

Appraisal of the Impact of Various Contractual Arrangements on Project Delivery in Enugu State, Nigeria

Ekwueme Paul Chukwuka
Regenesys International School

Abstract

Project delivery in the construction industry is strongly shaped by the contractual arrangement adopted for execution. The selected arrangement affects time, cost, quality, risk allocation, supervision, and stakeholder coordination. In Enugu State, the Smart School initiative provides a useful case for examining these issues because it is a public-sector education project with a broad reform objective, high visibility, and multidisciplinary delivery requirements. This article appraises how different contractual arrangements influence project delivery outcomes, using the Smart School project as the case study. It argues that while large public projects require speed and scalability, the wrong procurement and contractual choices can produce coordination gaps, weak accountability, cost growth, or delivery delays. The paper concludes that contract structure is not merely an administrative formality, but a strategic determinant of project success.

Keywords: Contractual arrangement, project delivery, procurement, Smart School, Enugu State, construction management, design-bid-build, design-build

Introduction

Construction projects do not succeed by design quality alone. They also depend on the contractual framework that governs responsibilities, risks, payment mechanisms, quality control, and reporting obligations. In practice, the contractual arrangement chosen for a project often determines whether delivery is orderly or problematic. This issue becomes important in public infrastructure delivery, where projects are expected to serve social goals while still meeting standards of transparency, cost control, and timely completion. In Enugu State, the Smart School project provides a useful basis for examining how contractual arrangements shape project delivery. The project combines educational ambition, public visibility, multiple technical inputs, and strong expectations around performance.

Understanding Contractual Arrangements in Project Delivery

A contractual arrangement refers to the formal structure under which project responsibilities are distributed among the client, consultant, contractor, subcontractors, and specialist suppliers. It defines who designs, who builds, who coordinates, who bears risk, who certifies work, and how

disputes, payment claims, or variations are handled. Among the most common arrangements in construction are the traditional method or design-bid-build, the design-build method, management contracting, construction management, and collaborative public-private models. Each has strengths and weaknesses. The traditional arrangement may provide stronger separation between design and construction, but it can be slower. Design-build may accelerate delivery through integration, but it can reduce the client's direct control over design development. Management-oriented systems can improve flexibility on complex projects, but they require strong client capacity and close monitoring.

Overview of the Smart School Project

The Smart School project in Enugu State represents a public-sector effort to improve educational infrastructure through a more modern and technology-oriented school environment. As a case study, it is relevant because it is not merely a simple classroom-block project. It involves broader expectations around quality, learning environment, modern facilities, and coordinated project execution. This makes the project suitable for appraising the impact of contractual arrangements. A project with public visibility, technical inputs, and delivery pressure will always expose the strengths and weaknesses of the chosen procurement route. Where the contract structure aligns with project complexity, delivery improves. Where it does not, delays, quality problems, disputes, and cost overruns become more likely.

Impact of the Traditional Contractual Arrangement

Under the traditional design-bid-build arrangement, the client first appoints consultants to complete the design before contractors bid for construction. One major advantage of this arrangement is that it provides clearer documentation before work starts. It also allows the client to retain an independent consultant team for design interpretation, valuation, and site supervision. For a project such as the Smart School, this arrangement can improve accountability because standards are defined before the award. Independent consultants can help protect quality and ensure that the finished work matches the design intent. However, the main weakness is speed. Since design must be substantially completed before tendering and execution, the process can be lengthy. In public projects, administrative delays in approvals, tendering, or post-award variations can extend project duration considerably.

Impact of Design-Build Arrangement

A design-build arrangement places both design and construction responsibilities in the hands of one main contractor or consortium. This can be attractive for projects that require fast delivery because it reduces interface disputes between the designer and the builder and allows overlapping of design and construction activities. In the Smart School case, design-build can support quicker implementation, especially where the employer wants a standardized model that can be repeated across multiple locations. The main limitation, however, is that speed can come at the expense of independent scrutiny if the employer's requirements are not well prepared.

Where governance is weak, it may become more difficult to separate design responsibility from construction responsibility when defects or performance issues arise.

Impact of Management-Oriented Arrangements

Management contracting and construction management are particularly relevant where a project is complex, multi-disciplinary, and time-sensitive. These arrangements allow different work packages to be coordinated in parallel, which can be useful where building works, services, equipment, and specialist installations must all be integrated. For a project like the Smart School, which may involve building works, services coordination, equipment installation, and external works, a management-oriented approach can improve sequencing and flexibility. The challenge is that these arrangements demand a highly competent client structure. Without strong project management and clear reporting systems, responsibility can become fragmented and coordination may weaken.

Cost, Time, Quality, and Risk Implications

The clearest way contractual arrangements affect project delivery is through their impact on cost, time, quality, and risk. A traditional arrangement may strengthen documentation and quality control but can slow down delivery. Design-build may shorten the programme but requires stronger employer requirements to prevent quality reduction. Management-oriented systems may improve package coordination but can increase management demands and interface risk. No arrangement is automatically superior. The best option depends on project scale, urgency, design clarity, technical content, market capacity, and the ability of the client to supervise and manage the chosen route. In the Smart School case, the project's public nature means that accountability is just as important as speed.

Comparative Delivery Effects of Major Contract Options

Arrangement	Speed	Quality Control	Main Strength	Key Risk
Traditional / Design-Bid-Build	Moderate to Slow	Strong	Independent supervision and clearer documentation	Longer pre-contract process
Design-Build	Fast	Moderate	Single-point responsibility and quicker delivery	Reduced independent scrutiny if poorly managed
Management Contracting / Construction Management	Fast to Moderate	Variable	Flexible coordination of complex packages	High client-side management demand

Lessons from the Smart School Case

The Smart School project shows that contractual arrangements must match project ambition. A routine low-technology building may succeed under a straightforward arrangement with limited supervision. A more visible and technically demanding public project requires a more deliberate procurement strategy. The first lesson is that speed should not replace supervision. The second is that standardization must be supported by clear employer requirements. The third is that multi-disciplinary projects need strong coordination systems, whether the project uses a traditional, design-build, or management-oriented contractual structure. Finally, public projects require a procurement model that supports not only physical completion but also public confidence and accountability.

Conclusion

The appraisal of various contractual arrangements in relation to project delivery in Enugu State shows that project success depends not only on vision, funding, or design quality, but also on the contract system used to implement that vision. Using the Smart School project as a case study, it is clear that contractual structure influences speed, coordination, quality control, risk management, and accountability. Traditional arrangements may improve independent supervision, design-build may improve speed, and management-oriented methods may improve flexibility and package coordination, but each option carries trade-offs. The key lesson is that contractual arrangements should be selected strategically, in line with project complexity, delivery pressure, public accountability, and client capacity. In Enugu State and across Nigeria,

better project delivery will increasingly depend on moving from routine procurement habits to more context-sensitive contractual decisions.

Author's Note

Ekwueme Paul Chukwuka is an architectural professional with qualifications in Architecture and Project Management. He is certified in Team Essentials for Designing AI Solutions and Exploring the Basics of Project Management (IBM) and Project Management, Regenesys International School. His interests include project delivery systems, public infrastructure procurement, intelligent design management, and innovation in the built environment.

References

Enugu State Government. Enugu education transformation plan. [https://cdn.prod.website-files.com/653c514e62e72b8ce10f073a/65df3aa3346d9c9b5aea4adb_Enugu%20Education%20Transformation%20Plan%20\(1\).pdf](https://cdn.prod.website-files.com/653c514e62e72b8ce10f073a/65df3aa3346d9c9b5aea4adb_Enugu%20Education%20Transformation%20Plan%20(1).pdf)

Enugu State Government. (2024). Enugu State FY 2024 approved budget estimates. NGF Digital Repository. <http://ngfrepository.org.ng:8080/jspui/handle/123456789/5692>

Agomuo, Z. (2025, May 18). Smart Green School: A special kind of school in Enugu. BusinessDay. <https://businessday.ng/features/article/smart-green-school-a-special-kind-of-school-in-enugu/>