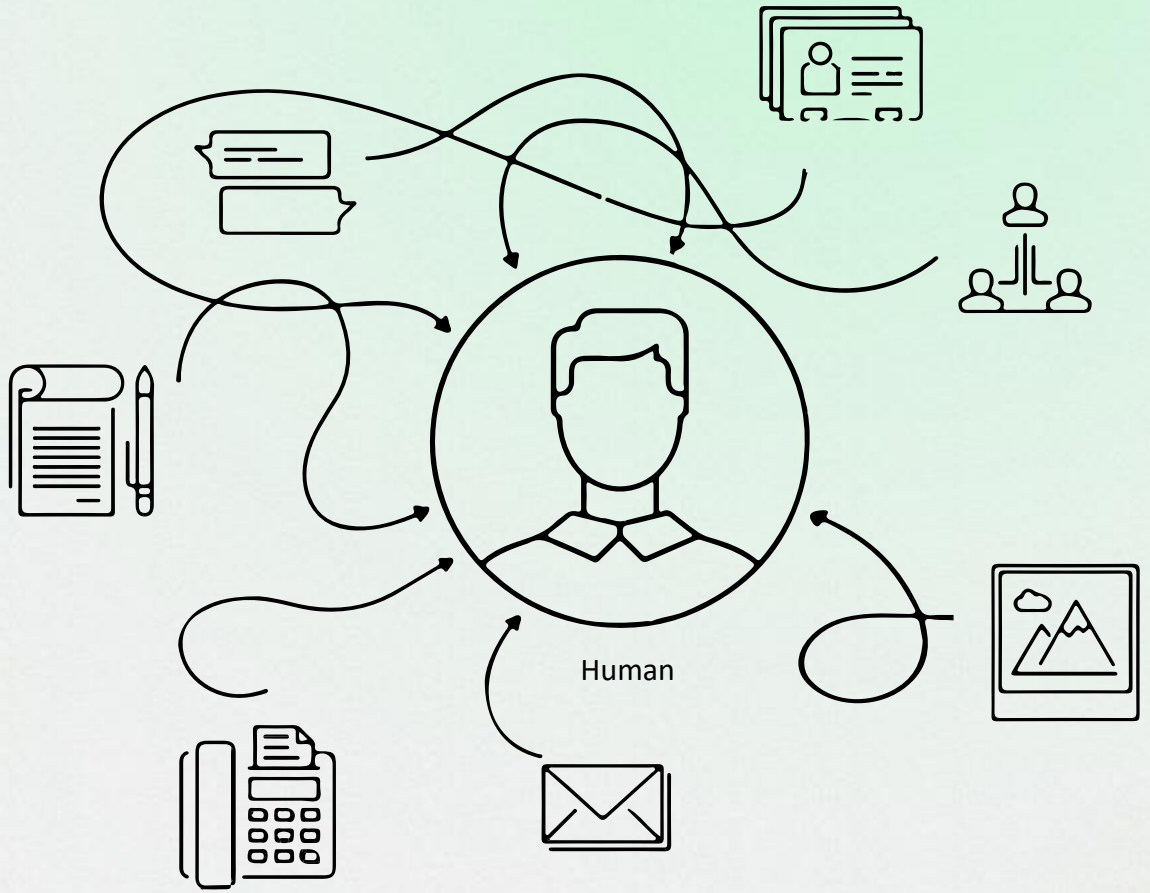
Fewer engineers face rising data and nonstop delivery pressure.

Lost Expertise

Retiring SMEs take critical judgment and intuition with them.

Project Risk

Poor decisions lead to rework, delays, and missed outcomes.



Use Case 1 - Stalled Project in Pre-FEED

Project has invested significantly ($M) on technical studies and was at the threshold of FEED. It has been paused awaiting further clarity affecting the investment climate in the UK.

Knowledge Retention Risk

- Capture & Store critical project data & insights

Onboarding Challenges

- Reduce time to learn and deliver!

Fragmented Data Risk

- Reduce time lost searching for data and integrating knowledge

More with Less

- Use lean team create new deliverables

Use Case 2- Project in Detailed Design/Execute

Project is in EXECUTE phase with significant high number of document checking workload on a lean engineering team. Client requires a system that will review a significant number of diverse vendor documents against project specifications and aide the engineering team.

Compliance Checking

Consistent application of project requirements & standards.

Audit trail on decisions

Every AI check is carefully documented for future audit.

Schedule Delivery

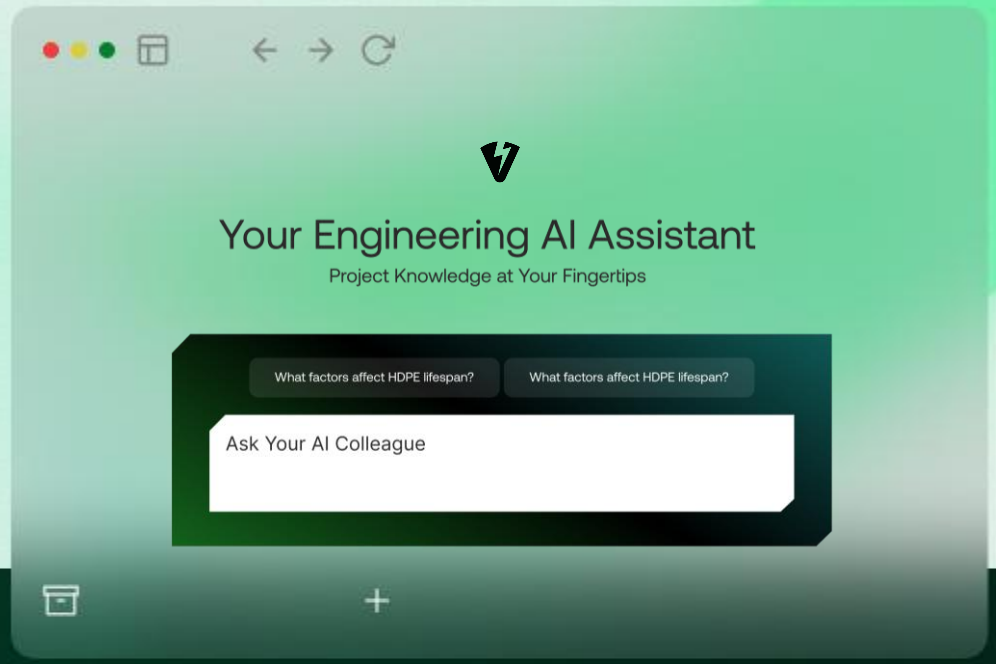
Reduce review cycle times for quick decision making

More with Less

Not feasible to hire LARGE teams in lean projects.

What are we doing with AI in projects?

Our AI platform helps engineers find answers, write reports, check supplier docs, and even talk to CAD files. Instantly.



Auto-Review Vendor Submissions

Compare Supplier Documentation against project and asset knowledgebase to rapidly identify gaps in supplier proposals.

Clause-Aware Compliance Checks

AI can enforce internal standards automatically, checking every drawing and datasheet against clause-level requirements to ensure traceable compliance.

AI Document Search

AI automates engineering document search for both desk and field engineering teams.

Generate Engineering Reports

Generate high-impact high quality engineering justification paperwork based on your latest project datasets.

AI adding value in Capital Projects

Current Pain Points

- ✗ Manual document and compliance checks are slow, inconsistent, and prone to human error.
- ✗ Reports takes significant effort to develop
- ✗ Slow, manual search across siloed systems
- ✗ New engineers took significant time to get up to speed
- ✗ Critical know-how lost with every team change

Where AI can help

- ✓ Document and compliance checks are automated; deviations are flagged instantly for human review.
- ✓ Integrated technical Reports assured and delivered in weeks, not months.
- ✓ Ask complex questions. Get answers instantly.
- ✓ Rapid upskilling & onboarding of new employees
- ✓ Your best practices and decisions are built into the system.

Risks are flagged early; controls can be applied, enabling teams to make faster, more assured decisions.

AI Solving Business Challenges

Area	Business Challenge	AI Colleague Impact
Engineer Efficiency	30-40 % of an engineer's working year (~800 h) disappears into non-value-added admin, wasting ~£40k per head.	AI automates repetitive engineering tasks, releasing the hours for design and innovation.
Cost Displacement	Manual engineering effort costs ~£50/hr for repetitive and administrative tasks.	AI delivers faster equivalent output at **£2/hr**, scaled across projects freeing engineers for high value add work.
Speed to Insight	Delayed decisions from slow documentation cycles and misalignment. 5-20% schedule overruns are common.	AI enables same-day turnaround for reports, faster decisions and issue detection. 5-10% shorter timelines expected. (*IPA, Bain, Oil & Gas Journal*)
Knowledge Retention	SME knowledge loss through turnover, poor transfer, and siloed systems.	AI becomes a long-term digital colleague that recalls and reuses project insights.
Onboarding & Ramp-Up	Junior engineers take 6–12 months to ramp without access to real-time, context-rich examples.	AI reduces onboarding time by 30-50% through guided, evolving support. (*Accenture*)

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Questions & Discussions