Built AI
Audit™

OPERATIONAL INTELLIGENCE AUDIT™ · DELIVERABLE 02 OF 07

SECTION 01

Executive Summary

The total estimated margin leakage across Hartwell M&E Group is **£1.87m per annum** — equivalent to 4.2% of turnover being lost through operational inefficiency, missed commercial recovery, cashflow drag and administrative burden.

4.2%

£1.87m estimated annual margin leakage

Across six leakage categories · Based on 18-month financial data, variation logs, CAFM export and stakeholder interviews

LEAKAGE CATEGORY	ANNUAL ESTIMATE	% OF TOTAL	SEVERITY
Missed commercial recovery	£620,000	33.2%	Critical
Aged WIP & CNI drag	£410,000	21.9%	Critical
Tender & bid admin burden	£340,000	18.2%	High
Invoice blockers & deductions	£235,000	12.6%	High
Reporting & governance overhead	£165,000	8.8%	Medium
SLA deductions & reactive penalties	£100,000	5.3%	Medium
Total estimated leakage	**£1,870,000**	**100%**	

Key finding. The two largest leakage categories — missed commercial recovery and aged WIP — are both commercially addressable. They do not require systems investment or organisational restructuring. They require better capture, earlier notice and faster submission workflows. These are the primary targets for the Prioritised AI Opportunity Roadmap (Deliverable 03).

SECTION 02

Margin Leakage Waterfall

How the £1.87m breaks down across each category of operational and commercial loss.

Values based on 18-month Sage 200 extract, variation log analysis, CAFM ticket export and stakeholder-reported estimates

SECTION 03

Category Analysis

Detailed findings across each leakage category, including root causes, evidence sources and improvement indicators.

● Critical CAT-01

£620k

Missed Commercial Recovery

£620,000 per annum · 33.2% of total leakage

Hartwell's variation log shows 142 change events recorded across 23 live contracts over the last 18 months. Of these, **only 58 (41%) progressed to a formal submission**. A further 47 events (33%) were noted but never formalised with a contractual notice or valuation. The remaining 37 events (26%) were logged after the commercial window had closed.

FINDING	DETAIL	IMPACT
Late notice discipline	Average time from change event to formal notice: 18 working days. Contractual window on 14 of 23 contracts: 10–14 days.	37 events (£310k est.) time-barred or commercially weakened
Weak cause-and-effect narrative	Of 58 submitted variations, 22 (38%) were returned by the client with requests for further justification. Average resubmission cycle: 3.2 weeks.	£145k in approved variations required two or more submissions
Evidence not linked to events	Photographs, emails and site records exist but are stored in personal folders, WhatsApp threads and email inboxes rather than indexed to the change event.	Average evidence assembly time per variation: 4.5 hours
No pipeline visibility	Commercial team tracks variations in a spreadsheet updated monthly. No real-time view of pipeline value, ageing or submission status.	Management unaware of £180k+ in uncommercialised events until QBR review

Root cause. The commercial team has the technical knowledge to recover these amounts. The constraint is time, structure and notice discipline — not capability.

Change events are identified late because capture relies on contract managers raising them verbally, and the evidence assembly process is manual and fragmented.

Critical CAT-02

£410k

Aged WIP & Completed-Not-Invoiced Drag

£410,000 per annum · 21.9% of total leakage

Sage 200 CVR extract shows **£1.24m in WIP aged over 60 days** across the contract portfolio, of which £680k has been aged over 90 days. Completed-not-invoiced (CNI) work — jobs signed off on site but not yet submitted for payment — totals £390k across 8 contracts.

£1.24m
WIP aged over 60 days
£680k over 90 days

£390k
Completed-not-invoiced
Across 8 contracts

FINDING	DETAIL	IMPACT
Delayed application preparation	Monthly applications are typically prepared in the final 3 days of the valuation period. Supporting documents are assembled retrospectively.	Incomplete applications submitted late; deductions applied on 4 contracts
No CNI tracking process	Completion status is held in engineers' diaries and job sheets. No central log tracks the gap between practical completion and invoice submission.	Average CNI-to-invoice cycle: 34 days (target: 7 days)
Disputed valuations	12 valuations disputed in the last 12 months, averaging £38k each. Disputes primarily relate to missing photographic evidence or unsigned completion records.	£456k in valuations delayed by an average of 6 weeks
Cashflow cost	Working capital tied up in aged WIP and CNI creates an opportunity cost estimated at £32k–£48k per annum at current borrowing rates.	Finance Director confirmed overdraft facility drawn specifically to cover WIP gap

High CAT-03

Tender & Bid Admin Burden

£340k

£340,000 per annum · 18.2% of total leakage

Hartwell submitted 67 tenders in the last 12 months at a win rate of 22% (15 wins). The average tender cycle consumes **94 person-hours** of estimating, commercial and technical resource. Of that, an estimated 38 hours (40%) is spent on repetitive structuring, reformatting, compliance checking and document assembly rather than value-adding commercial work.

67
Tenders submitted
Last 12 months

22%
Win rate
15 wins from 67

94hrs
Avg hours per tender
Across all resource types

40%
Spent on admin
38 hrs of repetitive work

FINDING	DETAIL	IMPACT
Manual scope extraction	Every tender requires manual reading and extraction of scope items from PDFs, schedules and specification documents. No templated extraction process.	8–12 hours per tender on initial scope structuring alone
Assumptions & exclusions rework	Assumptions schedules are drafted from scratch each time. The team has no maintained library of standard assumptions by contract type or client.	Average 3 rework cycles per tender on the assumptions schedule
Declined opportunities	Estimating Lead confirmed that 11 viable tenders were declined in the last 12 months due to capacity constraints during the bid production phase.	Estimated pipeline value declined: £3.8m (at 22% win rate = £836k lost revenue)
QA and compliance checking	Pre-submission QA is a manual checklist. Compliance responses are populated individually for each tender from the same underlying information.	6–8 hours per tender on compliance and QA assembly

High CAT-04

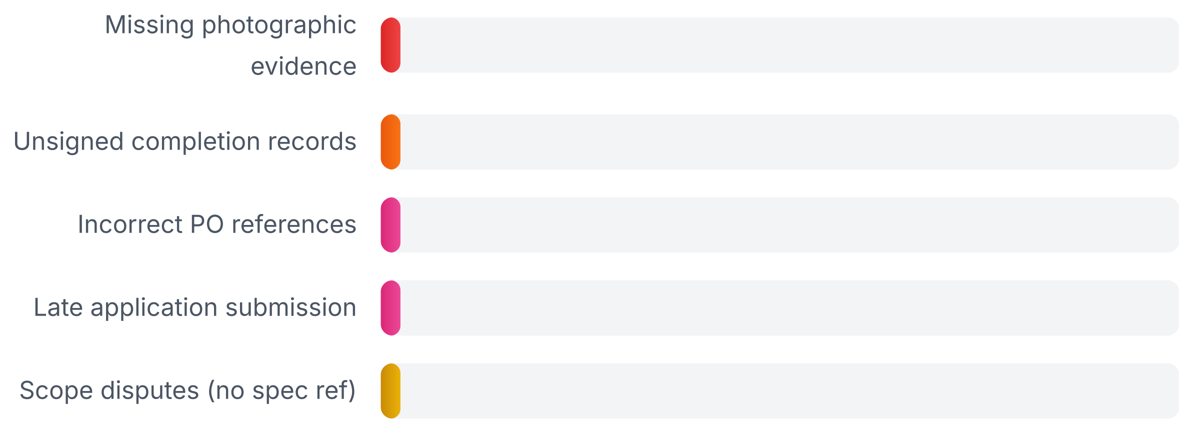
£235k

Invoice Blockers & Payment Deductions

£235,000 per annum · 12.6% of total leakage

Analysis of 12 months of payment certificates against submitted applications reveals **£235k in deductions, disputed amounts and delayed payments** attributable to incomplete evidence, missing documentation or administrative errors in the application process.

Top five blocker categories



Pattern. Four of the five blocker categories relate to evidence assembly and administrative process — not commercial disputes or scope disagreements. These are preventable with structured capture at the point of completion rather than retrospective assembly at application stage.

Medium CAT-05

£165k

Reporting & Governance Overhead

£165,000 per annum · 8.8% of total leakage

Monthly contract reports, QBR packs, board summaries and compliance submissions consume approximately **480 person-hours per month** across the business. The majority of this time is spent collecting, formatting and reconciling information from multiple systems rather than analysing performance or making decisions.

REPORT TYPE	FREQUENCY	HOURS / CYCLE	ANNUAL COST	STATUS
Monthly contract reports	Monthly × 23	6.5	£89,700	Mostly manual
QBR packs	Quarterly × 8	14	£26,880	Manual assembly
Board summary	Monthly	12	£17,280	Semi-structured
H&S / compliance returns	Monthly	8	£11,520	Manual data pull
CAFM / KPI dashboards	Weekly	3.5	£19,620	Spreadsheet-based

Observation. The reporting workload is not disproportionate for a business of this size. The issue is the ratio of assembly time to analysis time. Stakeholders estimated that 70–80% of reporting effort is data gathering, formatting and reconciliation — leaving only 20–30% for actual insight, action-setting and decision-making.

Medium CAT-06

£100k

SLA Deductions & Reactive Penalties

£100,000 per annum · 5.3% of total leakage

Across 6 FM maintenance contracts, Hartwell incurred **£100k in SLA deductions and client-applied penalties** in the last 12 months. CAFM ticket analysis shows that 62% of deductions related to response-time failures rather than resolution failures — meaning the work was completed satisfactorily but the response or attendance evidence was missing or late.

Deduction breakdown

Response-time failures	£62,000
Repeat callout charges	£18,000

Root causes identified

- Attendance times not logged in CAFM at point of arrival
- Response evidence relies on engineer self-reporting

Evidence & reporting gaps	£12,000
Missed PPM completion	£8,000

- Priority classification inconsistencies between helpdesk and contract
- No automated SLA countdown or escalation trigger

SECTION 04

Efficiency Burden Map

Where administrative and operational burden is consuming the most capacity across the business — mapped by function and activity type.

Annual hours consumed by administrative burden

Total administrative burden across the business **9,600 hrs** / year

Context. 9,600 hours equates to approximately **5.3 full-time equivalent roles** spent on administrative production, formatting, evidence assembly and manual reporting. This is not unusual for a £45m M&E contractor — but it represents a significant proportion of the commercial and operational teams' available capacity. Reducing this burden by 30–40% through structured AI workflows would release the equivalent of 1.6–2.1 FTE back into value-adding commercial, technical and supervisory work.

SECTION 05

Recoverable Value Assessment

Not all leakage is equally recoverable. This section assesses which categories offer the greatest improvement potential through structured AI workflow implementation.

CATEGORY	ANNUAL LEAKAGE	ESTIMATED RECOVERY	RECOVERY VALUE	CONFIDENCE	TIMELINE
Missed commercial recovery	£620,000	40-55%	£248k-£341k	High	6–9 months
Aged WIP & CNI drag	£410,000	35-50%	£144k-£205k	High	3–6 months
Tender admin burden	£340,000	30-40%	£102k-£136k	High	3–6 months
Invoice blockers	£235,000	45-60%	£106k-£141k	Medium	6–9 months
Reporting overhead	£165,000	50-65%	£83k-£107k	High	3–6 months
SLA deductions	£100,000	25-40%	£25k-£40k	Medium	9–12 months
Total recoverable range	£1,870,000	38-52%	£708k-£970k		

£708k–£970k

This represents a 38–52% reduction in current leakage through structured workflow implementation across commercial capture, tender production, reporting and invoice readiness.

Estimated annual recoverable value	Recovery estimates are conservative and assume Phase 1 implementation across 2–3 priority workflows over 12 months. These figures feed directly into the KPI Framework (Deliverable 05) and the Phase 1 Implementation Proposal (Deliverable 07).

SECTION 06

Methodology & Data Sources

How this analysis was compiled and what evidence it draws on.

SOURCE	DETAIL	PERIOD
Financial data	Sage 200 CVR extract covering 23 live contracts. Includes WIP, CNI, invoiced, certified and debtor analysis by contract.	Oct 2024 – Mar 2026
Variation log	Commercial team's master variation spreadsheet. 142 events across 23 contracts. Includes status, value, notice date and submission date.	Oct 2024 – Mar 2026
CAFM export	Concept CAFM ticket export covering 6 FM maintenance contracts. 4,280 tickets. Includes response times, SLA status, deduction flags.	Apr 2025 – Mar 2026
Tender tracker	Estimating team's bid log. 67 submissions with outcome, value, hours logged and decline reasons.	Apr 2025 – Mar 2026
Stakeholder interviews	6 interviews: MD, Commercial Director, Estimating Lead, HSQE Manager, Finance Director, FM Operations Manager.	W/C 5 May 2026
Document review	12 tender packs, 8 RAMS, 6 variation submissions, 4 monthly reports, 3 QBR packs.	W/C 5 May 2026

Deliverable linkage. This analysis is Deliverable 02 of 07 from the Operational Intelligence Audit™. The maturity context for each domain is set out in Deliverable 01 (AI Maturity Scorecard). The prioritised improvement opportunities are ranked in Deliverable 03 (Opportunity Roadmap). The governance requirements for implementing improvements are defined in Deliverable 05 (Governance & Risk Framework). The phased implementation route and commercial model are set out in Deliverable 06 (12-Month Transformation Blueprint) and Deliverable 07 (Phase 1 Implementation Proposal). All seven deliverables should be read together.