ISSUE NO. 002
JULY 2026

DenLine Consults

— Building today for a better tomorrow. —

DENLINE CONSTRUCTION INSIGHTS

A Knowledge Series for a Stronger Built Environment

FEATURE STORY

BUILDING IT RIGHT THE FIRST TIME

The Role of Quality Assurance in Construction Projects



> "Quality is doing it right when no one is looking."



QUALITY IS A CHOICE, NOT A CHANCE.
Build it right the first time.

QUALITY BUILDS TRUST
Delivering projects that are safe, durable and reliable.

QUALITY REDUCES COSTS
Prevent defects, rework and unnecessary losses.

QUALITY ENSURES SAFETY
Protecting workers, users and the environment.

QUALITY DRIVES COMPLIANCE
Meeting standards, codes and client expectations.

QUALITY CREATES VALUE
Building assets that last for generations.

COMING IN THE NEXT ISSUE:
Site Planning and Setting Out – Laying the Foundation for Success.

VISIT OUR WEBSITE
www.denlineconsults.com

EMAIL US
info@denlineconsults.com

CALL US
0702232153

SCAN TO VISIT OUR WEBSITE

EDITORIAL NOTE



Dear Readers,

Welcome to *Issue No. 002* of *Denline Construction Insights.*

In our inaugural issue, we emphasized the importance of regulatory authority in construction – the framework that guides and protects our built environment. In this issue, we shift our focus to something that determines whether that framework is truly realized on the ground: **Quality Assurance.**

Building it right the first time is not just a slogan; it is a commitment to excellence, a responsibility to our clients, and a legacy we leave for future generations. Quality is what stands the test of time.

Through this issue, we explore what quality assurance really means, whose responsibility it is, practical steps to achieve it, and the real cost of getting it wrong.

At Denline Consults Limited, quality is at the heart of everything we do – from our designs and supervision to how we collaborate with clients and partners. We believe that when we build with integrity and attention to detail today, we create value, safety and sustainability for tomorrow.

Thank you for being part of this journey, I encourage you to read, share and apply the insights in this issue. Together, we can raise the bar and build a better future.

Let's keep building it right!

Dennis Paul Wanzira
Managing Director
Denline Consults Limited

> ***Quality is not an act, it is a habit. It is what we do when no one is looking.***

QUALITY CORNER

Quality should be **planned, built in, inspected** and **never assumed.** It is **everyone's responsibility.**



BUILDING IT RIGHT THE FIRST TIME

The Role of Quality Assurance in Construction Projects



> ***Quality is not something that is added to a project at the end— it is built into every stage, from the first sketch to the final handover. Every decision, every material, every inspection and every person involved contributes to the quality of the finished building.***

INTRODUCTION

When people think about quality in construction, they often imagine expensive materials or luxurious finishes. In reality, quality goes much deeper. It is about consistently meeting the required standards, specifications and client expectations while ensuring that every element of a project performs safely and reliably throughout its intended life.

Quality Assurance (QA) is the systematic process of planning, implementing and monitoring activities that prevent defects before they occur. Rather than waiting to identify problems after work has been completed, QA focuses on establishing procedures that ensure the work is carried out correctly from the very beginning.

In the construction industry, quality is everyone's responsibility. Clients, consultants, contractors, suppliers and regulatory authorities all play vital roles in ensuring that buildings are delivered safely, efficiently and in accordance with approved designs and recognised standards.

A project that embraces quality assurance benefits from improved safety, reduced rework, lower long-term maintenance costs, greater client satisfaction and enhanced public confidence.

QUALITY CORNER



> ***Every defect prevented during construction saves significantly more time and money than correcting it after completion.***



WHY THIS MATTERS

Wuality assurance is not only about protecting an investment—it is about protecting lives. Buildings are expected to serve communities for decades, and poor workmanship or inadequate quality management can have serious consequences, including structural failures, costly repairs, project delays and legal disputes.



Building it right the first time is always less expensive than correcting mistakes after construction.

> ***Excellence in construction is achieved through consistent quality, not occasional perfection.***

QUALITY ASSURANCE VS. QUALITY CONTROL

UNDERSTANDING THE DIFFERENCE

Quality Assurance (QA) and Quality Control (QC) are often used interchangeably, but they play very different roles in achieving a quality building.



	QUALITY ASSURANCE (QA)	QUALITY CONTROL (QC)
FOCUS	Process-oriented – Ensures the right processes are followed.	Product-oriented – Ensures the work meets the requirements.
TIMING	Before and during construction (Preventive).	During and after construction (Detective).
PURPOSE	To prevent defects by establishing systems, procedures and standards.	To identify defects in the work and correct them.
WHO	Everyone involved in the project (Client, Consultant, Contractor).	Inspectors, technicians, site supervisors, testers.
QUESTION	Are we doing the right things in the right way?	Are we getting the right results?

> *QA builds confidence in the process. QC confirms confidence in the product.*

THE GOAL IS THE SAME

While QA prevents problems, QC detects them. When both work hand in hand, the result is a project that meets the required standards, performs safely and satisfies the client.

REMEMBER:
You can inspect quality into a project, but you can only assure quality through good systems, planning and people.

KEY ROLES IN DELIVERING QUALITY

CLIENT Define quality requirements, provide adequate resources and choose competent professionals and contractors.

CONSULTANT Ensure designs are buildable, specifications are clear and site supervision is effective.

CONTRACTOR Implement quality plans, use qualified personnel, control materials and execute the work to specification.

CLERK OF WORKS / SITE SUPERVISOR
Monitor workmanship, inspect works, report deviations and ensure standards are maintained.

SUPPLIERS & SUBCONTRACTORS
Provide quality materials and services that meet project requirements and deliver on schedule.

QUALITY CORNER

Plan Quality, Build Quality, Assure Quality.

Quality is not a single action, it is a continuous process of planning, doing, checking and improving.

WHY QUALITY MATTERS

THE COST OF GETTING IT WRONG

Quality is not an expense; it is an investment. Poor quality leads to far more than just defects—it affects time, money, safety, reputation and the long-term performance of a building.



POOR QUALITY CAN RESULT IN:

PROJECT DELAYS
Rework and defects cause delays and extend project timelines.

HIGHER COSTS
Rectification, repairs and disputes cost more than doing it right the first time.

SAFETY RISKS
Poor workmanship and inferior materials can lead to accidents and failures.

LEGAL DISPUTES
Defects lead to claims, arbitration, litigation and loss of relationships.

POOR PERFORMANCE
Buildings with poor quality require more maintenance and have shorter life spans.

DAMAGED REPUTATION
Quality failures erode trust and affect future opportunities.

THE BENEFITS OF QUALITY

A strong quality culture delivers lasting value for everyone involved in the project.

SAFER BUILDINGS
Protects lives and property throughout the building's life.

LOWER LIFE CYCLE COST
Well-built projects cost less to maintain and operate over time.

ON-TIME DELIVERY
Good quality planning and control keep projects on schedule.

CLIENT SATISFACTION
Quality builds confidence and leads to repeat business and referrals.

COMPLIANCE & ACCEPTANCE
Meets regulatory requirements and passes inspections without delays.

LONG-TERM VALUE
Quality ensures durability, reliability and better return on investment.

BUILDING QUALITY STARTS WITH THE RIGHT MINDSET



- Do it right the first time.
- Follow standards and specifications.
- Use competent people.
- Plan carefully.
- Inspect continuously.
- Improve every day.

Quality is a habit, not an act.
Build it into your process. Live it on site. Deliver it always.

QUALITY CORNER



"Quality does not happen by accident. It is the result of intelligent effort, sincere intention and skilled execution."



"The bitterness of poor quality remains long after the sweetness of low price is forgotten."

COMMON CAUSES OF POOR WORKMANSHIP



Poor workmanship is rarely the result of a single mistake. It is usually the outcome of recurring issues that can be identified and corrected early.

RECOGNISING THESE CAUSES IS THE FIRST STEP TOWARDS PREVENTING DEFECTS AND DELIVERING QUALITY.

01 INADEQUATE SUPERVISION

Insufficient site supervision allows mistakes to go unnoticed and poor practices to continue.



02 UNSKILLED LABOUR

Untrained or inexperienced workers may not understand the correct methods or the importance of quality.



03 POOR QUALITY MATERIALS

Using substandard or non-compliant materials compromises the integrity, durability and performance of the finished work.



04 UNCLEAR DRAWINGS AND SPECIFICATIONS

Vague details or incomplete information lead to misinterpretation and incorrect execution.



05 LACK OF QUALITY PLANNING

Without a clear quality plan, standards, procedures and inspection activities may be overlooked or poorly implemented.



06 RUSHING THE WORK

Pressure to meet deadlines often results in shortcuts, overlooked processes and careless workmanship.



07 COST CUTTING

Reducing costs by cutting corners on materials, labour or supervision always leads to higher costs later.



08 POOR SITE MANAGEMENT

Disorganised sites, poor storage of materials and inadequate housekeeping contribute to defects and damage.



09 LACK OF INSPECTION AND TESTING

Failing to inspect and test during construction allows defects to remain hidden.



10 POOR COMMUNICATION

Breakdowns in communication among project stakeholders lead to errors, misunderstandings and rework.



THE BOTTOM LINE

Every defect has a cause. Addressing these causes early, through planning, competent people, proper supervision and good site management, is the key to delivering quality projects.

QUALITY CORNER

"Most quality problems are predictable and preventable. Identify the cause, take corrective action and make it right."

"Quality is everyone's responsibility. When we do the right things for the right reasons, good workmanship becomes our standard."

ROLES OF THE CLIENT, CONSULTANT, CONTRACTOR, AND CLERK OF WORKS

EVERY ROLE. ONE GOAL: QUALITY

Quality is delivered when every stakeholder understands their responsibilities and performs their duties with competence, integrity and commitment.



01 THE CLIENT / DEVELOPER

Provides the vision, resources and leadership.

- Define quality requirements, standards and performance expectations.
- Provide adequate resources and realistic budget and time.
- Appoint competent professionals and contractors.
- Ensure clear communication and timely decision making.
- Review reports and ensure quality is prioritised over cost savings.



02 THE CONSULTANT (ARCHITECT / ENGINEER)

Provides design intent, technical guidance and oversight.

- Produce clear, coordinated and buildable designs.
- Provide complete specifications and performance criteria.
- Advise the client on quality implications and solutions.
- Review contractor's method statements, shop drawings and material submittals.
- Conduct site inspections and ensure compliance with drawings, specifications and standards.



03 THE CONTRACTOR

Executes the work in accordance with the contract.

- Develop and implement a robust quality plan.
- Mobilise competent personnel and suitable equipment.
- Procure and use quality materials that meet specifications.
- Follow approved methods, drawings and procedures.
- Conduct internal quality checks and rectify defects.
- Maintain a clean, safe and well-organised site.



04 THE CLERK OF WORKS / SITE SUPERVISOR

Represents the client's interests on site.

- Monitor the progress and quality of the works on site.
- Check materials, workmanship and installations as work proceeds.
- Verify that inspections and tests are carried out.
- Report deviations, defects and non-conformance promptly.
- Ensure compliance with drawings, specifications, approvals and site instructions.



QUALITY CORNER

"Great buildings are not the result of chance; they are the result of every stakeholder doing their role, every time."

REMEMBER:

Respect, communication and accountability between all parties are the foundation of a successful and quality project.

KEY TO SUCCESS

- Understand your role and limitations.
- Communicate clearly and regularly.
- Coordinate and collaborate effectively.
- Document decisions and instructions.
- Take ownership and be accountable.
- Strive for continuous improvement.

**ONE TEAM.
ONE STANDARD.
ONE QUALITY.**

Quality is not an individual effort.
It is a continuous, collective commitment to doing the right things, the right way, at every stage of the project.

"When everyone knows their role and does it well, quality is not an act, it becomes a habit, and excellence becomes the result."

MATERIAL TESTING AND QUALITY

Test Today. Build With Confidence. Last For Generations.

The strength, durability and safety of a building depend on the quality of the materials used. Material testing verifies that the materials meet the required standards and are fit for purpose before, during and after use on site. Good materials produce good buildings.



COMMON CONSTRUCTION MATERIALS THAT SHOULD BE TESTED

CONCRETE
Test for workability (slump), compressive strength, consistency and durability.



STEEL REINFORCEMENT
Test for yield strength, tensile strength, bend test and chemical composition.



BLOCKS & BRICKS
Test for compressive strength, water absorption, dimension and visual defects.



AGGREGATES (SAND & STONE)
Test for grading, silt content, moisture content, specific gravity and flakiness index.



CEMENT
Test for fineness, setting time, soundness and compressive strength.



WATER
Test for pH, chlorides, sulphates and other harmful impurities.



PAINTS & COATINGS
Test for viscosity, drying time, adhesion, covering power and resistance.



WHY MATERIAL TESTING MATTERS

ENSURES SAFETY
Prevents structural failures and protects lives and property.

ENSURES COMPLIANCE
Meets standards, specifications and regulatory requirements.

SAVES COSTS
Prevents rework, repairs, delays and unnecessary expenses.

IMPROVES QUALITY
Delivers stronger, durable and reliable structures.

SUPPORTS TIMELY DELIVERY
Reduces delays caused by defects and material rejections.

KEY PRINCIPLES OF MATERIAL QUALITY

- Source materials from reputable and approved suppliers.
- Ensure materials are accompanied by test certificates.
- Inspect materials on delivery before acceptance.
- Store materials properly to prevent damage and deterioration.
- Test critical materials at approved laboratories.
- Keep and trace test results for every batch or sample.
- Do not use materials that do not meet specifications.



QUALITY CORNER

"You cannot inspect quality into a building. It must be tested into the materials and built into the process."

GOOD PRACTICES FOR MATERIAL QUALITY

- Plan material requirements early and accurately.
- Use approved suppliers and quality brands.
- Test before use, not after installation.
- Maintain complete records of all tests and approvals.
- Train site staff on proper material handling and storage.
- Reject and replace materials that do not meet specifications.

"Quality materials are the foundation of every great building. Test them well today, and they will stand the test of time."

INSPECTION AND TESTING THROUGHOUT CONSTRUCTION

— CHECK. VERIFY. ENSURE QUALITY AT EVERY STAGE. —

Quality cannot be achieved by testing at the end. It is built through continuous inspection and testing at every stage of construction. Regular checks help identify issues early, ensure compliance, and keep the project on track.



KEY STAGES & MAIN INSPECTIONS

01 PRE-CONSTRUCTION

- Review drawings, specifications and method statements.
- Verify materials submittals and approvals.
- Inspect site conditions and setting out.



02 EARTHWORKS & FOUNDATIONS

- Check excavation dimensions and levels.
- Inspect soil bearing and compaction.
- Test concrete (slump, cubes) before and after placement.



03 STRUCTURAL WORKS

- Inspect reinforcement (size, spacing, cover & tying).
- Check formwork alignment and stability.
- Test concrete strength (cubes/cylinders).



04 MASONRY & WALLING

- Check block/brick quality and moisture.
- Inspect mortar mix and joint thickness.
- Check plumb, level and alignment.



05 PLASTERING & FINISHES

- Inspect surface preparation.
- Check plaster thickness and finish quality.
- Verify curing and drying.



06 MEP INSTALLATION

- Inspect pipework, conduits and fixings.
- Test for leaks and pressure.
- Verify electrical cabling, earthing and terminations.



07 PRE-COMPLETION & HANDOVER

- Final inspections and snagging.
- Test all systems and installations.
- Verify documentation and warranties.



INSPECTION CHECKPOINTS

LOOK	MEASURE	TEST	RECORD	RECTIFY
Visually check workmanship, materials and finishes.	Check dimensions, levels, alignment, and tolerances.	Carry out required tests on materials and installations.	Document findings with photos, reports and forms.	Report defects immediately and ensure correction.

TYPES OF TESTS COMMONLY CARRIED OUT

- **Concrete:** Slump, cube/cylinder strength, temperature.
- **Soil:** Compaction, bearing capacity, moisture content.
- **Steel:** Tensile test, bend test, weld quality.
- **Masonry:** Compressive strength of blocks/bricks.
- **Waterproofing:** Water ponding test.
- **Electrical:** Continuity, insulation resistance, polarity.
- **Plumbing:** Pressure test, leak test.



WHY CONTINUOUS INSPECTION & TESTING?

Prevents defects and failures	Ensures compliance with standards	Improves efficiency and productivity	Reduces rework and extra costs	Delivers safe, durable and quality buildings

BEST PRACTICES

- Plan inspections and tests before starting each stage.
- Use qualified and certified personnel.
- Use calibrated equipment and approved test methods.
- Follow the specification and applicable standards.
- Keep accurate and up-to-date records.
- Act on findings immediately and verify corrections.



QUALITY IS BUILT DAY BY DAY

Every inspection is an investment in the long-term performance, safety and value of the project.

"Do it right.
Do it on time.
Do it at every stage."

"Quality is not an act, it is a habit. Inspect today, protect tomorrow."

DOCUMENTATION AND QUALITY RECORDS

GOOD RECORDS. CLEAR EVIDENCE. CONFIDENT OUTCOMES.

If it isn't documented, it didn't happen. Proper documentation provides clear evidence that quality requirements were met throughout the project. It supports decision-making, ensures compliance, reduces disputes and protects all parties.



WHY DOCUMENTATION MATTERS

PROVIDES EVIDENCE
Shows that quality activities were performed and requirements were met.

ENSURES COMPLIANCE
Demonstrates adherence to contracts, standards and regulatory requirements.

REDUCES DISPUTES
Clear records help resolve questions and claims quickly and fairly.

SUPPORTS DECISIONS
Accurate information helps in planning, monitoring and improving performance.

BUILDS TRUST
Well-kept records build confidence among clients, consultants, contractors and stakeholders.

KEY QUALITY RECORDS TO MAINTAIN

APPROVALS & SUBMITTALS
Shop drawings, method statements, material submittals, samples and approvals.

INSPECTION REPORTS
Records of site inspections, ITPs (Inspection & Test Plans) and checklists.

TEST REPORTS
Material test results, concrete cube results, soil tests and other test certificates.

PHOTOS & VIDEOS
Progress photos, critical activities, hidden works and defect records.

NON-CONFORMANCE REPORTS (NCRs)
Records of defects, corrective actions and verification.

MATERIAL DELIVERY RECORDS
Delivery notes, batch numbers, certificates and traceability information.

DAILY SITE RECORDS
Daily reports, workforce, plant & equipment, weather and remarks.

WARRANTIES & GUARANTEES
Product warranties, installation certificates and guarantee documents.

MEETING MINUTES
Site meetings, progress meetings and quality review meetings.

HANDOVER DOCUMENTS
As-built drawings, O&M manuals, test certificates and handover checklists.

GOOD DOCUMENTATION PRACTICES

- Create and follow a record-keeping plan.
- Use standard forms and templates.
- Record information accurately and promptly.
- Store records in an organised and secure system (digital and/or hard copy).
- Ensure documents are legible, dated, signed and approved.
- Control document revisions and distribution.
- Keep records up to date and easy to retrieve.
- Back up digital records regularly.
- Retain records for the required period.



RECORD KEEPING FLOW

CREATE / COLLECT
Generate or collect records at the source.

REVIEW / VERIFY
Check for accuracy, completeness and compliance.

STORE / ORGANISE
File systematically for easy access and security.

PROTECT / RETAIN
Protect from loss, damage and unauthorised access.

RETRIEVE / USE
Use records for decision-making, closeout and future reference.

QUALITY CORNER

"Good records are not paperwork. They are proof of quality and professionalism."

REMEMBER

Document the quality you build today; it will stand as your evidence tomorrow.

WELL-KEPT RECORDS TODAY. STRONGER PROJECTS TOMORROW.

"Quality is built into the process and proven through the records."

COST OF POOR QUALITY

— CHEAP TODAY. EXPENSIVE TOMORROW. —

Poor quality doesn't just affect the building, it affects the budget, the schedule, relationships and the reputation of everyone involved. Investing in quality always **costs less than fixing failures.**



WHAT IS THE COST OF POOR QUALITY?

It is the extra cost incurred when work is not done right the first time.

It includes both visible costs (repairs, rework) and hidden costs (delays, disputes, loss of trust).

It reduces profits, wastes resources and can even lead to legal claims and loss of business.

DIRECT CONSEQUENCES

Rework and Repairs
Fixing defects means more labour, materials, equipment and time.

Project Delays
Rework and disputes cause delays, leading to extension costs and penalties.

Cost Overruns
Extra costs from rework, idle resources and corrective actions increase the final project cost.

Reduced Life of the Asset
Poor workmanship and materials lead to early deterioration and frequent maintenance.

Damage to Reputation
Clients remember problems more than successes. Reputation loss affects future opportunities.

HIDDEN COSTS (OFTEN OVERLOOKED)

Disputes and claims between parties.

Loss of productivity due to rework and disruptions.

Impact on client satisfaction and future business.

Legal costs, settlements and arbitration.

Low morale among workers and project teams.

THE REAL IMPACT IN NUMBERS



1. Every $1 spent on prevention can save **$5 to $10** in rework and failure costs.
2. Rework can consume **5% to 20%** of total construction costs.
3. Timely defect correction is up to **100 times** cheaper than fixing the same defect after hand-over or in use.

EXAMPLES OF COST OF POOR QUALITY

DEFECT / ISSUE	IMMEDIATE COST	POTENTIAL LONG-TERM COST
Cracking due to poor concrete quality	Replastering, crack injection	Water ingress, corrosion, structural damage
Leakage from poor waterproofing	Re-sealing, tile removal and re-installation	Mould, deterioration, occupant health issues
Poor brickwork and alignment	Rebuilding sections	Weak structure, costly strengthening
Use of substandard materials	Replacement of materials	Premature failure, frequent repairs
Inadequate inspections and records	Extra inspections, document recovery	Disputes, claims, project delays

INVEST IN QUALITY, SAVE FOR TOMORROW

- Do it right the first time.
- Quality costs less than failure.
- Prevention saves time and money.
- Quality builds stronger, safer and longer lasting projects.
- Quality protects your reputation and future.

QUALITY CORNER



"The bitterness of poor quality remains long after the sweetness of low price is forgotten."

– Benjamin Franklin

"Cutting corners in quality today builds problems you pay for tomorrow."

BEST PRACTICES FOR DELIVERING QUALITY PROJECTS

PLAN RIGHT. DO RIGHT. DELIVER EXCELLENCE.

Quality is not accidental; it is the result of good planning, competent people, sound processes and a culture of excellence. Adopt these best practices on every project.



01 CLEAR QUALITY OBJECTIVES
Define quality requirements, standards and acceptance criteria at the start and communicate to all stakeholders.

02 COMPETENT & QUALIFIED TEAM
Engage experienced professionals, skilled workforce and certified suppliers for every critical activity.

03 THOROUGH PLANNING
Plan the work, sequence activities, allocate resources and coordinate to avoid rework and conflicts.

04 QUALITY MATERIALS
Use approved, tested and certified materials from reputable suppliers. Never compromise on material quality.

05 EARLY REVIEW OF DESIGN & DRAWINGS
Review drawings, specifications and method statements early to identify and resolve issues before construction.

06 METHOD STATEMENTS & ITPs
Prepare method statements and Inspection & Test Plans (ITPs) for all critical work and follow them strictly.

07 INSPECTION & TESTING
Inspect and test at every stage. Verify before covering up and release only when it meets the standards.

08 DOCUMENT EVERYTHING
Keep accurate, complete and up-to-date records of approvals, inspections, test results, and site instructions.

09 EFFECTIVE COMMUNICATION
Maintain open, timely and clear communication among all project stakeholders.

10 CONTINUOUS TRAINING & AWARENESS
Invest in training, toolbox talks and quality awareness for workers and site teams.

11 NON-CONFORMANCE MANAGEMENT
Identify issues early, correct immediately and prevent recurrence through root cause analysis.

12 LEADERSHIP & QUALITY CULTURE
Leadership commitment and a culture that values quality ensure consistent delivery of excellent results.

KEY SUCCESS FACTORS

RIGHT QUALITY, RIGHT TIME
Deliver the right quality at each stage, not just at the end.

EVERYONE IS RESPONSIBLE
Quality is everyone's job, not just the quality manager's.

MEASURE & MONITOR
Use indicators and regular audits to track performance and drive improvement.

DO IT ONCE, DO IT RIGHT
Doing it right the first time saves time, money and reinforces trust.

RISK-BASED APPROACH
Focus on critical activities and high-risk areas that affect safety and quality.

COMMIT TO CONTINUOUS IMPROVEMENT
Learn from every project and strive to raise the standard higher each time.

QUALITY CHECKLIST (QUICK REFERENCE)

- [x] Quality objectives are defined and communicated
- [x] Competent team and resources are in place
- [x] Approved materials are used and tested
- [x] ITPs and method statements are followed
- [x] Inspections and tests are done and recorded
- [x] Non-conformities are corrected and closed out
- [x] Records are complete and securely filed
- [x] Lessons learned are captured

THE QUALITY ADVANTAGE

- Higher client satisfaction
- Fewer delays and reworks
- Lower costs and waste
- Stronger safety performance
- Better reputation and more work

QUALITY CORNER

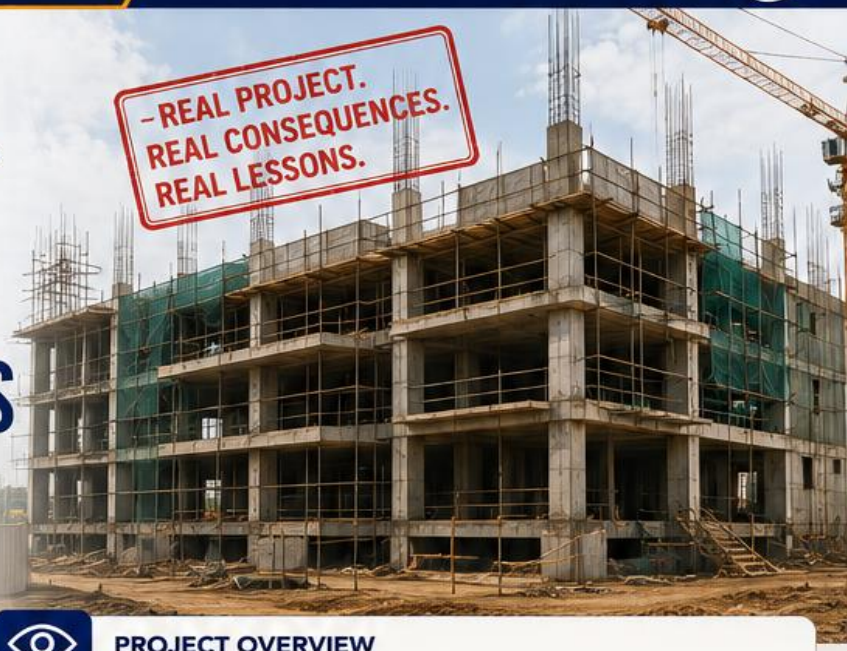
> *Quality is never an accident; it is always the result of intelligent effort, sincere intention and skillful execution.*
>
> – John Ruskin

> *A quality project is not judged by what you build, but by how well it performs for years to come.*

CASE STUDY
INVESTIGATION REPORT

THE HIDDEN COST OF CUTTING CORNERS

HOW A SMALL DECISION LED TO MAJOR LOSSES



PROJECT SUMMARY

Project Type:	6-Storey Commercial Office Building
Location:	Urban Area
Client:	Private Investor
Consultant:	Architectural & Engineering Firm
Contractor:	Medium-sized Building Contractor
Contract Sum:	UGX 5.2 Billion
Contract Duration:	10 Months
Project Start Date:	15 January 2025

BACKGROUND

During the pre-construction phase, the contract sum was reduced through value engineering. While some savings were justified, several critical quality assurance measures were either minimized or excluded to cut costs and speed up the programme.

The consultant raised concerns, but the client insisted that the contractor "find a way" within the budget.

QUALITY ASSURANCE MEASURES OVERLOOKED AT THE OUTSET

- ✗ Regular concrete cube testing programme
- ✗ Third-party material verification
- ✗ Reinforcement inspection before concrete placement
- ✗ Site supervision and inspection frequency
- ✗ Proper documentation and record keeping
- ✗ Worker skills assessment and training

PROJECT OVERVIEW

The project was a modern six-storey office block with basement parking, ground floor commercial spaces, and upper floor offices.

The client wanted a quality building but also emphasized cost savings and a fast completion time to secure tenants early and improve return on investment.

COST PRESSURE
Reduce costs where possible to improve profitability.

TIME PRESSURE
Complete the project quickly to avoid market delays.

COMPETITIVE TENDER
Contract was awarded based mainly on the lowest price.

QUALITY COMPROMISE?
Several quality assurance steps were considered unnecessary or costly.

PROJECT TIMELINE (INITIAL PLAN)

JAN | FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT

MOBILIZATION & PREPARATION
Site setup, submittals, approvals

FOUNDATION & BASEMENT WORKS
Excavation, foundations, basement slab

SUPERSTRUCTURE WORKS
Columns, slabs, masonry, structure to roof level

FINISHES & COMPLETION
Finishes, MEP, testing, handover

THE EXPECTATION
With the above plan, the building was expected to be completed within 10 months, on budget and to acceptables quality standards.

> *"At first, everything seemed to be going according to plan... But beneath the surface, small compromises were setting the stage for big problems."*



CASE STUDY | INVESTIGATION REPORT

THE HIDDEN COST OF CUTTING CORNERS

HOW A SMALL DECISION LED TO MAJOR LOSSES

WHAT WENT WRONG?

A series of shortcuts created a chain reaction of failures that affected time, cost, quality and trust.



WHAT HAPPENED? – THE TIMELINE

HERE IS HOW ONE SHORTCUT LED TO ANOTHER...

WEEK 1–2 COST CUTTING DECISIONS
Client instructed contractor to reduce costs. Several quality assurance activities were deemed "not necessary".

WEEK 3–6 NO MATERIAL & CONCRETE TESTING
Concrete cubes were not cast or tested. Steel and cement were accepted without proper third-party verification.

WEEK 6–10 INSPECTIONS SKIPPED
Reinforcement inspections before concreting were skipped to save time. Wrong bar sizes and poor laps went unnoticed.

WEEK 8–14 POOR RECORD KEEPING
Site records, test results and inspection reports were not maintained. Handover documents were incomplete.

WEEK 14–18 DEFECTS START APPEARING
Cracks on beams and slabs, honeycombing in columns, and uneven plastering were reported by the client.

WEEK 18–26 DELAYS & REWORK
Sections had to be hacked, reworked and strengthened. Additional tests confirmed low concrete strength.

WEEK 26+ DISPUTES & CLAIMS
Disputes arose between client and contractor over responsibility. Project was delayed and relationships damaged.

ROOT CAUSE ANALYSIS – WHY IT HAPPENED

- **PEOPLE**
  - Lack of quality awareness
  - Inadequate supervision
  - Pressure to cut costs
- **PROCESS**
  - QA procedures not followed
  - Inspections skipped
  - Poor communication
- **MATERIALS**
  - No verification of materials
  - Substandard materials used
  - No test results
- **DOCUMENTATION**
  - No proper record keeping
  - Missing test reports
  - Poor traceability

→ **POOR QUALITY OUTCOMES**
Delays, Rework, Extra Cost, Disputes & Loss of Trust

WARNING SIGNS THAT WERE IGNORED

- ⊗ No concrete cube test results
- ⊗ No reinforcement inspection reports
- ⊗ No third-party material test certificates
- ⊗ Irregular site supervision
- ⊗ Missing or incomplete records
- ⊗ Unrealistic construction programme

WHAT WE FOUND – EVIDENCE ON SITE



HONEYCOMBING & POOR FINISH
Poor compaction due to rushing and inadequate supervision.



POOR REINFORCEMENT LAPS
Insufficient lap lengths and wrong bar sizes used in several locations.



CRACKS IN STRUCTURAL ELEMENTS
Early cracking in beams and slabs indicating quality and design risks.



UNTREATED/POOR QUALITY MATERIALS
Reinforcement showing rust; no material test certificates.



MISSING SITE RECORDS
Incomplete test records, inspection reports and daily site reports.



EXTENSIVE REWORK
Hacking of concrete members to repair defects caused time and money.

IMPACT ON THE PROJECT

TIME IMPACT
Original duration: 10 months
Actual duration: 16 months
Delay: 6 months (60%)

COST IMPACT
Original contract sum: UGX 5.2 Billion
Variation & rework cost: UGX **1.28 Billion (24.6%)**
Total cost overrun: **UGX 1.28 Billion**

QUALITY IMPACT
Reduced structural life
Increased maintenance
Risk of future failures
Lower asset value

RELATIONSHIP IMPACT
Loss of trust
Disputes and claims
Damaged reputation
Strained business relationships

LEGAL & CONTRACTUAL CONSEQUENCES
Claims, counter claims and arbitration proceedings led to additional legal costs and time.

> *"Cutting corners may save money today, but it always costs much more tomorrow."*

CASE STUDY | INVESTIGATION REPORT

THE HIDDEN COST OF CUTTING CORNERS

HOW A SMALL DECISION LED TO MAJOR LOSSES

LESSONS FOR STRONGER PROJECTS

The right quality decisions today protect your project, your budget and your reputation tomorrow.



ROOT CAUSE ANALYSIS – FINDINGS

Using the **5 Whys** method, we traced the problem to **system failures**, not just individual mistakes.

WHY 1 – **Why did defects occur?**
Because quality assurance activities were skipped.

WHY 2 – **Why were QA activities skipped?**
To save time and reduce costs.

WHY 3 – **Why was there pressure to cut costs?**
Client focused on lowest initial price.

WHY 4 – **Why was lowest price prioritized?**
Lack of understanding of the true cost of poor quality.

WHY 5 – **Why was there a lack of understanding?**
No clear quality culture and poor communication of quality requirements.

ROOT CAUSE: Weak quality management system and short-term cost mindset.

WHAT SHOULD HAVE BEEN DONE

PLAN QUALITY FROM THE START
Define quality objectives, standards and inspection & test plans (ITPs) at project inception.

TEST MATERIALS & CONCRETE
Carry out regular concrete cube tests and verify materials with proper test certificates.

INSPECT BEFORE YOU PROCEED
Inspect reinforcement, formwork and embedded items before concrete placing.

KEEP ACCURATE RECORDS
Maintain complete site records, test results, inspection reports and daily site reports.

COMPETENT SUPERVISION
Ensure experienced site supervision and ongoing training for site teams.

COMMUNICATE & ENGAGE
Maintain open communication between client, consultant and contractor.

KEY TAKEAWAYS

- Quality starts with leadership and a clear commitment.
- Plan quality, not just the work.
- Inspect, test and verify every critical step.
- Document everything. If it's not recorded, it didn't happen.
- Involve the right people at the right time.
- Fix small issues early before they become big problems.
- Good quality delivers value, trust and long-term savings.

> *"Quality is not expensive; it is priceless insurance."*

FINANCIAL IMPACT SUMMARY

	COST OF PREVENTION (Doing it Right)		COST OF FAILURE (Cutting Corners)
Quality Planning & ITPs	UGX 25 Million	Rework & Repairs	UGX 480 Million
Material & Concrete Testing	UGX 45 Million	Project Delay (6 months)	UGX 420 Million
Inspections & Supervision	UGX 40 Million	Additional Materials & Labour	UGX 240 Million
Documentation & Records	UGX 15 Million	Professional & Legal Fees	UGX 80 Million
Training & Awareness	UGX 15 Million	Loss of Reputation & Future Work	UGX 60 Million
TOTAL INVESTMENT	**UGX 140 Million**	**TOTAL LOSS**	**UGX 1.28 Billion**

DIFFERENCE

Extra Cost Incurred Due to Poor Quality

UGX **1.14 BILLION**

(Over 8 times more than the cost of prevention!)

Investing UGX 140 Million in quality assurance could have prevented an additional loss of UGX 1.14 Billion and 6 months of delays.

CORRECTIVE ACTIONS TAKEN

- Engaged independent quality auditor.
- Carried out structural assessment.
- Repaired and strengthened affected elements.
- Revised quality management system.
- Re-trained site team and subcontractors.
- Implemented strict inspection & testing regime.
- Improved documentation and reporting.

The project was completed successfully, but the lessons came at a very high price.

> *"Quality is remembered long after the cost of doing it right has been forgotten."*

PROFESSIONAL INSIGHT

EXPERT PERSPECTIVES. PRACTICAL WISDOM.

Quality assurance is not just a technical requirement; it is a professional responsibility.
Here our experts share their insights on what it takes to deliver quality that lasts.



> *Quality is doing the right thing when no one is looking.*
>
> – Henry Ford

ARCHITECT'S PERSPECTIVE

Design for quality from the start.

Good design anticipates how a building will be built, used and maintained. Quality begins long before construction starts.

KEY FOCUS AREAS

- Clarity and completeness of drawings
- Constructability review
- Material selection
- Coordination of disciplines
- Design compliance with codes & standards

ENGINEER'S PERSPECTIVE

Build it right, build it safe.

Quality in structure is non-negotiable. It protects lives, assets and ensures the building stands the test of time.

KEY FOCUS AREAS

- Structural calculations and detailing
- Material quality & testing
- Reinforcement inspection
- Concrete quality control
- Compliance with standards

QUANTITY SURVEYOR'S PERSPECTIVE

Quality is more than cost.

The true cost of a project includes the cost of doing it right. Prevention is always more economical than failure.

KEY FOCUS AREAS

- Accurate cost planning
- Quality-related budgeting
- Value for money
- Life-cycle cost consideration
- Cost of poor quality awareness

CONTRACTOR'S PERSPECTIVE

Our workmanship is our signature.

It is the daily actions on site that determine the quality of a project. Commitment to standards and discipline delivers excellence.

KEY FOCUS AREAS

- Skilled and motivated team
- Method statements and work plans
- Site supervision
- Quality control checks
- Continuous improvement

WHAT PROFESSIONALS AGREE ON

- Quality is everyone's responsibility, not just the quality manager's.
- Early collaboration among all professionals prevents costly mistakes.
- Clear communication and documentation are the backbone of quality.
- Investing in quality saves money, time and protects reputation.
- A quality culture is built by leadership and lived by the whole team.

EXPERT TIP

Quality is not an act, it is a habit created by consistent actions. Make it part of your daily routine on every project, every time.

> *Excellence is never an accident.*
> *It is always the result of high intention, sincere effort, intelligent direction and skillful execution.*
>
> *– Aristotle*

CONSTRUCTION TIP OF THE WEEK



WATERPROOFING:
A SMALL STEP THAT PREVENTS A BIG PROBLEM

Water is one of the biggest enemies of any building. Good waterproofing protects your structure, finishes, health and investment for years to come.

WHY IT MATTERS

- Prevents leakages and dampness
- Protects structural elements from deterioration
- Extends the life of your building
- Saves money on repairs and maintenance
- Improves indoor comfort and health

COMMON MISTAKES TO AVOID

- **Skipping waterproofing to save cost.** This often leads to expensive repairs.
- **Using the wrong material for the wrong area.** Not all products work everywhere.
- **Poor surface preparation.** Dirt, dust or moisture will cause failure.
- **Incorrect application.** Wrong thickness, missed corners or rushed work.
- **Covering up without testing.** Undetected leaks become hidden problems.



A small leak today can become a big headache tomorrow.

BEST PRACTICES

01 PREPARE WELL
Ensure the surface is clean, level and dry.

02 USE QUALITY MATERIALS
Choose reliable products suitable for the area.

03 APPLY CORRECTLY
Follow the right method, thickness and number of coats.

04 FOCUS ON CRITICAL AREAS
Pay special attention to joints, corners and penetrations.

05 TEST FOR LEAKS
Always carry out a water test and rectify any defects.

06 DOCUMENT YOUR WORK
Keep records of materials used and test results.

QUICK CHECKLIST

Before you move on, check these key points:

- ☑ Surface is clean, dry and free from dust.
- ☑ All cracks and honeycombs are properly repaired.
- ☑ Correct waterproofing material is used.
- ☑ Membranes or coatings are applied as per manufacturer's instructions.
- ☑ Corners, joints, and penetrations are properly sealed.
- ☑ Water test is done before covering up.
- ☑ Work is inspected and approved.

REMEMBER
It's easier and cheaper to waterproof correctly the first time than to fix a leak later!

> *"Good waterproofing is not a luxury, it is an essential part of quality construction."*



MYTH VS REALITY

Separating Fact from Fiction in Quality Assurance



Misunderstandings about quality can lead to poor decisions, rework, delays and unnecessary costs.

Let's set the record straight.

	THE MYTH	THE REALITY
01	**QUALITY IS TOO EXPENSIVE.** Investing in quality assurance increases project costs.	**QUALITY SAVES MONEY.** Prevention is far cheaper than rework, repairs, delays and disputes.
02	**WE DON'T HAVE TIME FOR QUALITY CHECKS.** Inspections and testing slow down the project.	**QUALITY KEEPS YOU ON SCHEDULE.** Finding problems early prevents delays caused by rework and failures later.
03	**INSPECTION IS THE QUALITY MANAGER'S JOB.** Quality is someone else's responsibility.	**QUALITY IS EVERYONE'S JOB.** Every professional and worker contributes to the final quality of the project.
04	**IF IT LOOKS GOOD, IT IS GOOD.** Appearance means the work is of good quality.	**APPEARANCE CAN BE DECEIVING.** Only proper testing, inspection and documentation confirm real quality.
05	**CHEAP MATERIALS DO THE SAME JOB.** All materials are more or less the same.	**QUALITY MATERIALS DELIVER LASTING PERFORMANCE.** Using the right materials ensures safety, durability and lower maintenance.
06	**EXPERIENCED WORKERS DON'T NEED PROCEDURES.** Experience is enough to guarantee quality.	**PROCEDURES SUPPORT CONSISTENCY.** Clear methods and standards help even experienced teams deliver reliable, repeatable results.

KEY TAKEAWAY

Quality is not a luxury.
It is a mindset, a process and a commitment that delivers safe, durable, cost-effective and successful projects.

> *"The truth about quality today builds the success of your project tomorrow."*

DID YOU KNOW?

SURPRISING FACTS ABOUT QUALITY IN CONSTRUCTION



Quality is more than meeting standards—it drives performance, value and the long-term success of every project. Here are some facts that may surprise you.

01 | QUALITY PAYS BACK

For every $1 spent on quality management, organizations can save between $5 and $20 in rework and failure costs.

Source: ASQ (American Society for Quality)

02 | EARLY DECISIONS MATTER MOST

Up to 80% of a project's quality is determined during the design phase, long before construction begins.

Source: Project Management Institute (PMI)

03 | PREVENTION IS FAR CHEAPER

The cost to fix a defect can be 1 to 10 times higher after construction, and up to 100 times higher after handover.

Source: Construction Industry Institute (CII)

04 | MOST FAILURES ARE AVOIDABLE

More than 90% of construction failures are due to human error, poor planning and inadequate quality control.

Source: Building Research Establishment (BRE)

05 | DOCUMENTATION BUILDS TRUST

Well-documented projects have fewer disputes and are 30% more likely to be completed on time and within budget.

Source: KPMG – Global Construction Survey

06 | POOR QUALITY HURTS PROFITS

Quality-related problems can consume 5–15% of total project costs, directly affecting profitability.

Source: McKinsey & Company

07 | QUALITY BUILDS REPUTATION

Organizations with a strong quality culture enjoy 2 times more repeat business and higher client satisfaction.

Source: Deloitte – Global Quality Report

08 | QUALITY EXTENDS BUILDING LIFE

Well-constructed and well-maintained buildings can last 2 to 3 times longer than poorly constructed ones.

Source: World Green Building Council (WorldGBC)

DID YOU KNOW?

According to industry studies, up to **70%** of waste in construction is linked to rework, remediation and poor quality.

Do it right the first time. **Quality** is everyone's responsibility and everyone's benefit.

> *Quality is not an act, it is a habit. It is the result of high intention, sincere effort, intelligent direction and skillful execution.*
>
> – William A. Foster

QUOTE OF THE WEEK

> *Quality is never an accident. It is always the result of high intention, sincere effort, intelligent direction and skillful execution.*
>
> – William A. Foster



THOUGHT TO REFLECT

Every decision we make on site today shapes the performance, safety and reputation of our projects tomorrow.
Let's choose quality—every time.

LOOKING AHEAD

In our next issue, we continue the conversation on quality with a focus on one of the most critical stages of any project.

COMING NEXT
ISSUE NO. 003
AUGUST 2026

FEATURE TOPIC

QUALITY CONTROL ON SITE

BUILDING RIGHT, EVERY DAY

- Practical steps for daily quality control
- Key inspections at every stage
- Tools and checklists that work
- Building a culture of accountability

WHAT TO EXPECT

Actionable insights, real-world examples, practical tools and professional guidance to help you deliver quality with confidence.

WHO IT'S FOR

Clients, project managers, professionals, site teams and anyone committed to building better, safer and smarter.

OUR COMMITMENT

To provide valuable knowledge that empowers better decisions, stronger performance and lasting impact.

WE VALUE YOUR FEEDBACK!
What topics would you like us to cover?
Share your thoughts with us.

Email us at
info@denlineconsults.com
We'd love to hear from you.

SCAN TO VISIT
OUR WEBSITE

ABOUT DENLINE CONSULTS LIMITED

Engineering Excellence. Building Value. Shaping a Better Tomorrow.



OUR PURPOSE
To deliver innovative, sustainable and high-quality solutions that transform ideas into enduring value.

OUR PROMISE
Professionalism, integrity and excellence in every project we undertake.

WHO WE ARE

Denline Consults Limited is a professional engineering, architecture and project management firm providing integrated solutions across the built environment. We serve public and private sector clients with creativity, technical competence and a commitment to quality that stands the test of time.

INTEGRATED EXPERTISE
A multidisciplinary team offering end-to-end solutions under one roof.

QUALITY FOCUSED
We adhere to international standards and best practices to ensure superior outcomes.

SUSTAINABLE APPROACH
We design and build with sustainability, efficiency and the future in mind.

CLIENT PARTNERSHIP
We build lasting relationships through transparency, communication and trust.

OUR CORE SERVICES

ARCHITECTURAL DESIGN
Creative, functional and context-responsive design solutions.

STRUCTURAL ENGINEERING
Safe, efficient and economical structural designs.

QUANTITY SURVEYING
Accurate costing, budgeting and cost management.

PROJECT MANAGEMENT
Professional management for successful project delivery.

CONSTRUCTION SUPERVISION
Quality assurance, site supervision and contract administration.

FEASIBILITY & ADVISORY
Feasibility studies, approvals facilitation and technical advisory.

OUR INDUSTRY EXPERTIES

- Commercial & Offices
- Residential & Housing
- Institutional & Public Buildings
- Industrial & Warehouses
- Infrastructure & Civil Works
- Healthcare Facilities
- Education Facilities
- Hospitality & Leisure

OUR VALUES

- **INTEGRITY** We do what is right, always.
- **EXCELLENCE** We pursue the highest standards in all we do.
- **INNOVATION** We embrace new ideas and better ways.
- **TEAMWORK** We achieve more through collaboration.
- **SUSTAINABILITY** We build responsibly for today and tomorrow.
- **ACCOUNTABILITY** We own our actions and deliver on our promises.



"We are committed to shaping our buildings, thereafter, they shape us."
– Winston Churchill

OUR COMMITMENT TO YOU

At Denline Consults Limited, we do more than design and build.
We partner with you to deliver spaces and structures that inspire, perform and create lasting impact.

LET'S BUILD SOMETHING GREAT TOGETHER.

www.denlineconsults.com
info@denlineconsults.com
0702 232 153
Kampala, Uganda

DENLINE CONSULTS LIMITED
Engineering Excellence. Building Value. Shaping a Better Tomorrow.

DenLine Consults

— Building today for a better tomorrow. —

WE SHAPE OUR BUILDINGS; THEREAFTER, THEY SHAPE US.

ENGINEERING • ARCHITECTURE • QUANTITY SURVEYING • PROJECT MANAGEMENT • CONSTRUCTION SUPERVISION



WEBSITE
www.denlineconsults.com

EMAIL
info@denlineconsults.com
denlineconsults@gmail.com

PHONE
0702 232 153
0788 774 838

FOLLOW US
@denlineconsults
@denlineconsults
Denline Consults Limited

COMING IN THE NEXT ISSUE:
QUALITY CONTROL ON SITE

We look forward to continuing this journey with you as we share knowledge, inspire professionalism and contribute to a safer, stronger and more sustainable built environment.

DENLINE CONSTRUCTION INSIGHTS | ISSUE NO. 002 | JULY 2026

SCAN TO VISIT OUR WEBSITE