

Opportunities and Challenges of Adopting Rigid Pavement Technology in Nigeria:

A Consulting Engineers' Perspective

NBRRI WORKSHOP ON “GLOBAL TRENDS IN DESIGNS AND CONSTRUCTION FOR DURABLE ROAD PAVEMENTS

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Introduction

Rigid pavement technology, predominantly involving the use of concrete slabs, represents a significant alternative to flexible (asphalt) pavements in road construction. Given Nigeria's evolving infrastructure needs and challenging climatic conditions, the adoption of rigid pavement technology has garnered increasing attention. This document explores both the opportunities and challenges associated with the adoption of rigid pavement technology in Nigeria, particularly from the perspective of consulting engineers

Opportunities

Enhanced Durability and Longevity

Lower Maintenance Requirements

Improved Load Distribution

Suitability for Challenging Environments

Potential for Local Material Utilisation

Challenges

High Initial Construction Costs

Technical Expertise and Skill Gaps

Construction Time and Traffic Disruption

Material Quality Control

Adaptation to Local Conditions

Consulting Engineers' Recommendations

- **Capacity Building:** Invest in training programmes for engineers, contractors, and construction workers to bridge the skill gap in rigid pavement technology.
- **Life-Cycle Cost Analysis:** Encourage project stakeholders to consider the long-term benefits and reduced maintenance costs of rigid pavements rather than focusing solely on initial expenditure.
- **Quality Assurance:** Establish robust quality control measures for materials and construction processes to ensure the durability of the pavements.
- **Policy and Funding Support:** Advocate for government policies that support the adoption of rigid pavements, including funding mechanisms that offset higher initial costs.
- **Research and Local Adaptation:** Promote research into local materials and environmental conditions to optimise rigid pavement designs for Nigerian contexts.

Some Notable Rigid Pavement Projects

SN	ROAD	LENGTH(KM)	TYPE	CONSTRUCTED	DURATION
1	APAPA - WHARF ROAD LAGOS	4	JPCP	AG DANGOTE/ HANKOOK OGUNDIYA	2015
2	KABBA - OBAJANA ROAD KOGI STATE	43	JPCP	AG DANGOTE	2016
3	APAPA - OWORONSHOKI OJPOTA EXPRESSWAY LAGOS	36	CRCP	FMW/HITECH/YOLAS	2019 - 2024
4	NGOWOM - KOSHEBE ROAD IN BORNO STATE	10.5	JPCP	NORTH EAST DEV. COMMISSION	2023
JOINT PLAIN CONCRETE PAVEMENT - JPCP, CPNTINUOUSLY REINFORCED CONCRETE PAVEMENT-CRCP					

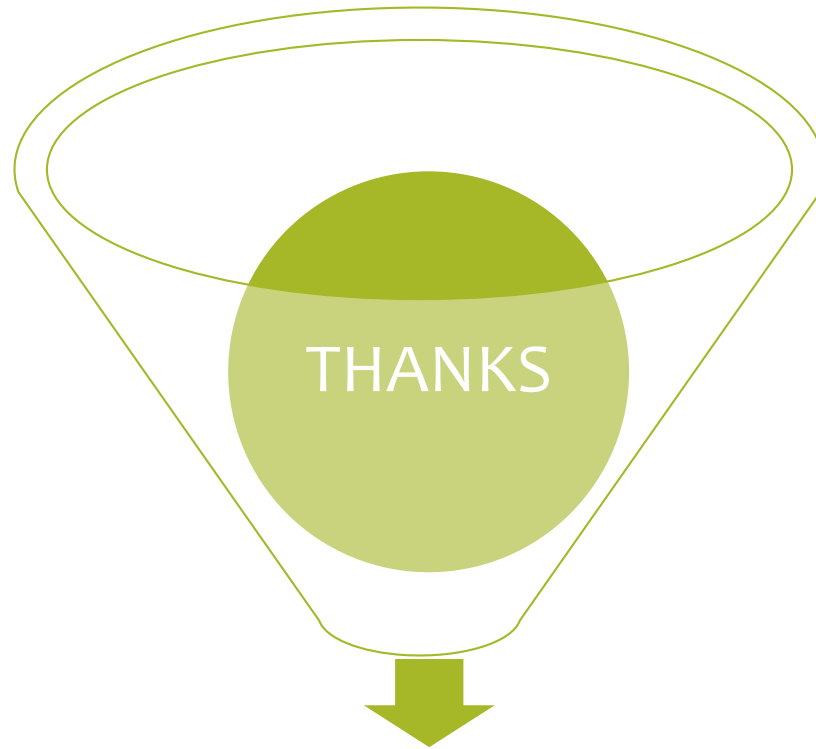
Some Notable Rigid Pavement Projects



NGOWOM - KOSHEBE ROAD IN BORNO STATE, PHASE1 COMMISSIONED BY V.PRESIDENT KASHIM SHETTIMA 2 YEARS AGO

Conclusions

While the adoption of rigid pavement technology in Nigeria presents numerous opportunities for improving road infrastructure durability and reducing long-term maintenance costs, significant challenges must be addressed to realise its full potential. Consulting engineers play a pivotal role in guiding stakeholders through the complexities of design, construction, and maintenance, ensuring that the transition to rigid pavements is both technically sound and economically viable.



QUESTIONS