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THE Contractor

TRINIDAD & TOBAGO

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**The Critical
Role of Expert
Contractors and
Quality Paint
in Caribbean
Commercial
Construction**

**Hard Hats
and Smart Tech:
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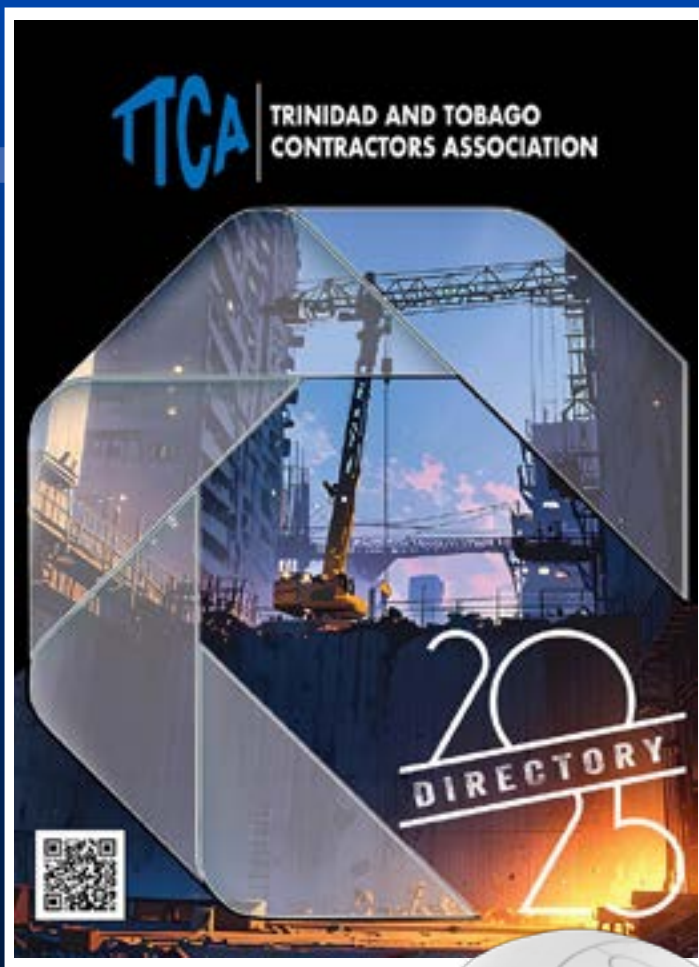
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10 More Than a Hurricane: The Procurement, Oversight, and Contract Pitfalls Behind the Grenada Stadium Failure of 2004

by Vaughn I. Lezama

20 TTCA MEMBER SPOTLIGHT FT Farfan: A Job-Site Partner Contractors Rely On



24 The Critical Role of Expert Contractors and Quality Paint in Caribbean Commercial Construction

06 **Hard Hats and Smart Tech: Is Trinidad and Tobago Ready for AI in Construction?**



32 **The Trinity of Sound FIDIC Contract Management: Discipline, Documentation, and Defensibility**

by Mikey Thackoor



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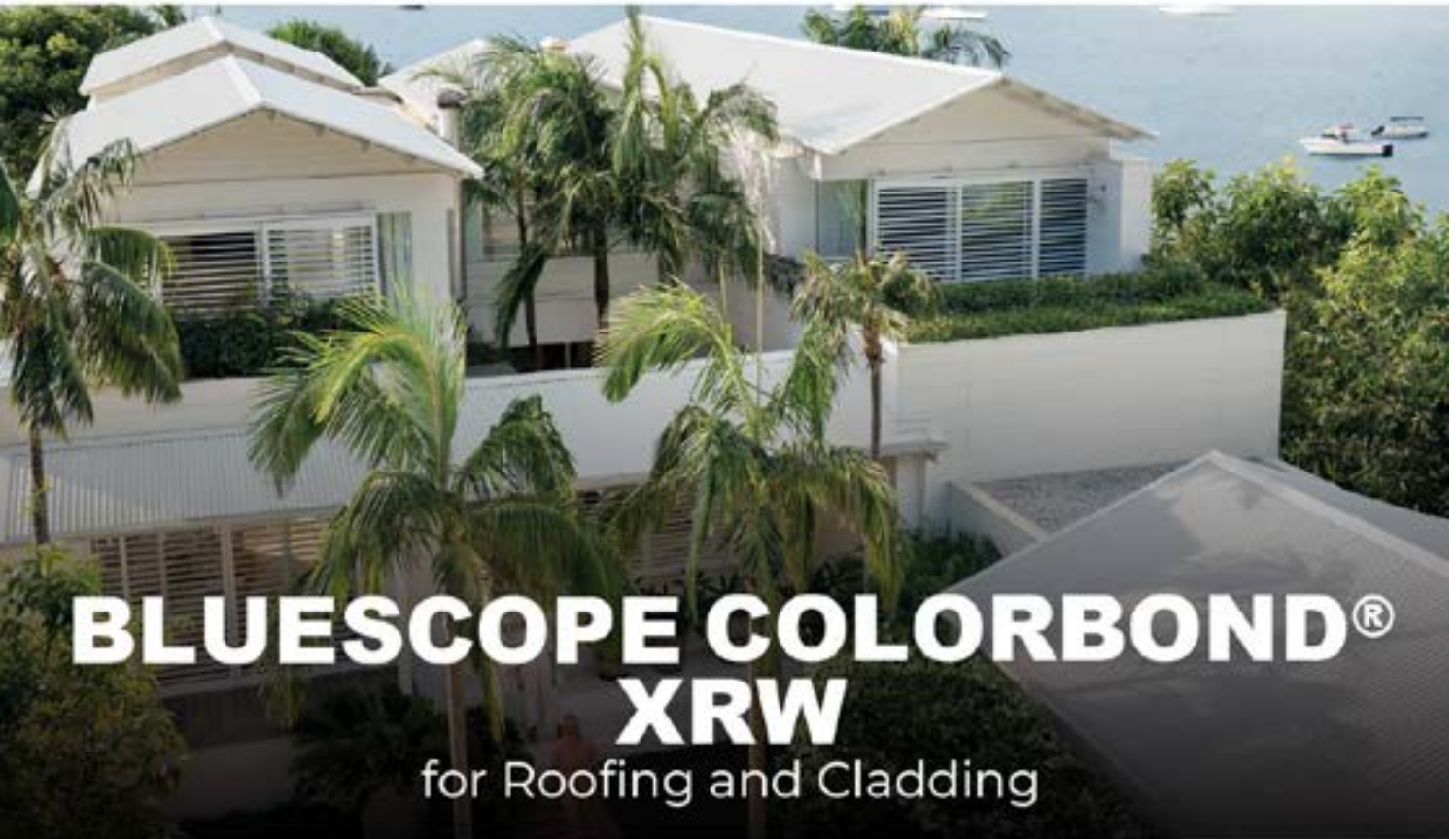
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Hard Hats and Smart Tech: Is Trinidad and Tobago Ready for AI in Construction?

Walk any large project in Trinidad & Tobago today and you'll see smartphones, PDFs, WhatsApp groups, maybe even drone photos—signs of a sector that has begun to digitise. But that is not the same as artificial intelligence (AI) permeating daily construction work. The clearest public transformation so far has been upstream, in permitting: the Town and Country Planning Division's DevelopTT moved planning permission, building permits and related approvals from paper to an online portal. It standardises



submissions and lets applicants track files across agencies—a real efficiency gain, but a digitisation reform rather than an AI system.

If you're looking for a yardstick of how ready countries are—policy, data, infrastructure, and tech sector capacity—an independent benchmark helps. In the 2024 Government AI Readiness Index, **Trinidad & Tobago scored 40.14, (Government 32.33; Technology 31.53; Data & Infrastructure 56.56)** with stronger performance on data and infrastructure than on the domestic tech sector pillar. For context: **Barbados scored 41.11, The**

Bahamas 42.03, Jamaica 37.79, and Guyana 37.23. In other words, T&T is in the regional middle—not a laggard, not yet a leader. Readiness doesn't mean construction adopts AI tomorrow, but it affects how quickly industries can move when use-cases make sense.

Inside the design office, BIM (Building Information Modelling) is the closest on-ramp to AI-enabled workflows. Local academic work has documented limited but growing BIM use in T&T architecture practices and identified the familiar barriers: training costs, software licensing, client demand and change management. Those findings don't claim broad adoption; they explain why the shift has been gradual and uneven.

Zoom out to the wider Caribbean and you see the same pattern. Regional surveys point to slow, uneven BIM uptake across Latin America and the Caribbean, even as the benefits are well understood. Boards across Caribbean companies also say the urgency to modernise is rising, a trend reflected in PwC's Caribbean Digital Readiness Survey 2024, but



capability gaps remain. Again, that's the runway for AI—not proof of day-to-day deployment on sites.

Estimating & take-offs. AI-assisted software can auto-classify and measure spaces on drawings in seconds, accelerating quantity surveying and pre-con. These tools exist and are in commercial use internationally; they don't require sensors on site to add value. (They're different from basic digital take-off tools because they use computer vision to detect and label elements.)

Aerial data to structured models.

Drones plus photogrammetry or LiDAR can generate 2D/3D site models for progress tracking and earthworks. While that's data capture rather than "AI," modern platforms increasingly layer machine-learning for object detection and change analysis. Importantly for local feasibility: Trinidad & Tobago vendors already sell survey-grade drone solutions, indicating supply-side availability even if clients haven't mandated their use.

Public sector enablers. Though DevelopTT itself is not an AI system, having a digital approvals backbone matters: it normalises data standards and shortens feedback loops that future AI tools (for plan checks, code compliance screening, or workload triage) could plug into. The ministry's documentation explains how the platform consolidates multi-agency workflows—a prerequisite for any later automation. In May 2025, Government created the Ministry of Public Administration & Artificial Intelligence (MPAAI) to coordinate

digital/AI initiatives; and T&T's Data Protection Act remains only partially proclaimed—both relevant context for procurement and data-sharing.

It's also worth noting that Caribbean policy work on AI is accelerating. UNESCO's Caribbean AI initiatives and policy roadmap push ethical and practical frameworks for small states. Those are horizontal (economy-wide), not construction-specific, but they create the governance scaffolding industries need to experiment safely.

So—is AI “widely used” on T&T construction projects?

Based on public records and research as of September 2025, no. There is clear evidence of digitisation (notably e-permitting) and emergent BIM practice with documented barriers; there is no authoritative dataset showing broad, on-site AI deployment across contractors in Trinidad & Tobago, nor region-wide. The readiness numbers suggest T&T can keep pace with near neighbours as pilots

scale, but the sector has not crossed into widespread AI use.

What a careful, evidence-based next step could look like

Given the above, suggestions here focus on low-risk, verifiable moves that fit our market and don't over-claim:

Pilot AI-assisted take-offs in pre-construction (one discipline first, e.g., interiors or MEP), comparing speed and error rates against current workflows. Documented international tools exist; the pilot's success (or failure) is measurable on T&T projects.

Standardise drone data capture on earthworks and large sites, then evaluate platforms that add automated change detection or volume calculations. Start with photogrammetry (cheaper, easier), step up to LiDAR only if the business case emerges. Local supply channels already exist.

BIM first, AI second. Use BIM adoption plans to raise model quality, naming conventions and clash detection discipline; AI tools add the most value once data is consistent. Local research already maps the training and cost barriers—use that to shape procurement and CPD.

Ask for data-ready deliverables in tenders. Even without mandating AI, owners can require open, structured deliverables (e.g., COBie fields, IFC) and site imagery schedules. That keeps future options open—whether for predictive maintenance or automated progress verification.

Trinidad & Tobago's construction sector is clearly moving from paper to pixels—e-permitting, digital drawings, drone imagery—but the leap from digitisation to true AI at scale hasn't happened yet. Regionally, T&T is neither out front nor falling behind; it sits in the middle on AI readiness, which means the foundations are there but the building isn't topped off.

What will signal real progress isn't marketing language—it's evidence. When owners start asking for structured, interoperable deliverables (think BIM with agreed naming and COBie/IFC fields), when contractors can point to verified pilots that cut take-off time or rework, and when training budgets match software ambitions, we'll know AI has moved from promise to practice. Until then, the prudent path is to run small, measurable pilots where the business case is strongest—pre-con estimating, progress verification from aerial data—while tightening data standards across the board.

In short: T&T construction is digitised, not AI-driven—yet. The gap can close quickly, but only if the sector treats data as infrastructure and backs decisions with evidence, not hype.

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Photo: Ian Mackenzie (madmack66), "Hurricane Ivan Grenada damage" (Dec 3, 2004). Source: https://commons.wikimedia.org/wiki/File:Hurricane_Ivan_Grenada_damage.jpg CC BY 2.0 - <https://creativecommons.org/licenses/by/2.0/>

More Than a Hurricane: The Procurement, Oversight, and Contract Pitfalls Behind the Grenada Stadium Failure of 2004

by Vaughn I. Lezama,
BSc., FAPETT, MASCE, R. Eng., CEO and Principal Engineer-
Consulting Engineers Associates 2005 Ltd



Introduction

Construction of a stadium on the Caribbean island of Grenada in the late 1990s and early 2000s culminated in a legal dispute between the developer and contractor and which was referred to an ICC-appointed arbitrator for resolution. The arbitration occurred before the stadium collapsed during the passage of Hurricane Ivan in September 2004. However, the in-sight provided by an in-depth review of the Arbitration Report suggests that deficiencies in the procurement, oversight, contract administration, and construction processes could have played a significant role, as did the passage of the hurricane, in the structural failure of the stadium. The construction of the stadium was aimed at hosting regional events such as the Carifta Games in 2000 and the Cricket World Cup in 2007. Various reports, including one from an independent engineer working with the Grenada Local CWC Organizing Committee, pointed to serious issues in the quality of construction, especially the lack of supervision.

While many investigations into construction failures focus on the immediate structural or design flaws, this paper takes a broader approach, examining systemic issues, identified by the Arbitrator, that could have contributed to the stadium's premature collapse. This paper therefore concludes that the failure of the Grenada Stadium was as much a result of flaws in procurement processes, organizational failures, and contractual disputes, as it was due to a high-intensity hurricane. The paper further makes recommendations whereby future projects can avoid these pitfalls in order to achieve a desired level of resilience and quality that fulfills the intended purpose.

Flawed, or Engineering Failure?

In analyzing the systemic issues, we must understand the dynamics involved in a Turn-Key FIDIC contract. The Grenada Government entered into an agreement with a developer who then hired the professionals and construction companies for the job. This layered approach, involving multiple parties, created several challenges in terms of coordination, contractual obligations, and oversight.

It's essential to highlight that the Grenada Stadium collapse may represent not only an engineering failure but also a failure of organizational and procurement processes. Engineers often design

with a “safety factor,” considering potential failures and their impact. When a failure occurs, it’s necessary to evaluate all contributing factors, including those beyond just the design flaws. The lesson here is that developed countries, too, experience engineering failures and, in those instances, extract valuable insights to improve their practices. The collapse of the Grenada Stadium, viewed in this light, highlights the need for improvement in the Caribbean’s engineering and construction practices—particularly in relation to quality management, project procurement, and oversight.

Quality Management – Pre-Construction Due Diligence

A significant issue in the Caribbean engineering practice is the absence of consistent quality management systems.

Engineering failures often arise from the lack of these systems. Developed countries have access to well-defined and tested processes for ensuring quality outcomes. In contrast, Caribbean practices often lack such frameworks, leading to variations in the results of construction projects.

Procurement Process

In many Caribbean countries, procurement processes for large infrastructure projects are often ad hoc. This lack of a structured procurement environment has long been a challenge in ensuring the best outcomes for public sector projects. Typically, procurement decisions are made on a whim, rather than based on a thorough understanding of the project’s needs and objectives.

Quality management in engineering begins with ensuring that standards are met from the very start of a project.

This can be achieved through a commitment to quality, which includes implementing a Quality Management System (QMS) that is independently evaluated.

In the case of the Grenada Stadium, had such a QMS been in place, design flaws may have been identified and addressed before construction.

For the Grenada Stadium project, the government chose a developer to design and construct the stadium with the aim of having it completed by March 2000 to host the Carifta Games. However, there was limited competition for the project, and the developer selected had no previous experience with turn-key projects. The developer hired professionals and contractors to carry out the work, but the contract was based on a lump sum price derived from conceptual designs. This proved problematic, as the initial designs were not sufficiently detailed and led to disputes later on.

Additionally, the timeline for the project was unrealistic. The

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design engineer was not engaged until December 1996, and the first architectural plans were not available until March 1997. Changes to the plans continued into 1998, and there was no complete set of architectural drawings available during the construction phase. This lack of planning and inadequate procurement processes were critical factors in the stadium's failure.

Oversight and Monitoring

The lack of adequate oversight was another significant factor in the stadium's eventual collapse. It became apparent that the government of Grenada had not appointed any independent party to represent its interests during the project. Furthermore, the division of responsibilities under the FIDIC contract—where the developer also served as the project's engineer—led to confusion and conflicts of interest.

The developer assumed the role of Engineer, with the design consultant serving as the Engineer's delegate. This overlap in responsibilities resulted in significant organizational problems. As a result, the oversight of the project was insufficient, and early signs of structural deficiencies went unnoticed. For example, cracks appeared in the walls of the stadium due to differential settlement, but there was disagreement over whether this was caused by poor compaction or inadequate geotechnical investigation.

The arbitration report revealed that there was significant confusion regarding the identity and responsibilities of

the Engineer. In a FIDIC contract, the appointment of a clear and competent Engineer is critical, and the absence of such an appointment further hindered the project's success.

Quality Assurance and Quality Control

The failure in oversight had direct consequences on the quality assurance (QA) and quality control (QC) processes. With inadequate monitoring and oversight, it is not surprising that the QA/QC processes were also compromised. The lack of clear communication, roles, and responsibilities contributed to the failure to meet design specifications and quality standards.

Observations and Conclusions

The collapse of the Grenada Stadium is not merely an engineering failure but a systemic failure rooted in procurement, oversight, contract administration, and organizational issues. These shortcomings led to structural deficiencies that were not adequately addressed until it was too late.

Lessons learned from this failure point to the need for an integrated approach to construction projects. Effective risk management, rigorous oversight, clear contracts, timely dispute resolution, and early intervention are crucial to ensuring the success of complex infrastructure projects. The collapse highlights that public sector projects require transparent procurement processes, effective project monitoring, and independent oversight to ensure value for public investment.

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Recommendations for Future Projects

1. Procurement Process

- **Clear and Comprehensive Requirements:** The Employer must provide well-defined project specifications, detailing structural design, environmental resilience, and long-term operational needs.
- **Pre-qualification of Developers:** Developers should be thoroughly assessed, not just for financial capability but also for their track record in managing similar projects.
- **Transparent Tender Process:** The procurement process must be transparent, with clear communication and responsibilities among all involved parties.
- **Incorporation of Risk Management:** The procurement contract should clearly delineate responsibilities and include risk management strategies to address potential challenges.

2. Oversight and Project Monitoring

- **Independent Oversight:** The Employer (state) should appoint an independent body to monitor the project, ensuring adherence to safety standards, design, and contract terms.
- **Clear Milestones:** Establish agreed-upon milestones with checks to ensure compliance with specifications and standards.
- **Detailed Reporting:** Implement a detailed reporting framework to track progress, risks, and deviations from the plan.

3. Contract Administration and Communication

- **Clearly Defined Roles:** Roles and responsibilities should be explicitly defined, particularly for the engineer, designer, and contractor, ensuring accountability and clarity throughout the project.
- **Early Engagement of Professionals:** Architects, engineers, and contractors should be involved early in the process of any turn-key project to ensure that designs and construction methods align with project requirements.
- **Robust Change Management:** Establish a clear process to manage changes in design, materials, and construction methods.
- **Dispute Resolution:** Early-stage dispute resolution mechanisms should be included to prevent minor issues from escalating into major setbacks.

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4. Project Organization and Coordination

- **Centralized Coordination:** The developer should establish a dedicated project management team to coordinate all stakeholders and prevent miscommunication.
- **Regular Coordination Meetings:** Coordination meetings should involve all parties to ensure alignment on the project's objectives, timelines, and any emerging issues.

5. Dispute Resolution and Claims Management

- **Structured Dispute Resolution:** Establish a structured process for resolving disputes, especially those related to design flaws, construction defects, and performance issues.
- **Claims Management:** Clear processes for managing claims should be incorporated into the contract, ensuring that any issues are resolved promptly and effectively.

Conclusion

The failure of the Grenada Stadium was a complex issue rooted in systemic problems within procurement, oversight, contract administration, and project execution processes. The lessons learned from this incident underscore the importance of rigorous quality management, clear procurement processes, and strong oversight to ensure that future projects achieve the desired outcomes. Had the recommendations outlined above been considered and followed, the Grenada Stadium would have likely been a resilient and high-quality facility, fulfilling its intended purpose.



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Vaughn Lezama is a Civil Engineer with over 44 years of engineering practice. He is the Chairman and Principal Engineer at Consulting Engineers Associates 2005 Ltd. Eng. Lezama is registered with the Board of Engineering of Trinidad and Tobago and is a Fellow and Past President of the Association of Professional Engineers of Trinidad and Tobago. He is also a Member of the American Society of Civil Engineers. Eng. Lezama has extensive experience in Engineering Designs, Technical Studies, Construction Supervision, and Contract Administration. He is highly trained in the use of the FIDIC suite of Contracts. Currently, Eng. Lezama serves as the Registrar of the Board of Engineering of Trinidad and Tobago (BOETT) and is responsible for maintaining the Register of Engineers in accordance with the Engineering Profession Act No. 34 of 1985.



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TTCA MEMBER SPOTLIGHT

FT Farfan: A Job-Site Partner Contractors Rely On



Across Trinidad & Tobago's building sites—from coastal subdivisions to hillside cut-and-fill—FT Farfan Limited has become a dependable source of equipment, parts, and after-sales support. As a member of the Trinidad & Tobago Contractors' Association (TTCA), the company's role in the sector is practical: keep crews working and timelines on track with machines and service that suit local ground and weather.

Why JCB—and Why the 205 NXT
FT Farfan represents JCB in Trinidad & Tobago, providing contractors with access to the brand's excavators, along with local parts, service, and factory-trained technical support. For this feature, we're taking a closer look at the JCB 205 NXT, a 20-ton class crawler excavator that



The 205 NXT

Operating weight: ~21,000–21,500 kg (configuration-dependent).

Engine: Cummins 6BT 5.9C, water-cooled, turbocharged diesel.

Rated power: 104 kW (≈140 hp).

Bucket options: GP buckets ~0.90–1.02 m³ (typical).

Undercarriage: track-shoe options of 500, 600, 700, or 800 mm.

Working range (5.7 m monoboomb): max digging depth ~5.98–6.59 m (2.4 m vs 3.0 m dipper), max reach on ground ~9.10–9.61 m.

Hydraulics: twin variable-displacement main pumps (2 × 220 L/min typical); bucket tear-out up to ~130 kN; dipper tear-out up to ~115 kN (2.4 m).

Travel / swing: high/low travel ~5.9/3.4 km/h; swing speed ~12 rpm.

Service capacities: fuel tank ~343 L; extended hydraulic oil/filter intervals in the current program.

has the reach, digging power, and setup options to handle much of the island's earthworks—without drifting into oversize, hard-to-move territory.

- Lower fuel consumption through Eco/Power/Power+ modes and efficient hydraulics.
- Reduced total cost of ownership, with fewer service hours and long maintenance intervals.
- Simplified diagnostics, ideal for Trinidad job sites where downtime is expensive.

These strengths explain why contractors who start with one JCB often expand their fleet—one well-supported machine leads to another.

On the control and efficiency side, the 205 NXT adds IntelliControl (a built-in display with operating modes and health alerts), LiveLink telematics (remote utilisation, location and fuel/health data), and energy-saving hydraulic features (including regeneration) that target faster cycles with lower fuel burn. JCB quotes Eco/Power/Power+ modes and efficiency improvements relative to the prior model under test conditions.

How It Maps to Trinidad's Ground Conditions

Much of central and southern Trinidad is underlain by expansive clays—including the Talparo series—characterised by high plasticity and significant montmorillonite content. In the wet season these clays soften and lose bearing capacity; in the dry season they shrink and fissure. On slopes, expansive clays are linked to creep and shallow instability, particularly where drainage concentrates. A geotechnical investigation at Couva (health campus

site) documented soils that were ~95% Talparo Clay with Liquid Limits in the mid-70s and Plasticity Index near the high-50s, classed as medium-high expansive potential. Independent work at UWI has long noted Talparo's mineralogy (~40% montmorillonite) and the prevalence of seasonal shrink-swell in central/southern districts.

For contractors, those facts show up as soft platforms after rain, perched water, heave under slabs/footings, and tricky cut slopes.

Here's where the 205NXT's specifics matter:

Ground pressure management. Selecting 700–800 mm shoes spreads the ~21-ton load, lowering contact pressure on saturated clays and reducing the tendency to sink or rut. The undercarriage menu (500–800 mm) lets crews tailor the machine to season and site.

- **Digging in stiff strata.** With bucket/dipper tear-out forces up to ~130/115 kN, the machine maintains production in stiff residual clays and occasional hard lenses without over-reliance on breakers.
- **Reach vs. repositioning.** The 5.98–6.59 m dig depth and ~9.1–9.6 m reach on ground allow deeper footings and trench runs while reducing machine moves—useful on constrained urban lots or bench cuts.
- **Rain-day resilience.** Efficiency tools (Eco modes, hydraulic regeneration) and LiveLink help supervisors manage idling, track fuel, and intervene early on faults—habits that pay off when weather forces stop-start operations and muddy access.



Dialing in your job-site set-up

- **Dipper choice:** The 2.4 m dipper maximises tear-out for tough excavation; the 3.0 m dipper trades a bit of breakout for added reach and vertical wall depth—handy for services trenches and deeper sumps.
- **Bucket sizing:** On soft ground, pairing the machine with the 0.9 m³ GP can keep cycle times crisp without over-loading the platform; in better bearing conditions, the 1.02 m³ bucket supports bulk moves.
- **Pads & platforms:** Where Talparo or similar clays are close to surface, temporary mats or well-drained platforms protect subgrades and keep production steady between showers—practice that aligns with the shrink-swell behaviour documented locally.

Dealer support that makes the difference

Spec sheets don't keep a site moving—support does. FT Farfan lists the 205 NXT and 140 NXT in its local excavator lineup and provides parts and service from its San Juan and San Fernando base, with JCB brand representation and sector-oriented support through its construction channel. The combination of appropriate spec + local inventory + after-sales is ultimately why machines like the 205 NXT and 140 NXT fit the realities of Trinidad's construction calendar.



JCB 140 NXT

For projects that demand a more compact or cost-effective solution than the JCB 205 NXT, the JCB 140 NXT is the ideal alternative. The JCB 140 NXT 14T Excavator is the perfect balance of power and practicality. More compact and manoeuvrable than the JCB 205 NXT, it's built to work efficiently in tighter spaces without sacrificing performance. Designed to tackle the most common jobs across construction, utilities, and earthmoving, the 140 NXT delivers the strength, reliability, and productivity you expect from JCB — all in a size that keeps your operations flexible and cost-effective.



The Critical Role of Expert Contractors and Quality Paint in Caribbean Commercial Construction

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Selecting the right painting contractor and appropriate paints from a project's inception is not just important—it's essential for commercial success in the Caribbean region. The unique environmental challenges of tropical climates, combined with the significant financial investments involved in commercial construction, make these decisions critical to long-term project viability and profitability.



Understanding the Caribbean Construction Environment

The Caribbean presents a uniquely challenging environment for commercial construction projects. The region's tropical climate creates conditions that can quickly deteriorate poorly applied or inappropriate paint systems, leading to costly repairs and potential structural damage.

High humidity levels throughout the year create constant moisture exposure that traditional paint systems cannot withstand. The combination of intense UV radiation from direct sunlight and reflected light from surrounding water bodies creates an environment where paint degradation occurs at an accelerated rate compared to temperate climates. Salt spray from ocean winds carries corrosive elements that can penetrate inadequate paint barriers, leading to substrate damage that extends far beyond surface aesthetics.

Temperature fluctuations between day and night, while less extreme than continental climates, still create expansion and contraction cycles that stress paint systems. The frequent rainfall characteristic of tropical climates means that water intrusion becomes a constant threat when paint systems fail to provide adequate moisture barriers.

These environmental factors work in combination to create what construction professionals call “accelerated weathering conditions.” Commercial buildings in the Caribbean can experience paint failure in as little as six months when inappropriate materials or application methods are used, compared to several years in more temperate climates.

The True Cost of Poor Initial Decisions

The financial implications of selecting



inadequate painting contractors or inappropriate paint systems extend far beyond the initial project budget. When commercial projects in the Caribbean fail to invest properly in quality painting from the start, the cumulative costs can be staggering.

Premature paint failure typically becomes apparent within the first year of completion. The initial signs include chalking, where the paint surface begins to break down and leave a powdery residue, and color fading that can make a new commercial building appear aged and unprofessional. These early failures often indicate deeper problems with the paint system that will require complete remediation.

The process of addressing failed paint systems on commercial buildings involves significant costs beyond simple repainting. Proper preparation requires complete removal of failed coatings, which can involve sandblasting or chemical stripping processes that are both expensive and disruptive to business operations. The substrate must then be properly prepared and primed before new paint can be applied, essentially requiring the entire painting process to be repeated at a much higher cost than the original application.

Business disruption during remediation work can be particularly costly for commercial operations. Retail establishments may need to close during certain phases of the work, hotels may need to take rooms out of service, and office buildings may need to relocate tenants temporarily. These operational

disruptions can cost significantly more than the remediation work itself.

Essential Qualities of Caribbean Commercial Painting Contractors

Selecting an appropriate painting contractor for Caribbean commercial projects requires evaluation of specific qualifications and experience that may not be relevant in other climates. The contractor's understanding of local environmental conditions and experience with appropriate material systems becomes paramount to project success.

Experience with Caribbean commercial projects should be demonstrated through a portfolio of successfully completed projects that have maintained their appearance and protective qualities over time. Contractors should be able to provide references from projects completed at least three years prior, allowing for evaluation of long-term performance rather than just initial appearance.

Proper licensing and insurance coverage takes on additional importance in the Caribbean due to the frequency of severe weather events. Contractors should carry comprehensive liability insurance that specifically covers weather-related damage and should be licensed to operate in the specific jurisdiction where the project is located. Given the complexity of inter-island regulations in the Caribbean, this licensing requirement can be more complex than in other regions.

Quality control procedures become critical when environmental conditions can cause rapid paint failure if application procedures are not followed precisely. Qualified contractors should have documented

Technical knowledge of appropriate paint systems for tropical climates is essential. Qualified contractors should understand the performance characteristics of different resin types, the importance of proper surface preparation in high-humidity environments, and the application techniques required for optimal performance in tropical conditions. This knowledge should extend to understanding how different substrates perform in Caribbean climates and how paint systems must be modified accordingly.

quality control processes that include environmental monitoring during application, specified cure times between coats, and post-application inspection procedures.

Climate-Specific Paint Selection Criteria

The selection of appropriate paint systems for Caribbean commercial applications requires understanding of how different formulations perform under tropical conditions. The paint chemistry that works well in temperate climates may fail rapidly when exposed to the constant heat, humidity, and salt exposure characteristic of the Caribbean environment.

Resin selection forms the foundation of appropriate paint system performance. Acrylic resins generally provide superior performance in tropical climates due to their excellent UV resistance and flexibility. However, not all acrylic formulations are suitable for high-humidity environments, and the specific acrylic chemistry must be selected based on the intended application and expected service life.

Polyurethane systems offer excellent durability and chemical resistance, making them appropriate for commercial applications where mechanical durability is important. However, polyurethane systems can be sensitive to moisture during application, requiring careful timing and environmental control during the painting process.

Epoxy systems provide excellent

adhesion and chemical resistance but may be susceptible to UV degradation if not properly formulated or topcoated. Two-component epoxy systems often provide superior performance compared to single-component formulations, but require more sophisticated application procedures and contractor expertise.

The pigment system used in Caribbean commercial paints must provide both color stability and UV protection for the underlying resin system. Titanium dioxide-based pigments generally provide the best UV protection, but the particle size and surface treatment of the pigment can significantly affect performance. Organic pigments may provide vibrant colors but can be susceptible to fading under intense tropical sunlight.

Additives play a crucial role in paint performance under tropical conditions. Fungicides and algaecides are essential to prevent biological growth on painted surfaces, while UV stabilizers help maintain color and gloss retention.

Corrosion inhibitors become particularly important when painting metal substrates in salt spray environments.

The Substrate Preparation Foundation

Proper substrate preparation becomes even more critical in Caribbean commercial applications due to the accelerated weathering conditions. The preparation procedures that might be adequate in temperate climates are often insufficient to ensure long-term performance in tropical environments.

Concrete substrates, common in Caribbean commercial construction, require specific preparation procedures to ensure proper paint adhesion and moisture resistance. The high humidity environment means that concrete surfaces may retain moisture that can cause paint failure through osmotic blistering or poor adhesion. Proper curing time for new concrete becomes extended in high-humidity environments, and moisture testing should be performed before paint application.

Surface contamination removal takes on additional importance in the Caribbean due to the prevalence of salt spray and biological growth. Even new construction can have surface contamination from salt-laden air, and this contamination must be completely removed before paint application. Power washing with fresh water is often necessary, but the surface must be allowed to dry completely before painting, which can take longer in high-humidity environments.



Metal substrates require particularly careful preparation due to the accelerated corrosion rates in tropical climates. Surface preparation standards that are adequate in dry climates may be insufficient in Caribbean environments. Blast cleaning to white metal standards may be necessary for critical applications, and protective coatings must be applied within specified time limits to prevent flash rusting.

Long-Term Performance and Maintenance Considerations

The approach to paint system selection and application in Caribbean commercial projects must consider the long-term performance requirements and maintenance strategies that will be employed throughout the building's service life. The environmental conditions that make initial paint selection critical also affect the long-term maintenance requirements and strategies.

Maintenance planning should begin during the initial paint system selection

process. Different paint systems have varying maintenance requirements, and the building owner's capacity for ongoing maintenance should influence the initial system selection. High-performance systems may have higher initial costs but require less frequent maintenance, while lower-cost systems may require more frequent attention but have lower initial investment requirements.

Color selection affects both initial performance and long-term maintenance requirements. Darker colors absorb more heat and may experience greater expansion and contraction cycles, potentially leading to more frequent maintenance requirements. However, darker colors may also hide dirt and minor defects better than lighter colors, potentially extending the apparent service life of the paint system.

The scheduling of maintenance activities becomes more complex in Caribbean environments due to weather patterns and seasonal variations in temperature and humidity. Maintenance work may need to be scheduled during specific seasons to ensure optimal application conditions, and emergency repair capabilities become more important due to the potential for storm damage.

Making the Right Choice from Project Inception

The decision-making process for selecting painting contractors and paint systems for Caribbean commercial projects should begin during the early design phases rather than being deferred until construction is nearly complete. This early involvement allows for proper integration of the painting specifications with other building systems and ensures



that adequate time and resources are allocated for thorough evaluation and planning. Involving experienced contractors and knowledgeable materials experts from the outset means that paint specifications can be tailored to the unique needs of the project and its environment, rather than resorting to generic solutions that may fail prematurely.

When painting systems are integrated into the design and construction plan early, it becomes possible to coordinate substrate preparation, select the most compatible coatings, and schedule application during periods with optimal weather conditions. This proactive approach helps avoid costly delays and ensures that every stage, from surface preparation to final inspection, is conducted to the highest standard under the most favorable circumstances.

Early decision-making also facilitates a more accurate long-term maintenance plan, ensuring that building owners understand the care requirements and lifecycle costs associated with their

chosen paint systems. By considering total cost of ownership—not just initial expenses—developers can safeguard their investment against premature failure, expensive remediation, or business disruptions down the road.

In summary, prioritizing the selection of reputable painting contractors and climate-appropriate paint systems from project inception is critical to the long-term durability, appearance, and cost-effectiveness of Caribbean commercial construction projects. Such foresight leads to fewer maintenance issues, less operational downtime, and higher satisfaction for all stakeholders. By making smart, informed choices from the beginning, project teams lay the groundwork for structures that not only withstand the region's demanding environment, but also retain their value and appeal for years to come.



The Trinity of Sound FIDIC Contract Management: Discipline, Documentation, and Defensibility

by Mikey Thackoor: NH International Caribbean Ltd
Author - Begin At The End

In construction, especially under FIDIC contracts, survival and success are not accidental—they are managed. In the Caribbean, where we dance between rain delays, the Friday lime, supply chain chaos, client pressure, and a culture that sometimes leans more on “vibes” (informal feelings or intuitions) than verified processes. However, three principles must govern the day: Discipline, Documentation, and Defense. Let me explain

I call these the Trinity of Sound FIDIC Contract Management, a set of principles that, when applied together, form a robust framework for managing FIDIC contracts effectively and ensuring repeated project success. Ignore one, and your project may wobble. Ignore two and set yourself up for conflict,

loss, or legal disaster. Ignore all three? You’re not managing a project—you’re hosting a party and you are picking up the tab.

If you treat FIDIC like a suggestion, don’t cry when arbitration treats you like a casualty. Let’s go deeper.

Discipline: The Engine Room of Accountability

Discipline is quiet work—the daily repetition of the right actions, even when no one is looking. On a Caribbean job site, slipping into a laid-back rhythm is easy. A contractor promises, “Boss, I’m sending the crew tomorrow.” When ‘tomorrow’ comes, the only thing that shows up is a new excuse.



Discipline cuts through the fog. In practice, this means:

- Issuing timely notices under Clause 20.1, even if you think the issue will “sort itself out.”
- Chasing approvals proactively, not waiting until procurement is stalled and fingers start pointing.
- Running your site meetings purposefully, not just as weekly rituals to distribute coffee and blame.
- Walking with your contract—literally. Carry the Conditions of Contract like a foreman carries his tape. Know what it says. Quote it when needed.
- Updating your programme religiously. A sound, realistic, and actively maintained project schedule is your lifeline. It doesn’t just track progress—it proves your sequence, logic, and impacts. When properly updated,

the programme becomes a form of documentation and defensibility.

Caribbean Snapshot:

On a recent project, the team faced massive delays from the ferry system. The material trucks couldn’t make it to the island on time. But we had discipline: We documented every delivery delay, every site impact, and every programme adjustment daily. Because of that, we didn’t just raise a claim—we won it. And we won it not on emotion but on evidence.

Discipline is the daily deposit you make in the bank of defensibility. Don’t be found writing checks you cannot cash.

Legal Backing:

Look at the V601 Developments

v Probuild case. Probuild acted unreasonably by withholding certification, and the court ruled in favour of the contractor. Caribbean PMs, take note—discipline is not just about your actions but also how you respond to the client’s or Engineer’s behaviour. Stay sharp, stay reasonable, stay disciplined.

Another reminder comes from the Ron Engineering case in Canada. It established that even submitting a bid creates binding obligations—called Contract A. Caribbean contractors must treat the tender stage with the same discipline as contract execution. Don’t promise what you can’t deliver; don’t assume verbal “understandings” will protect you. Tendering is not limited—it’s legally binding.

And don’t forget this: a programme that’s six weeks out of date, or one that exists only for show, is dead weight. FIDIC Sub-Clause 14.1 expects you to provide an updated programme regularly. Without it, you lose clarity and control—and worse, you lose leverage.

Documentation: Your Contractual Currency

Too often, in the Caribbean, we manage through phone calls, WhatsApp messages, or worse—“he say, she say.” Let me tell you something straight: What’s not written can’t be defended, and what’s not signed might as well have never happened. I preach to my teams to reduce to writing.

FIDIC contracts are built on formal exchanges. You must keep pace. The moment you get too casual, you start losing control.

What must be documented?

- Site Diaries: Fill in intelligently. Record instances of late crew arrivals, rain halts to work, and changes in instructions.
- RFIs: Raise them early and formally, not as afterthoughts when something goes wrong.
- Meeting Minutes: Document what was agreed—don’t allow silence to rewrite the story.
- Letters and Notices: Use the proper channels. A “WhatsApp voice note” does not satisfy the requirements of Clause 20.2.

Caribbean Snapshot:

On a government job, the client insisted we were late and refused to pay prelims





past the original contract duration. But our documentation—every delay notice, instruction from the Engineer, and email showing late approvals—told a different story. During the final account negotiations, we laid out the timeline, each event backed with proof. They folded. We got paid. Your documents tell your truth when your words are no longer trusted.

Legal Backing:

You could learn something from the *Motherwell Bridge v Micafile* case. There, a contractor's claim for acceleration was denied because there was no formal instruction. Let that sink in—money left on the table because someone didn't send a letter. That's what poor documentation costs.

And then there's the Caribbean's *NIPDEC v NHIC* case from the Tobago Hospital Project. NHIC suspended work when the employer failed to provide payment security under Clause 14.7. The Court sided with the contractor because the documentation trail was there. Caribbean

managers, note that payment defaults, like all breaches, must be captured and escalated by the book.

Defensibility: The Litmus Test of Project Integrity

You can be hardworking. You can be well-intentioned. But if you cannot defend your actions—in writing, in sequence, in accordance with the contract—you are exposed. FIDIC doesn't reward effort. It rewards compliance.

Defensibility means:

- You've met the contract conditions (notice periods, approvals, payment applications).
- You've kept accurate, reliable records.
- You've operated transparently and professionally.

And it matters not just in arbitration, but in everyday site politics.

Snapshot:

A subcontractor claimed extra for rock excavation on a project in the Antigua. We asked for evidence. They had none—just a letter and a blurry photo.

Meanwhile, our logs showed the soil conditions, the daily progress, and even photos. Our position wasn't just firm—it was bulletproof. Their claim died before it reached adjudication.

In the Caribbean, defensibility keeps you from being bullied, blamed, or buried.

Legal Backing:

In *Perini v Commonwealth*, the court awarded the contractor acceleration costs because the client delayed EOT decisions. That silence cost the client. When your EOT sits unanswered, don't wait forever—build your paper trail and escalate. Defensibility is not passive. It's a proactive shield forged by action and evidence.

Another guiding case is *Holme v Guppy*, an old but golden precedent that introduced the "time at large" principle. If the client obstructs access or causes a delay, and no EOT is granted, the contract date becomes irrelevant—but only if



you have records to prove prevention. So, don't stay quiet when the Engineer takes six weeks to approve a material submittal. Log it. Highlight it. Defend it.

Legal Cases That Prove the Trinity Works

The courtroom is the final test of your project management integrity. These cases prove that:

- Without formal instructions, you lose (*Motherwell Bridge v Micafil*).
- Without timely action and escalation, you're breached (*Perini v Commonwealth*).
- Without fairness and a documented process, you're exposed (*V601 v Probuild*).
- Without payment security, suspension may be justified (*NIPDEC v NHIC*).
- Without early records of delay, time may not be extended (*Holme v Guppy*).
- Without discipline in your bid, you could bind yourself to risk (*Ron Engineering*).

The common thread in all six is management maturity. These are not just legal rulings—they're roadmaps for how we, as Caribbean professionals, must manage projects. Don't just be reactive. Be deliberate. Be documented. Be defensible.

Let's Be Real: The Caribbean Challenge

We work in an environment where the lines are often blurred:

- Cousin is working for the consultant.
- Client meetings that feel more like smoke breaks than strategy sessions.
- Cultural norms that prioritize relationships over rules.

However, contracts don't care who your uncle is. They don't bend because you had a good time at the Carnival.

They don't forgive because your intentions were pure. Proof is the only passport that gets you home. We must elevate the standard. Our projects deserve it, our teams need it, and our reputations demand it.

What This Means for You, the Project Manager

Whether you're a young PM or a seasoned warrior:

- Discipline is your ritual.
- Documentation is your language.
- Defensibility is your insurance.

If you want to be respected for delivery and professionalism, this is your path. Caribbean construction has long needed a raise in the bar—not just technically but contractually, Administratively, and ethically.

Your job isn't just to pour concrete. It's to build a record of competence, a wall of trust, and a shield of compliance. "Don't wait. Don't wish. Don't whine. Defend."

Final Word: Build It Like It's Going to Court. Because one day, it might.

If your team can't find a notice, can't explain a variation, can't defend the sequence of events—you've already lost. You don't know it yet.

But when you master the Trinity—Discipline, Documentation, Defensibility—you no longer manage projects. You command them.

You're not just present. You're prepared.
You don't guess. You know.
You don't bluff. You show proof.

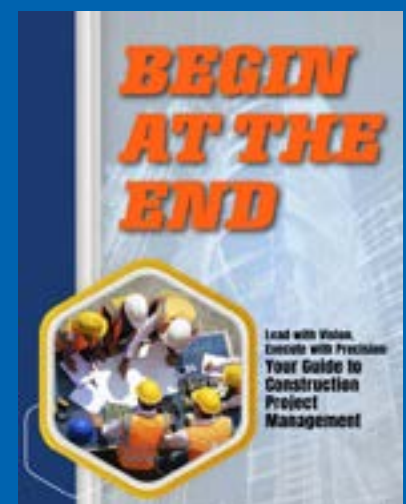
That's not just good project management. That's Caribbean excellence. That's survival on an island where vibes don't pay claims—and evidence is king.



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Mr. Mikey Thackoor is an experienced professional in the construction industry with a track record of over 25 years working across the globe. Presently, he holds the position of Head of Operations (Eastern Caribbean) at NH International Caribbean Ltd. In this role, Mr. Thackoor provides expert leadership in project development, design, implementation, and execution to ensure optimal results are achieved.



Mikey Thackoor is the author of
Begin At The End.

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