

ALBE

ALBE CONSULTANTS LIMITED

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PAPUA NEW GUINEA

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COMPANY PROFILE



TIN Number: 500228540

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I. INTRODUCTION

ALBE Limited is an international, multi-disciplinary consultancy delivering innovative and high-quality solutions to a diverse portfolio of clients. With operations in both Papua New Guinea and the United Kingdom, our team includes engineers, project managers, accountants, lawyers, and surveyors working collaboratively to provide integrated services across engineering, planning and design, environmental management, and project delivery.

Specialising in the design and development of social infrastructure, roads and bridges, and environmental projects, ALBE Limited has earned a reputation as one of the most professionally managed consulting engineering firms in the region. Our team of experienced professionals brings together extensive expertise in transportation and infrastructure development, combining technical excellence with a deep commitment to sustainable and community-focused outcomes.

With an impressive portfolio of award-winning contracts, ALBE Limited has established a strong presence in Papua New Guinea, delivering major road and infrastructure projects in partnership with the Department of Works & Highways under the Connect PNG Program, as well as other projects across various provinces. By applying sound engineering principles and leveraging advanced technologies, we deliver projects that create value for our clients and contribute to the development of resilient, future-ready communities.

Guided by a clear vision, a commitment to our core values, and a reputation for integrity, innovation, quality, and service excellence, ALBE continues to build on its successes. Our mission is to be a leader in delivering world-class engineering services and infrastructure while setting new standards for innovation and technical excellence.

With the dedication and expertise of our professionals, ALBE Limited is well-positioned to undertake significant and complex projects. We provide clients with accurate, comprehensive data and actionable insights to support informed decision-making, driving the sustainable development of Papua New Guinea and beyond.

2. THE COMPANY

2.1 Company Registration Details

ALBE Limited is a duly registered company with a Company Number 1-76364 under the Papua New Guinea Companies Act 1997, from 30th October 2010. Taxpayer Identification Number: 500228540. Corporate member of the Institution of Engineers Papua New Guinea (IEPNG). Compliant with all local statutory and regulatory requirements for professional consultancy services.

2.2 Company Mission Statement

Our mission is to be a leader in delivering highest quality engineering services and infrastructures while setting new standards for innovation and excellence.

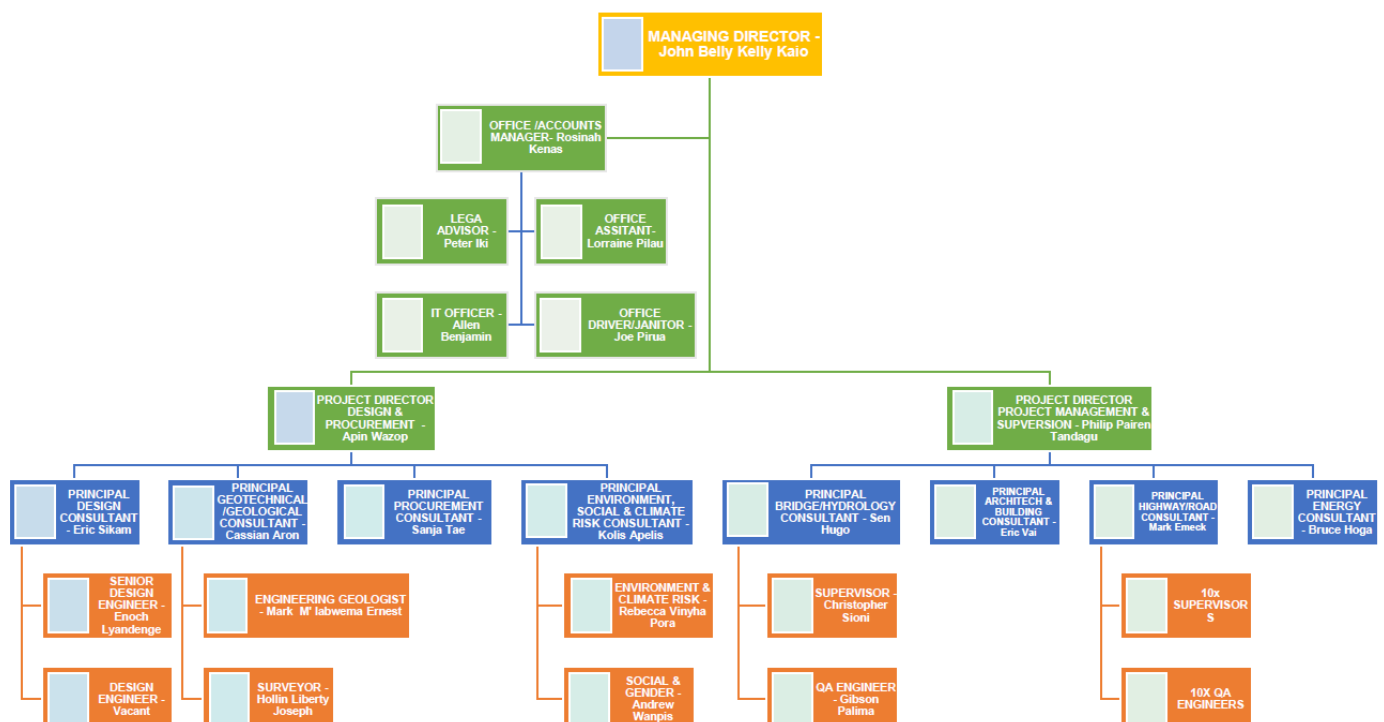
2.3 Company Vision

To be recognized as one of the leading companies in the consultancy services in the sectors of Building Roads & Bridges, Buildings & Infrastructures through Design, Project Management and Supervision.

2.4 Company Goal

Our goal is to exceed the expectations of every client by offering outstanding customer service, increased flexibility, and greater value, thus optimizing service delivery and improving operation efficiency. Our staff are distinguished by their functional and technical expertise combined with their hands-on, supervision, management and construction experience, thereby ensuring that our clients receive the most effective, quality and professional service.

2.5 Company Structure



Project Managers

Construction projects are complex undertakings that require adequate planning, coordination, and management to ensure timely and cost-effective completion while meeting all quality, safety, and regulatory requirements. The role of project management consultancy services for construction projects is critical as we provide the expertise and support required to manage and mitigate risks, ensure compliance with regulations, and optimize project performance. We provide project scheduling, delay and cost analysis, quality control, project timeline optimization, safety measurement, assess and approval claims, dealing with risks and provide monthly and quarterly reports.

Quality Assurance (QA)

The QA Engineers ensure that the construction meets all the standards by:

- **Implementing Quality Control Systems:** Formulating procedures for regular checks, auditing, and tests to supervise the quality of the construction.
- **Ensuring Compliance with Codes and Standards:** Obtaining assurance that construction meets all the existing specifications and standard codes, environmental regulations, and safety standards.
- **Regular Inspections:** Evaluating the quality of work produced by contractors and sub-contractors.
- **Close quality control (QC)** ensures that the final construction delivered is safe, durable, and meets the requirements.

Site Supervisor (Project Site Engineer)

Site supervisor provides oversight and guidance during the construction phase of the project, ensuring it adheres to plans, specifications, and safety standards. Liaison between the project manager, contractors, and other stakeholders managing site activities, monitoring progress, and maintaining quality control. Key responsibilities; Quality Assurance, Progress Monitoring, Safety Compliance, Contractor Management, Documentation and Reporting, Cost Control, Risk Management, Communication and Coordination.

3. COMPANY CAPABILITIES

ALBE Limited offers a broad range of technical and professional capabilities, delivering tailored solutions to meet the specific needs of public and private sector clients in Papua New Guinea and the United Kingdom. Our expertise is built on a foundation of international experience, multidisciplinary skills, and a proven track record in successfully managing and implementing engineering and professional projects of all sizes.

❖ Core Areas of Expertise:

- Engineering Services – Comprehensive solutions from initial design to final implementation, including engineering research, specification development, and operational support.
- Project Management – Full life-cycle project oversight, ensuring delivery on time, within budget, and to the highest standards.
- Construction Supervision – On-site management, quality assurance, and coordination between service providers and clients.
- Professional Services – Integrated legal, accounting, surveying, and resource planning support for complex projects.
- Environmental, Social and Climate Risk Assessment – Conducting environmental and social assessments, climate risk analysis, and mitigation planning to ensure compliance with national and international standards.

❖ Technical Strengths:

- Development of standard specifications and engineering research
- Asset management frameworks, infrastructure planning, and resource allocation
- Oversight of multi-site operations and large-scale project delivery
- Direct client liaison, training, and functional/technical support
- Innovation in methods and approaches to meet unique project requirements
- Expertise in World Bank and international best-practice environmental and social safeguards

❖ Competitive Advantages:

- Multi-Disciplinary Expertise – Engineers, project managers, accountants, lawyers, surveyors, and environmental specialists collaborating seamlessly.
- International & National Experience – Successful delivery of major projects in Papua New Guinea and the United Kingdom.
- Operational Excellence – Skilled in managing diverse, multi-location projects under varied conditions.
- Client-Centric Approach – Tailored solutions developed through close consultation and on-site engagement.

ALBE Limited continually invests in research, professional development, and industry best practices. This commitment ensures we provide clients with forward-thinking, cost-effective, and sustainable solutions; making us the preferred partner for managing assets and implementing engineering, professional, and environmental works in both national and international contexts.



4. INDUSTRY

ALBE Limited delivers high-quality engineering, construction, and professional services to both public and private sector clients in Papua New Guinea, the United Kingdom, and other international markets. Our operations are built around four main areas of expertise: Project and Asset Management, Design and Construction, Environmental, Social and Climate Risk Assessment and Management, and Other Professional Services. This structure enables us to meet complex infrastructure and development needs while ensuring our work meets both technical and sustainability objectives.

1. Project and Asset Management:

ALBE Limited provides comprehensive project and asset management services that ensure infrastructure projects are delivered on time, within budget, and to the highest standards. Our services include:

- Project Management – Full lifecycle oversight from planning to delivery.
- Project Feasibility Studies – Evaluating project viability, costs, and benefits.
- Transport Economics – Applying economic modelling to support infrastructure investment decisions.
- Contract Management – Managing procurement, compliance, and delivery for complex contracts.
- Road Equipment Management – Optimising the use and maintenance of road construction and maintenance equipment.
- Infrastructure Asset Management – Developing long-term management strategies for public and private infrastructure assets.
- Complex Public–Private Partnerships and Performance-Based Procurement – Structuring innovative delivery models for sustainable outcomes.

2. Design and Construction:

Our design and construction services cover the entire project lifecycle, from initial concepts to final delivery. We ensure that every project meets technical, safety, and environmental requirements. Our capabilities include:

- Road & Bridge Engineering and Design Development
- Road & Bridge Construction Supervision
- Architecture and Building Design Development
- Building Construction Supervision
- Electrical Engineering Works
- Power Plant Development
- Mechanical Engineering Works
- Water Reticulation Works

3. Environmental, Social and Climate Risk Assessment and Management

ALBE Limited is committed to ensuring that projects are planned, designed, and delivered in compliance with environmental and social safeguards, and are resilient to climate-related risks. We provide:

- Environmental Impact Assessments (EIA) in line with national and international standards.
- Social Impact Assessments (SIA) to address community needs, cultural sensitivities, and resettlement planning.
- Climate Risk Assessments using international climate projection models (RCP 4.5 and RCP 8.5) to anticipate and mitigate climate-related impacts.
- Risk Management and Mitigation Planning to integrate sustainability and resilience into infrastructure projects.
- Compliance with World Bank Environmental and Social Framework (ESF) and other donor requirements.

This focus ensures that our clients' projects meet legal obligations, safeguard communities, and contribute to long-term environmental sustainability.

4. Other Professional Services:

Beyond engineering and construction, ALBE Limited offers a wide range of professional services to support project success:

- Cost Estimation and Quantity Surveying
- Infrastructure and Building Design
- Road Traffic Surveys
- Specialised Legal Advice for infrastructure and contract management
- Company Audit and Business Advisory services
- Supply of Civil Engineering Products including road asphalt, road chemical stabilisers, bridges, gabion baskets, culverts, and residential building materials

With expertise that spans engineering, environmental management, and professional advisory services, ALBE Limited is uniquely positioned to deliver integrated, end-to-end solutions for infrastructure and development projects. Our approach combines technical excellence, sustainability, and a deep understanding of both local and international industry standards, enabling us to deliver resilient, cost-effective, and future-ready infrastructure solutions.

5. ALBE COLLABORATIVE PARTNERSHIPS

ALBE Limited is committed to building and sustaining collaborative partnerships with public and private sector organisations to ensure the successful delivery of projects. Through these strategic alliances, ALBE continues to strengthen ties with local, national, and international entities, unlocking market potential and delivering high-quality outcomes.

Our approach to collaboration is driven by a commitment to fostering productive and mutually beneficial relationships that enhance project performance, encourage innovation, and support long-term development goals.

How We Build and Maintain Partnerships

- Strategic Alliances – Establishing partnerships with leading international and Papua New Guinean private sector companies to combine expertise and resources.
- Industry Engagement – Participating in national and international forums and events to strengthen networks and share best practices.
- Capacity Development – Facilitating development programs that build professional relationships, promote cross-cultural understanding, and enable effective knowledge transfer.

Through these efforts, ALBE ensures that each partnership is built on trust, shared goals, and a commitment to excellence—contributing to stronger project outcomes for clients and stakeholders.



6. ALBE PROJECT EXPERIENCE

We have worked on a broad range of projects throughout Papua New Guinea and internationally. The projects have ranged from major high impact infrastructure projects FIDIC Silver Book (Lump Sum) Contracts, 4Lane road design & construction, project supervision through to road projects and various building supervision and construction opportunities.

The below table outlines the recent million kina worth projects managed by ALBE in Papua New Guinea:

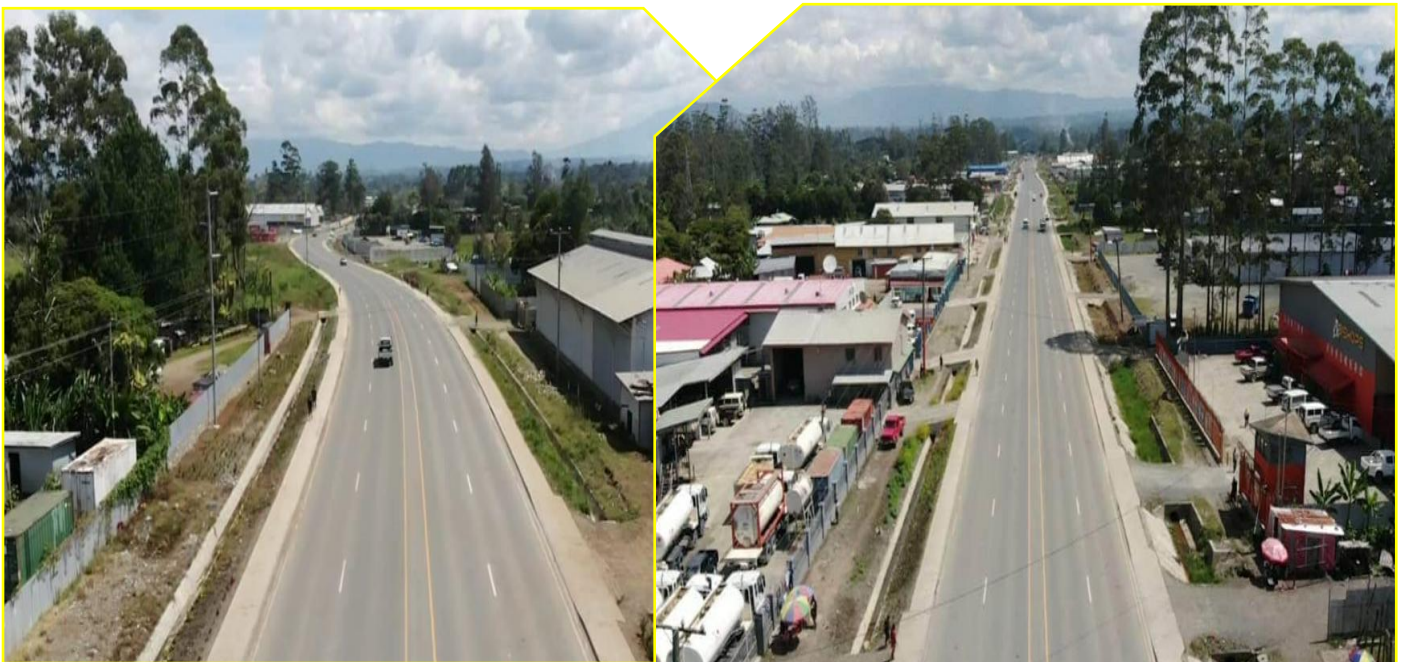
NO.	PROJECT NAME	TOTAL COST (K)
1	Mt Hagen 4Lane Upgrading and Redevelopment	K265million
2	9Mile to Yalu as Section 2A of the Lae to Nadzab Airport Turnoff	K134million
3	Bugandi Roundabout to 9Mile WauBulolo Turnoff of the Lae to Nadzab Airport Turnoff section of Highlands Highway	K235million
4	Kieta Wharf to Toinamapu in Central Bougainville	K156million
5	Toinamapu to Buin Kangu Wharf in South Bougainville	K238million
6	Ambua Lodge Turnoff to Komo	K290million
7	New Enga Provincial Hospital Project	K406million
8	Jiwaka Provincial Head Quarters	K219Million

7. PROJECTS IN PAPUA NEW GUINEA

John as the Project Director of the High Impact Project Office of Government responsible as the managing all reference designs, procuring and has been appointed as the Engineer or the Superintend to all High Impact Projects which are more than K100million. The high impact projects are all Engineering, Procurement and Construction (EPC) Lump Sum Contracts which requires high level of specific project design knowledge to develop relevant Schedule of Works, procurement and contract negotiation, contract administration and project management skills. He is managing the following EPC Lump Sum contracts as the Engineer to the Projects;

7.1 Mt Hagen 4Lane Upgrading and Redevelopment – K265million

This is an FIDIC EPC Lump Sum Project that is extended 13.7km from Kagamuga Airport to Keltiga Turnoff. This project is financed by the Export Import (EXIM) Bank of China. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications with tailor designed asphalt and modified cement based pavement design for subbase and base course materials.



7.2 9Mile to Yalu as Section 2A of the Lae to Nadzab Airport Turnoff – K134million

This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 7km from 9Mile BuloloWau Turnoff to near Yalu Bridge (Chainage 16+040). This project is financed by the Independent State of PNG. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project.



7.3 Bugandi Roundabout to 9Mile WauBulolo Turnoff of the Lae to Nadzab Airport Turnoff section of Highlands Highway– K235million

This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 9km from Bugandi Roundabout to 9Mile BuloloWau Turnoff. This project is financed by the Independent State of PNG. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications with tailor designed asphalt and modified cement-based pavement design for subbase and base course materials.

7.4 Kieta Wharf to Toinamapu in Central Bougainville – K156million

This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 45km from Kieta to Toinamapu. This project is financed by the Independent State of PNG. The contractor has designed the 2Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications. This project has pavement stabilisation of the base course as a variation.



7.5 Toinamapu to Buin Kangu Wharf in South Bougainville – K238million

This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 60km from Toinamapu to Kangu Wharf in Buin. This project is financed by the Independent State of PNG. The contractor has designed the 2Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications. This project has pavement stabilisation of the base course as a variation.



7.6 Ambua Lodge Turnoff to Komo – K290million

This is a FIDIC Red Book Schedule of Rates Contract. This Project is extended 52km from Ambua Top to Komo in Hela Province. This project is financed by the Independent State of PNG through a Tax Credit Programme funded by ExxonMobil. The independent consultants have designed the 2Lane Road and the design reviews are done by Department of Works & Implementation (DOWI). John manages both contractor and project management consultants

and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications.

7.7 New Enga Provincial Hospital Project – US\$159million (PGK406million)

This is a FIDIC Red Book Schedule of Rates Contract. This Project is the New Enga provincial Hospital Building in Enga Province. This project is financed 85% by EXIM Bank of China and 15% by the Independent State of PNG. The independent American consultants have designed the building and have also supervised the project for 13months with a minimal progress of 8%. DOWI was asked to be the Employer's Representative by the Enga Provincial Government. John led a team and did the interview of both the contractor and the project management consultant. The technical review report was submitted to NEC through CSTB and State Solicitor and DOWI was appointed the Employer's representative. John is appointed the Engineer and he manages both contractor and project management consultants and chairs all project management meetings.

8. ALBE PERSONNEL

ALBE Limited's strength lies in its people; a highly skilled, multidisciplinary team combining international expertise with strong local knowledge. Our personnel bring together technical excellence, industry experience, and a shared commitment to delivering quality outcomes for every project.

Team Composition:

a. Experienced Engineers

- Transport Economist
- Road and Bridge Designers
- Road Management Specialist
- Procurement Specialist
- Project Managers
- Electricians

b. Experienced Technical Personnel

- Civil Engineers
- Architects
- Builders
- Quality Controllers
- Civil Works Inspectors and Supervisors
- Draftsmen and Technicians

c. Other Professionals

- Social Scientists
- Environmental Scientists
- Economists
- Lawyers

Professional Credentials

All ALBE engineers are either part-time expatriates or full-time local registered members of the *Institution of Engineers Papua New Guinea* and the *Chartered Institution of Highways & Transportation* (United Kingdom).

Our Principal Consultant is a contributing member of the *International Road Federation (IRF)* in sustainable road design, construction, road financing, and transport economics. He is a qualified Transport Economist and a member of the *HDM4 Model Expert User Group*.

Integrated Expertise

Our head office in Port Moresby combines the management and international experience of our senior experts with the technical capabilities and local insight of PNG national engineers, drafters, and technicians. This integrated approach allows ALBE to:

- Develop competitive proposals

- Maintain high quality standards
- Deliver projects on time and within budget

Commitment and Work Ethic

At ALBE, we believe your project is *our* project. We build long-term, committed relationships with clients, taking ownership of outcomes and ensuring alignment with shared goals. Our team is passionate, engaged, and driven by a high-performance culture; qualities that our clients consistently value.

Core Project Team

For major assignments, ALBE deploys a dedicated core team of senior resources to provide advice, guidance, and coordination throughout the project lifecycle:

- John Belly Kelly Kaio
- Apin Wazop
- Philip Tandagu
- Sen Hugo
- Kolis Apelis
- Bruise Hugo
- Christopher Sioni
- Cassian Aron

Detailed CVs are provided in Appendix.

9. PROJECT MANAGEMENT TEAM

Curriculum Vitae – John Belly Kelly Kaio

Road Management and Engineering Expert



Personal Information

Year of Birth: 10th April 1972

Contact Address: ALBE Consultants Ltd, P O Box 6345, Boroko, NCD.
Email: jbkkaio@yahoo.co.uk

Expertise and Specialisations:

- a) Road Management and Engineering
- b) Engineering, Procurement & Construction (Lump Sum Turnkey) Contracts
- c) Road Policy & Administration
- d) Road Management & Financing
- e) Complex Procurement (Public Private Partnership and Performance Based Contracts)
- f) Transport Policy and Economics
- g) Road and Transportation Asset Design, Construction and Maintenance Management.
- h) Highway Development and Management Model (HDM4) Specialisation

Education and Professional Status

Qualification	Course of Study or Professional grade	Awarding body	Year awarded
MSc with Merit	Master (MSc) of Science Road Management and Engineering	University of Birmingham, England, UK	2004
Member (IRF)	International Road Federation	International Road Federation, GENEVA	Since 2010
Member (MCIHT)	The Chartered Institution of Highways and Transportation	Chartered Institution of Highways and Transportation, UK	Since 2004
Member (IEPNG)	PNG Institution of Engineers	Institution of Engineers PNG	Since 2002
BSc	Bachelor of Engineering in Civil Engineering	University of Technology, Papua New Guinea (PNG)	1998

Other Professional Affiliations and Experiences

International Membership Affiliations

- Member of the Institution Chartered Highways and Transportation (UK).
- Member of General Assembly of the International Road Federation (IRF), Geneva.
- Executive Committee Member of the Road Economics and Financing Committee of the IRF, Geneva.
- Member of the Institution of Engineers Papua New Guinea (IEPNG)

Publications Papers

- Author of 11 Journal papers National and International research papers; **5** International Papers on Road Management and Financing, and **6** National Papers on Road Sector Reform & Management

Experiences Strategic Leadership Management

- Team Leader Connect PNG Programme (2022 – to date)
- Project Director, High Impact Projects and Connect PNG 2020-2040, Department of Works & Implementation (2013-2021)
- Chairman of the Technical Working Committee of the Subcommittee of the High-Level Project Steering Committee (2020)
- Principal Consultant of the ALBE Consultants Ltd (2012-2020)
- Acting Secretary, Department of Transport & Infrastructure (2011)
- Project Director, Public Private Partnership (PPP) Transaction Office (2012 – 2013)
- Acting Deputy CEO and Planning & Programming Unit Manager, PNG, (Nov 2008-2010)
- Member of General Assembly of the International Road Federation (IRF), Geneva, (since 2010)
- Executive Committee Member of the Road Economics and Financing Committee of the IRF, Geneva (2011)
- Highlands Highway Project Director PNG, (2010-2011)
- Senior Asset Management Consultant, UK (2005-2008)
- President of the MSc Class, Department of Civil Engineering, University of Birmingham, UK (2003- Sept 2004)
- Acting Assistant Secretary (Maintenance Branch), DOW (Oct 2004)
- Principal and Senior Engineer (Maintenance Branch), DOW (2002-2003)
- Provincial Project Engineer and OIC Bialla Branch (2000-2002)

- Interim National Union of Students (NUS) President (1998)
- President of the Student Representative Council (SRC), University of Technology, PNG (1998)
- President of the New Guinea Islands Union of Students, University of Technology (1995-1997)
- President of the Student Representative Council (SRC), Hoskins Secondary School, WNB, (1993 & 1994)
- President & School Captain of Bialla High School, WNB, (1991 & 1992)
- School Captain of Balima Primary School, WNB, (1987 & 1988)

Synopsis

John Belly Kelly KAIO

BSc Civil Eng, MSc Road Eng (Merit), MCIHT (UK), MIEPNG, Reg Engr

John is a Road Engineering and Management Expert with recognised international professional reputation with the International Road Federation (IRF) and World Road Association (PIARC). John has a Master of Science (MSc with Merit) in Road Management & Engineering from the University of Birmingham in UK, a Bachelor of Science (BSc) in Civil Engineering from the University of Technology PNG and is a registered Member of Institute of Engineers PNG, a member of Chartered Institution of Highways & Transport, UK. He is a Member of the International Road Federation (IRF) and World Road Association (PIARC) and a formerly executive member of the Board of the International Road Federation (IRF).

John is a professional highway and transportation design and management Expert with over 26 years of experience in UK and PNG; knowledgeable in the areas of Highway Design and Construction, Road Pavement Deterioration Modelling, Road Administration, Policy and Project Financing, Transport Economics, Highway Maintenance Management and Contract Management.

He is currently the Team Leader Supporting the Connect PNG Programme. He was responsible for developing the High Impact Infrastructure Policies of Government. He is working as the Team Leader responsible for managing the Connect PNG Economic Road Corridors and High Impact Projects of Government in implementing all projects above K100million. He has introduced and developed various specification on asphalts and modified pavement construction. He is responsible managing EPC Lump Sum Contracts.

Formerly, John was Acting Secretary for Department of Transport, Deputy CEO and an Executive Manager for NRA, a Highway Management Consultant and a Pavement Design Engineer in the UK for 4 years. He also has experience in supervisory and management roles in various capacities with the Department of Works and Implementation as Acting Assistant Secretary, Principal and Senior Engineer, Engineer's Representative and as a District Branch Manager.

Employment Objective

Connect PNG and Effective Road Network Management

Connect PNG is the most important policy of Marape/Basil Government. Economic development of country highly depends on multimodal infrastructure development by linking the country by opening potential agricultural regions through major highway links which will induce business and expand economic growth. Financing the Connect PNG Programme remains a huge challenge for the government. Government must shift major road infrastructure financing to the private sector and multilateral partners by involving road users. This can be done through statutory service levels with specific laws to regulate and protect the Connect PNG programme and its earmarked funding from political and bureaucratic influence.

However, traditional outdated engineering practice continues to remain as an impediment to produce new outcomes when there is already a modern shift in new knowledge and techniques in Road Management and Engineering. International Road Federation (IRF) and World Road Association (PIARC) continue to provide knowledge platforms as international best practice on the way roads are being managed as important economic wealth of a country. Roads are Big Business and world agencies around the world are deploying best asset management practice in road maintenance, design, financing and construction.

The 8740 kilometres of National Roads and 9000 kilometres of equally important Provincial Roads are in dire need of minimum routine maintenance. According to DOWI Ministerial Statement, 70-80% of the national road network is in bad condition and requires reconstruction. Since 2011, the road maintenance budget under Recurrent Appropriation has optimally increased from K50million into K200million in 2015 and reduced over time until no budget appropriation in 2021. One could ask why road condition has progressively deteriorated over the years. This is similarly because road routine maintenance budgets have continuously been misapplied and no routine maintenance was done in the last 9 years. This is ethically wrong and must not be allowed to happen by responsible governments.

Modern Road Subsector Reform And Road Financing

When the aspiration of the new government is to enhance the economic well being of the country for effective service delivery, there is high need to restructure the Department of Works based on international best practice. However, wrong advices have seen a modern arrangement of road management in National Roads Authority has been abolished. There is an urgent need to engage expert advice and independent review to align international best practice. The deteriorating infrastructure condition of the country's roads and bridges are not only lack of maintenance funding but, poor knowledgeable and experienced leadership and the enabling road management institutional reform.

When the Government called for a Road Sector Reform in 1998, a consequent result was the development of Road Asset Management System (RAMS) and the National Roads Authority Act 2003. The institutional restructure of Department of Works never eventuated as traditional outdated thinkers tussled to hold functions which were no longer required or transferred to National Roads Authority.

The current need is to restructure the Department of Works to be more focused on current road network needs by commercialising some functions and allow National Roads Authority to perform fully Routine Road Maintenance Roles. The need to separate the service (Routine Maintenance and High Impact Projects) and client (regulation) functions and increase the effectiveness and efficiency overtime is required.

Governance Issues within the Road Sub-sector

The issues of Governance and Strategic Leadership are underpinning economic and infrastructure development in the country. Insensitivity and lack of strategic leadership within the Road Sub-sector does not only curtails economic development and social prosperity but calls for concern on how important decisions are made and ill advices given to Government and Central Agencies are corrected.

The role of Transport Sector is rightly to provide the strategic leadership in infrastructure development, especially in the Road Sub-Sector in Land Transport Mode, Maintenance, Design and Specifications. This should then impact the Economic Development of Papua New Guinea.

The Central Agencies like Departments of National Planning & Monitoring, Finance and Treasury, and political leadership have raised continuous concerns on poor performance, monitoring & reporting on funding released to the Road Sub-sector. Performance is low, there is lack of confidence by the Government and Central Agencies, that the budgeted finances are not spent as intended.

Experience and Employment

2022 - 2025	Programme Manager/Team Leader. Connect PNG and High Impact Project Office
	Currently, John has been appointed as Team Leader for Connect PNG Programme 2020-2040. He supports all High Impact Projects designed, procured, managed and delivered by the High Impact Projects Office through EPC contracts
2019 to 2021	Acting Executive Director (Deputy Secretary), Highway Management Group, Department of Works & Implementation
2013 - 2019	Interim Managing Director, Infrastructure Development Authority (IDA) through Department of Works & Implementation

	<p>John was appointed as the Interim Managing Director to develop and establish the Infrastructure Development Authority (IDA) through a policy platform by Declaration of Priorities in the Alotau Accord at the eve of forming the Coalition Government in August 2012. This was in direct response to the Government commitment to improve the capacity of its own public service mechanisms. It was clearly established that in the infrastructure sector, the absence of an 'oversight' body was a critical factor. An 'oversight' body was also a necessary tool for NEC to ensure accountability, achieving project targets, value for money, delivered on time and within budget.</p> <p>IDA was to manage the present technical and procurement incompetence which is a money wastage, poor quality infrastructure, excessive over expenditure and lack of guarantees for long maintainability of infrastructure projects. IDA was to carry out gateway review on all national strategic infrastructure projects from inception to project closer to ensure that every phases of the project life cycle has under-gone rigorous analysis. IDA was invoke its "Step in Powers" to manage failed projects from the sponsoring state agencies or if it is directed to do so by the NEC.</p>
2012 To 2019	<p>Project Director, Connect PNG and High Impact Projects, Department of Works</p>
	<p>He is also the Project Director responsible for managing the High Impact Projects of Government. He is responsible for project economic appraisals, project design, procurement and construction supervision as the appointed Engineer or Superintendent of high impact projects. All High Impact Projects are project's financial cost that are above K100million in contract price.</p>
	<p>Acting Transport Secretary, Department of Transport</p>
Feb 2011- Nov 2011	<p>John was also the Acting Secretary for Department of Transport for 9months from February 2012 to November 2012. He was responsible for providing leadership to the Department as the Secretary and Chief Accounting Officer of the Department. He started the department reform to include the Infrastructure component on Policy Development. Also responsible for developing and finalising the National Transport Strategy 2012-2020. During his tenure as acting Secretary, he was responsible for continuously supervising and implementing the jetty programmes and maintenance of the navigational light houses around PNG. He was also responsible for advising the design and development of the Port Moresby Main Wharf within a 2km corridor between the Hanuabada and Tatana Villages.</p>
Sep 2011 to 2012	<p>Public Private Partnership (PPP) Transaction Office Project Director.</p> <p>John has been seconded to develop and establish the Public Private Partnership (PPP) Transaction Office within the Transport Sector. He has been responsible for developing policy submissions, technical documentation including tailored modalities for PNG context and its applicability, developing specialized Terms of Reference (TOR) for all required consultants (procurement, legal, technical, financial, economics, etc). Currently, John is managing specialized international and national</p>

	consultants on PPP Alliance Program modality, a hybrid model purely developed for resource rich countries like PNG.
Nov 2008 to February 2011	<p>PNG National Roads Authority (NRA) Deputy Chief Executive Officer/Planning & Programming Unit Manager: John was the Deputy Chief Executive Officer responsible for the managing daily technical, financial and administrative activities of the authority.</p> <p>He was also an Executive Manager within the National Roads Authority (NRA) responsible for policy and managing the Planning & Programming Unit of the authority. John was brought back from the United Kingdom to support the CEO and the NRA Board to complete the Road Reform and fully establish the Road Maintenance Fund and the Road Agency responsible for road maintenance and development. He has fully established a strong maintenance practice in NRA by introducing the Output Service Level Performance Based Contracts in PNG for the first time. He was also responsible for design and scoping of the road maintenance packages and implementation.</p> <p>He was responsible for reviewing existing road design standards in PNG recommended new design standards to be used on the Highlands Region Road Improvement Investment Program (HRRIP) funded by the Asian Development</p>
October 2005 to November 2008	<p>Opus International Consultants Ltd (UK) and Mouchelparkman Plc Highway Asset Management Consultant: John has 4 years of work experiences in the UK and is very familiar with Public Private Partnership (PPP) and Long-Term Performance Based Road Maintenance Contracts, Road Financing and Delivery Models, the UK Design Manual for Roads & Bridges (DMRB) and has experiences in pavement investigation and design. He has helped the Department for Transport, UK and most local authorities in London, England, Wales and Scotland.</p> <p>His role was to design road pavements, investigate mode failure on pavements and design maintenance schemes. He is was responsible for the developing the pavement deterioration model using the pavement data from the UK Pavement Management System. He correlated the deterioration model with the financial modelling and responsible for developing annual budgets Scottish Executive Road Council and all London Boroughs. He was also responsible for developing Highway Management Plans and Road Asset Valuation for North and West Midland Counties of England and Scotland. He was also responsible for managing Private Finance Initiative (PFI) on the highway and street lighting which included performance-based contracts for the Sunderland County of England.</p>
Sept 2006 – to Nov 2008	<p>Opus International Consultants Ltd (UK) Highway Asset Management Consultant: John was responsible for providing pavement design and asset management consultancy services to Opus clients throughout the UK. He was responsible for developing Road Asset Management Systems and Asset Deterioration Modelling, highway pavement design, Road Asset Management Systems Review as</p>

	<p>part of business case development for selling the services of pavement deterioration modelling and forward works programming, UKPMS Data Analysis, Asset Valuation, and developing Highway Asset Management Plans including individual asset Lifecycle Plans, Pavement and Footways Forward Works Programmes, Data Management Strategy, Network Change Management, developing Level of Service to suit local authority practices and available budget.</p>
Oct 2005 – Sep 2006	<p>Mouchelparkman Plc Pavement Management Engineer: He was responsible for performing various assignments in the areas of Highway Asset Management and Systems which included; Managing UK Pavement Management System, Scottish Executive Road Information System (SERIS), Producing Best Performance Indicators (BVPI), Data Collection and Analysis of Coarse Visual Inspection (CVI) data, Detailed Visual Inspection data and Surface Condition Assessment of the National Network of Roads (SCANNER) condition data, Pavement Investigative Evaluations, scheme development and monitoring, forward works programming, and pavement design analysis, Organising and managing condition data surveys, development of rules and algorithms for maintenance prioritisation for applications in highway maintenance management.</p>
August 2001 – Oct 2005	<p>Department of Works, Papua New Guinea Assistant Secretary, Principal and Senior Engineer: John started his engineering career in Department of Works and worked as an Acting Assistant Secretary – Road Asset Management & Road Maintenance Coordination Branch. He was the Principal Engineer responsible for road maintenance design and scoping. Also responsible for the managing the road asset management and road inventory and condition data. He was the Senior Engineer with the road asset management and maintenance coordination responsible for developing and managing all workplans for National Road Network of the country.</p> <p>He was the Advanced Highway Development and Management Model (HDM-4) Specialist responsible for Economic Analysis and Road Project Proposals for Asian Development Bank and World Bank in PNG. He was also responsible for developing Forward Works Programmes and Annual Infrastructure Budgets on Roads and Bridges for DOW. He has experiences in research on Highway Asset Management Systems and Pavement Deterioration Models with international publications.</p> <p>John was selected among other engineers as the most proficient engineer in Department of Works in 2003 and was sent to University of Birmingham to do Master (MSc) of Science in Road Management and Engineering. John excellently finished with a Master (MSc) of Science with Merit in his Class in September 2004.</p>
January 1999 to August 2001	<p>Department of Works, Papua New Guinea District Branch Manager and Provincial Project Engineer: He was the Provincial Engineer in West New Britain (WNB) before he was selected among other engineers to engaged as the counterpart to Finnish Consultants in the development of the Road Asset Management Systems (RAMS).</p>

He was also the Branch Manager (OIC) in Bialla District in WNB. He was responsible maintenance design and scoping, road maintenance works, river training, bridge construction and maintenance. He was also the responsible for the supervision as a project engineer and Engineer's Representative (Project Manager) on the construction of the 80metre freespan Eastbridge on Balima Bridge in WNB. This was the first 80m freespan Eastbridge construction in PNG. John has engineering challenges in the early days of his engineering profession that created him to be the more informed engineer and an expert as he is today.

He was responsible for Administrative and Technical Responsibilities of DOW in the district and project supervision in West New Britain Province (WNB), administrating 15 public servants and 32 casuals on day labour and Implementation of AusAID funded Road Maintenance and Bridge Replacement Programs.

Project Experience / Managerial Roles

Client

Department of Works & Highways

Project Role

John as the Team Leader of the Connect PNG and High Impact Project Office of Government responsible as the managing all reference designs, procuring all High Impact Projects which are more than K100million. The high impact projects are all Engineering, Procurement and Construction (EPC) Lump Sum Contracts which requires high level of specific project design knowledge to develop relevant Schedule of Works, procurement and contract negotiation, contract administration and project management skills. He is managing the following EPC Lump Sum contracts as the Engineer to the Projects;

Client Project Role:

Department of Works & Highways

- Mt Hagen 4Lane Upgrading and Redevelopment – K265million**
Project Director/Engineer: This is an FIDIC EPC Lump Sum Project that is extended 13.7km from Kagamuga Airport to Keltiga Turnoff. This project is financed by the Export Import (EXIM) Bank of China. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications with tailor designed asphalt and modified cement-based pavement design for subbase and base course materials.
- 9Mile to Yalu as Section 2A of the Lae to Nadzab Airport Turnoff – K134million**

Project Director/Engineer: This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 7km from 9Mile

BuloloWau Turnoff to near Yalu Bridge (Chainage 16+040). This project is financed by the Independent State of PNG. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project.

- **Bugandi Roundabout to 9Mile WauBulolo Turnoff of the Lae to Nadzab Airport Turnoff section of Highlands Highway– K235million**

Project Director/Engineer: This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 9km from Bugandi Roundabout to 9Mile BuloloWau Turnoff. This project is financed by the Independent State of PNG. The contractor has designed the 4Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications with tailor designed asphalt and modified cement based pavement design for subbase and base course materials.

- **Kieta Wharf to Toinamapu in Central Bougainville – K156million**

Project Director/Engineer: This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 45km from Kieta to Toinamapu. This project is financed by the Independent State of PNG. The contractor has designed the 2Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications. This project has pavement stabilisation of the base course as a variation.

- **Toinamapu to Buin Kangu Wharf in South Bougainville – K238million**

Project Director/Engineer: This is an FIDIC EPC Lump Sum Design and Construct Project that is extended 60km from Toinamapu to Kangu Wharf in Buin. This project is financed by the Independent State of PNG. The contractor has designed the 2Lane Road and the design reviews are done by independent design and project management consultants who are engaged on the project. John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications. This project has pavement stabilisation of the base course as a variation.

- **Ambua Lodge Turnoff to Komo – K290million**

Project Director/Engineer: This is a FIDIC Red Book Schedule of Rates Contract. This Project is extended 52km from Ambua Top to Komo in Hela Province. This project is financed by the Independent State of PNG through a Tax Credit Programme funded by ExxonMobil. The independent consultants have designed the 2Lane Road and the design reviews are done by Department of Works & Implementation (DOWI). John manages both contractor and project management consultants and chairs all project management meetings. John is the Engineer to the Project. This project uses the Australian Queensland Roads and Bridges specifications.

- **New Enga Provincial Hospital Project – US\$159million (PGK406million)**

Project Director/Engineer: This is a FIDIC Red Book Schedule of Rates Contract. This Project is the New Enga provincial Hospital Building in Enga Province. This project is financed 85% by EXIM Bank of China and 15% by the Independent State of PNG. The independent American consultants have designed the building and have also supervised the project for 13months with a minimal progress of 8%. DOWI was asked to be the Employer's Representative by the Enga Provincial Government. John led a team and did the interview of both the contractor and the project management consultant. The technical review report was submitted to NEC through CSTB and State Solicitor and DOWI was appointed the Employer's representative. John is appointed the Engineer and he manages both contractor and project management consultants and chairs all project management meetings.

**Client
Project
Role:**

PNG National Roads Authority

Apr 2010 to Date

Various Project initiatives as part of the National Roads Authority

- **Technical Committee Chairman:** John is leading a NRA and Department of Works Technical Committee to review the Road Design and Maintenance Standards for Road Specifications and Regulations in Papua New Guinea. This was in response to short span of pavement design life relating to increase traffic loadings and differing regional environmental conditions of the country. There are also concerns of poor workmanship and compromise in road construction material specifications.
- **Highlands Highway Project Director:** He has been appointed by NRA Board as the Highlands Highway Project Director to manage the Exxon Bechtel Report on the Highlands Highway. He has developed the Working Document on how the Highlands Highway will be documented, developed and managed. He is currently managing two (2) Technical and Financial Strategic Advisors to review the Exxon Bechtel Report to phase the project and propose bankable documentation for the Government of PNG. He is responsible for reviewing of design specifications to suit Papua New Guinea Roads and Bridges Design Specifications and Maintenance Standards.

- **NRA Roads Maintenance Management Contracts:** Responsible for Project Managing, Road Maintenance Works Scopes and preparation of Bill of Quantities (BOQ) for Periodic and Routine Maintenance Works on the Highlands Highway (Miunde-Togoba Junction, 83km), Magi Highway (Bautama Bridge-KempWelsh Bridge, 75km), Hiritano Highway (End of Doa Plantation to Aropokina Bridge, 48km & Bereina Junction to Apanaipi Bridge Iokea Junction, 34km), New Britain Highway (Yamule Bridge to Kimbe DOW Junction, 116km), Sepik Highway (Nagum Bridge to Tonudubu Village, 27km & Warabung Bridge N0.1 to Maprik Station Water Treatment Plant, 30km), and Costal Highway (Kreer Junction to Hawain Bridge, 28km). **Total Contract Value of K75.0 Million.**
- **ADB Procurement of Support Consultants for Highlands Region Road Improvement Investment Program (HRRIP):** Responsible for procuring project management consultants for both the improvement and maintenance management components of this program. He was responsible for Evaluating all Expressions of Interest (EOIs) by International & Domestic Consultants and Short-listed and pre-qualified them for the Submission of Request for Proposal (RFP). Supported ADB staff to finalize the required RFP for the Maintenance Management Component. He was part of the Technical Evaluation Committee (TEC) that evaluated both RFPs for the Improvement & Maintenance. He was responsible for finalizing evaluations reports, approvals by ADB, development of documentations for National Executive Council (NEC) Submissions.
- **Development of NRA Quality Service Level:** NRA has endeavored to address the current increase vehicle operating cost and poor road user service on the Strategic National Highways of the country. With this objective, NRA has adapted & introduced international best practice into its maintenance contract documentations. John has been responsible for the development & tailoring the quality services levels and performance indicators to current PNG maintenance practice. In the Cyclic-Based Maintenance Contract Documents issued and used by NRA, the “NRA Service Level Specification” is enclosed as an additional specification.
- **Development of NRA Maintenance Policies:** National Roads Authority is a new Road Agency established by Act 2003 and became fully operational in Year 2007 through the appointment of the CEO, Mr Roy H. Mumu. John was recruited from the Opus International Consultants, UK as one of the key managers responsible for the programming & planning aspects of the authority. He is also responsible for developing Maintenance Policies and Standards tailored to achieve NRA objectives and performed its enacted functions. He had developed the following Maintenance Policies:
 - Cyclic – Based Maintenance Contracts driven by Quality Service Level; the current NRA Maintenance contracts are developed to be under 4 cycles driven by service levels.
 - Developing Local Contractor Capacity through distribution of Maintenance contracts; realizing current over-run in road improvement & maintenance time, quality and quantity, John has developed approaches

to develop small contractor capacity through training and distributing maintenance works activities.

- Community Economic Empowerment; Maintenance categorise into Technical Maintenance Component and Non-Technical Component. The Non-Technical Component will be undertaken by Road Corridor Dwellers along the contracted road projects.
- Maintenance Performance Indicators and methodology to carry out maintenance works and evaluate performance compliance.
- Long-Term Road Network Management; the cyclic - based maintenance is a hybrid approach as a transition into long-term road network maintenance management contracts.
- **Development of Contract Documents:** Since NRA is a newly established Road Agency, NRA has endeavoured to adapt contract documents tailored the documents to stipulate additions and requirements to manage and achieve NRA objectives and aspirations. He was responsible for developing the first of contract documents for the authority on traditional FIDIC contracts with hybrid cyclic-based maintenance approaches. He has developed a NRA tailored Maintenance Service Level Specification which is used as an addition to the usual FIDIC contract document. He adapted the World Bank developed Out-put Performance Based Maintenance Contract document and review and tailored the contract document to suit Papua New Guinea Roads and Bridges Design Specifications and Maintenance Standards.
- **Programming & Planning Maintenance Works & Budgets:** The programming & planning maintenance works with the related budget is the main responsibility of the Unit. John being the Unit Manager has developed the maintenance work plans and budget for the Year 2010. He has developed budget documentations to submit to the Departments of National Planning & Monitoring and Finance & Treasury. He has also supported the Transport Sector Budget Development Committee to develop the combined sector budget.
- **Developing TOR & Managing Short-Term Consultants:** NRA is using the Private Sector to develop policies, procedures and document them for the operational purposes. For these purposes, John has developed Terms of Reference (TOR) for Road Fund Development, Road Use Charge, Road Asset Management Systems, Weighbridge Technical Advice, Performance – Based Maintenance Contract Training, Local Contractor Capacity Development Training on Bid Document Development and Maintenance Works Unit Rate Derivation from First Principle through Machine Equipment Output, Material and Labour rates. He is also responsible for managing the inputs by the specialist consultants to ensure the delivery of the desired outcomes.
- **Member of Important National Committees:**
- **PNG Public Private Partnership (PPP) Task Force;** The National Executive Council (NEC) has endorsed the PPP Policy in November 2008. He is equally knowledgeable on Public Private Partnership (PPP)

modalities of contracts. He has been the key member of the Papua New Guinea PPP Taskforce responsible for developing the PPP policy of the country, PPP Law (Act), PPP Regulations, PPP Administrative Structure in relation to the establishment of the PPP Centre. He has supported the Department of National Planning in analysing & preparing project concept note for the PPP pipeline projects as the pilot projects to be undertaken. An invaluable member who played an important role in supporting the Task Force in reviewing and managing expert consultant inputs, given his international experience on PPP Projects from the UK.

- **National Transport Strategy Committee (Land Transport Mode);** He is an important Taskforce member of the National Transport Strategy (NTS) 2011 - 2030 Development Committee. He is the key person representing the Land Transport Mode of the Transport Sector. Most of his involvement is to demarcate responsibilities between Department of Works and National Roads Authority and to establish the future of each entity in view of the Government's Vision 2050 Plan. Most of his initially developed models of maintenance service delivery are being incorporated in the NTS.

Short Training Courses:

- **Senior Road Executive Course:** The establishment of Road Agencies around the World is part of a modern trend in Road Sector Reform pioneered by the University of Birmingham in the UK. John has completed a MSc (Merit) in Road Management & Engineering from this University. John being the key manager responsible for the full development & establishment of NRA has been sent to this University to attend the Senior Road Executive Course conducted in association with the International Roads Federation (IRF). This will enable NRA to adapt lessons learnt from other established Road Authorities through case study presentations and peer discussions.
- **ADB Consultant Procurement Course;** This course is normally tailored and offered by the Asian Development Bank (ADB) to meet skill shortage in procuring consultant services. With reference to the recent ADB Loan to finance the Highlands Region Roads Improvement Investment Programme (HRRIP), key staff within NRA and DOW have been specifically trained by the ADB Procurement Team in CSTB Board Room in Port Moresby for a week. John was one of the 3 keys managers nominated to attend this course.
- **ADB Project Management & Administration Course;** This also a course offered by the Asian Development Bank (ADB) for the procurement of Goods & Services, and Project Management & Administration. Key staff within Government Departments and Agencies around Asia Pacific has been selected to attend this course. The course was offered by the ADB Procurement Team at the Lamana Hotel in Port Moresby for two (2) weeks. John was one of the 2 keys managers nominated to attend this course.
- **New Zealand Low Volume Roads Management Conference:** This conference was a workshop type tailored for road managers who are responsible for managing lowly trafficked but important roads in

developed and developing countries. The workshop attracted case studies and lesson learnt presentations from developed countries as well as developing countries like Vietnam, Cambodia, Laos, etc whose rainfall and terrain which are similar to PNG. John was nominated with the Contract Manager to attend this workshop. Some of the discussions and lesson learnt adapted from this workshop has been used to tailor quality service level to meet road user demands on strategic national roads in PNG.

Client	Southampton City Council	Feb 08 – Apr 08
Project	Pavement Design for Southampton 46-47 Cruise Ship Berth Terminal	
Role:	This project included the design of the Foundation and Pavement Design for the 46-47 Berth Cruise Terminal in Southampton. John was responsible for this design project where he analysed destructive and non-destructive investigative data to recommend different economic design options based on available material types and the value of their uses. John innovatively recommended the use of Tensar Geosynthetic materials with different geogrids sizes which reduced the thickness of the sub-base. He also recommended methods on the use of existing crushed excavated pavement materials won on site as capping layer. He recommended stabilisation as an option where there weren't enough crushed excavated materials won on site to use as capping. He recommended stabilisation to form capping with the use of lime and cement and with appropriate material use of where the client was impressed with the outcome.	
Client	Southampton City Council	Mar 08
Project	Technical Review for Heavy Pavement Design of the Southampton Dock	
Role:	John was responsible for the Technical Review of the Southampton Dock area where he did an expert technical view to validate all design calculations done by the client's consultant. He did all independent technical design calculations to validate the designs before the client approved the technical designs of pavement for the dock area constructions. The project was to design for heavy equipment and vehicles loading and turning including loaded and empty stakes of shipping containers.	
Client	Southampton City Council	Aug 08
Project	Ocean Gate Roundabout Pavement Design	
Role:	John has undertaken the Ocean Gate Roundabout Design to Dock Berth area. The existing condition of the roundabout was structurally unsustainable and had foundation problems of which John was tasked to propose the design of the reconstruction works. John reviewed previous design recommendations and recommended a heavy loading pavement design approach to accommodate loadings from heavy laden trucks turning on the roundabout. He innovatively recommended that instead of the traditional reinforced rigid concrete pavement design, he introduced the use of steel fibre as reinforcement in-situ concrete; therefore he did material conversions to complete the design.	
Client	Southampton City Council, Coventry City Council, London Borough Councils (Haringey, Sutton and Croydon)	Feb 08 – Nov 08

Project	Highway Carriageway and Footway Treatment Prioritisation and Condition Deterioration & Financial Modelling	
Role:	<p>John was responsible for the analysis of UKPMS SCANNER, DVI and CVI condition data through the UKPMS database to develop forward works programmes with the use of Opus Carriageway Treatment Prioritisation Model. He was responsible for reviewing the system and developing algorithm models to re-prioritise outputs to suit maintenance needs. He did financial modelling to predict the Best Value Performance Indicators (BVPI) for 10 years based on road condition modelling with the related budget requirements to meet the UK Department for Transport established BVPI road condition trend on the England road network.</p> <p>He also developed a Footway Treatment model where he used to replicate Condition Indices and developed a decision tree to use for the footway asset. He did financial modelling to predict the Best Value Performance Indicators (BVPI) for 10 years with the related budget requirements to meet the UK Department for Transport established BVPI footway condition trend on the England footway network.</p> <p>He was also responsible for plotting all forward works programme outputs on the GIS for high level management to support their decision making when presenting to the elected Members of the City Council.</p>	
Client	CSS Wales Group of Authorities (various)	Nov 07 – Nov 08
Project	Highway Asset Valuation	
Role:	<p>John was responsible for determining the Gross Replacement Cost and the Depreciation Value of Road Assets. He used UKPMS rules and guidelines to determine the possible maintenance treatment option at current condition through the review and analysis of SCANNER, Visual Condition data through the development of Access Database to suit the analysis. This project was developed for all 22 local authorities in Wales as part of the Highway Asset Management Plan development.</p>	
Client:	Coventry City Council	Dec 06 – Nov 08
Project:	Highway Asset Management Plan Development – Developing of Lifecycle Plans for 8 asset groups	
Role:	<p>The project was part of the Highway Asset Management Plan Development for Coventry City Council which involves developing of highway asset lifecycle plans, determining level of services, data management and asset valuation. John was responsible for developing the lifecycle plans for all (8) asset groups which includes carriageways, structures, footways, drainage, lighting, street furniture, traffic signals and arboriculture.</p>	
Client:	Sunderland City Council, Tyne and Wear	Jun 07 – Nov 08
Project:	Highway Asset Management Plan Development – Developing of Lifecycle Plans for 9 asset groups	
Role:	<p>John was responsible for developing the Highway Asset Management Plan for Sunderland City Council in Tyne and Wear Consortium which involved the development of the whole HAMP and 9 lifecycle plans through review of current practice and systems, and interviews with asset owners. The lifecycle plans include carriageways, footways, drainage, structures, lighting, traffic signals, street furniture and arboriculture.</p>	
Client:	Solihull Metropolitan Borough Council	Jun 07 – Nov 07

- Project:** Highway Asset Management Plan Development – Developing of Lifecycle for 5 main Groups Assets
- Role:** The project was part of the Highway Asset Management Plan Development for Solihull Metropolitan Borough Council which involved developing of highway assets lifecycle plans. John was responsible for developing the lifecycle plans through interviews with all asset owners and the 5 asset groups include carriageways, structures, drainage, footways and street lighting.
- Client:** CSS Wales Group of Local Authorities **Apr 07 – Jun 07**
- Project:** Highway Asset Management Plan Development, State of the Nation Report – Data Analysis and Current Practice Review
- Role:** The project was part of the Highway Asset Management Plan development for the Wales Group of Authorities currently undertaken by Opus International Consultants. The State of the Nation Report was the review of the current practice, the drivers for asset management within authorities in Wales. John was responsible for analysing SCANNER condition data, reviewing the current asset management practice, evaluating historic maintenance investment budgets and development of graphical reports as part of the State of the Nation report.
- Client:** CSS Wales Group of Local Authorities **Mar 07**
- Project:** Reviewing of Halcrow Method for Maintenance Backlog Calculation for Asset Valuation Project
- Role:** John was responsible for the Technical Review of the current method (Halcrow developed) used by the Wales Group of authorities for Maintenance Backlog Calculation. The review was to investigate whether the method or the outputs were technically adequate to use it as part of the Opus Asset Valuation exercise. The recommendations from this review are currently being used by Opus for the Asset Valuation works for the local authorities.
- Client:** Coventry City Council **Dec 06 – Nov 08**
- Project:** Data Management Strategy and Network Change updates
- Role:** John was responsible for developing a Data Management Strategy for the City Council through the review of current practice, data needs, data quality assurance and how data support and influence decision making. This project also included the development of procedures on how the asset change in the highway network is captured and is uploaded onto the council's Information Management Systems like GIS and UKPMS database.
- Client:** North East Lincolnshire Council **Dec 06**
- Project:** Defining Data Standards and Requirements for the Council's UKPMS
- Role:** This project involved the task of Reviewing the Data Fields and Features of the council's inventory data within the UKPMS. John completed the review as an audit that recommended the essential data fields and developed standard fields for the client's UKPMS database.

Client:	Opus International Consultants (UK) Ltd	Sep 06 – Nov 06
Project:	Review of Pavement Asset Management Systems in the UK and the Development of Business Case on Pavement Deterioration Modelling	
Role:	John was responsible for reviewing pavement management systems currently being used in UK highway asset management service and for the recommendation of the asset management system that would provide the client services on pavement deterioration modelling, forward works programming, whole life costing, maintenance strategy analysis, asset valuation and to provide all required services relating to system outputs to support decision making by highway engineers and local authorities. He was also responsible for producing business service profiles and platforms of the services Opus is offering in the area of pavement deterioration modelling and asset management in the UK.	
Client:	Scottish Executive through TranServ Ltd	May 06 – Aug 06
Project:	Managing SERIS and Development of Scheme, Statement of Intent and Forward Work Programming	
Role:	John was responsible for managing and using the Scottish Executive Road Information System (SERIS) performing responsibilities including analysis of High-Speed Road Monitor (HRM) and deflectograph data, pavement evaluation and design, detailed visual condition (DVI) surveys, producing statement of intent for 14 schemes, map overlays and forward work programming for 2006/2007 financial year for the Northwest Trunk Roads of Scotland which included the annual infrastructure budget.	
Client:	Saint George Hill	Apr 06 – May 06
Project:	Development of Forward Works Program	
Role:	John was responsible for analysing National Maintenance Road Condition (NMRC) and Ground Radar Penetration (GRP) data. He was responsible for developing Condition Indices and Algorithm models which were used for the Forward Works Programming and maintenance treatment prioritisation.	
Client:	Essex County Council	Nov 05 – Mar 06
Project:	Managing UK Pavement Management System (UKPMS)	
Role:	This project was part of the Highway Maintenance service to the Essex County Council by Mouchelparkman Plc. John was responsible for Managing the UKPMS, Analysing Traffic Speed Condition Surveys (TRACS) data, Data Quality Control, producing Best Value Performance Indicators (BVPI), Map Overlays, and Scheme Development and Monitoring.	
Client:	Department of Works, Papua New Guinea	2002 - 2005
Project:	National Infrastructure Budget for Roads & Bridges	
Role:	John was responsible for developing and coordinating the 2003 and 2005 National Budgets for the Roads and Bridges in PNG. This responsibility included Network Analysis and Forward Works Programming, works programme submission to Senior Management of DOW, and has also assisted in presenting the budgets to the Departments of National Planning and Finance for Financing.	

- Client:** AusAID and Papua New Guinea Government **2005**
Project: PNG Road Transport Sector Support Programme Study for AusAID on Nationwide Approach Investment on the Road Transport Sector
Role: John was responsible for the initial Economic Viability Study of the First Top 30 National Roads in the country (PNG) through the use of HDM4 System and developed maintenance work plans for the AusAID funded provinces for the maintenance works programme reviews.
- Client:** Joint ADB and the Papua New Guinea Government **2005 & 2007**
Project: National Roads Authority and Roads Fund
Role: John worked with the external consultants in developing the duties, responsibilities and the functions of the Line Managers and staff of the PNG National Road Authority (NRA). He has also developed presentations and supported the NRA Board Chairman and CEO for presentations at the PNG-Australia Business Council Meetings in Port Moresby and Cairns. He has developed the operation function of the NRA along side with the existing DOW and provided advice on the type of road funds and its operational issues.
- Client:** Joint World Bank and Papua New Guinea Government **2004 – Oct 2005**
Project: Development of Bridge Management System (BMS)
Role: John worked as Principal and Senior engineer in partnership with the Opus International Consultants in developing System Specification and Development, managing data collection and coordinating training for national engineers in DOW Headquarter and Provincial Offices for the sustainability of the project. Bridge Programme Module Analyst responsible for developing forward works programme and prioritisation of works programme through Multi Criteria Analysis.
- Client:** Joint ADB and the Papua New Guinea Government **Aug 2001 - 2005**
Project: Development of Road Asset Management System (RAMS)
Role: John worked as Principal and Senior Engineer in partnership with the FINROAD Consultants in developing the RAMS System, Managing and monitoring system specifications and consultant input. Producing monthly report to ADB and DOW. He was also responsible for reviewing the RAMS components and the Consultants TOR, Managing data collection and coordinating training programmes for national engineers. He was responsible for Forward Works Programming, Planning and Economic Analysis for ADB and World Bank Road Projects with the use of HDM4 Model.
- Client:** Department of Works and AusAID Papua New Guinea **2000 – Aug 2001**
Project: Road Upgrading and Maintenance, and Bridge Replacement Projects
Role: John was responsible for design, construction and managing of Road Upgrading and Maintenance works and Bridge Replacement projects in the West New Britain Province as a Provincial Project Engineer. The responsibility involved the development of BOQ through road condition assessment, project and contract management, Design of Bridge Abutment, Construction of Bailey

Compact 100 & 200 bridges, Replacement of timber decks to steel decks and environmental impact assessment.

Client: Department of Works Papua New Guinea **1999 - 2001**
Project: Road and Bridge Maintenance and Balima Super Eastbridge Construction.
Role: John was the Engineer's Representative (Apr 2000 – Aug 2001) and project engineer on the Balima Super Eastbridge Construction; the only free span of 80 metres in the country. He was also responsible for the project and contract management roles for other Road and Bridge Maintenance Works funded by the Department of Works under force-account. He was also responsible for managing the Technical and the Administrative Responsibilities of DOW in the district, administrating 15 public servants and 32 casuals on day-labour.

Research

John has research interests in highway road engineering, highway management and engineering, particularly on pavement deterioration modelling and pavement design, transport economics, economic appraisal of road investment projects, and development of road management systems, road administration and financing. John has carried out a number of research projects in his role as a Road Management Specialist. He has authored number of papers and also made several presentations on road management, the HDM-4 system and Road Management Systems at a number of conferences nationwide and internationally. The following is a list of research projects undertaken in the early six (6) years:

2009 – to 2011 ***Papua New Guinea Back Approach Model on Long Term Performance Contracts.***

This project model is first of its kind developed in PNG by the National Roads Authority (NRA) to apply the Long-Term Performance Based Road Maintenance Contracts where there is lack of knowledge capacity within both the Public and Private on the contract type. The development of Quality Service Level to measure contract outputs and complete restructure of Bill of Quantities (BOQ) in contract documents is a progress in procurement which is producing results that are sustaining the road condition.

2003 - 2004 ***Pavement Performances of HDM-4 Model – Modelling to suit the PNG climatic condition.***

This research was carried out to model the pavement performance to suit the Papua New Guinea (PNG) climatic condition using the Highway Development and Management (HDM4) software model. This project was being funded by the PNG National Government and was carried out in the University of Birmingham, UK.

2001-2004 ***Pilot Implementation of Road Management Systems in Papua New Guinea***

The project aimed to improve decision-making on expenditures in the road sector by effective implementation of decision-support methods and computerised tools for use by the Department of Works (DOW) and National Roads Authority to evaluate maintenance works needs and programmes.

This project was funded by the Asian Development Bank (ADB) as a technical assistance to DOW.

- 2000** ***Investigating the use of reinforcing fabric in bridge abutment construction in the context of Papua New Guinea***
 This project was a bridge maintenance innovation on abutment design and construction for a Bailey bridge at Kabaiya River, Bialla District in West New Britain Province, PNG. The maintenance project was funded by the Department of Works through its maintenance revenue budget.
- 1998** ***Investigating the use of volcanic pumice in Concrete Production in the Context of Papua New Guinea.***
 This project was jointly funded by the PNG Halla Cement Manufactures and the University of Technology, PNG.

Publications and Papers

The Management of Road Projects in Papua New Guinea;

13th REAAA Conference, **Kaio. B.K. John** and Mumu. H. Roy, Songdo Convesia, Incheon, Korea. 23-26 September 2009

Road Asset Management Systems of Papua New Guinea;

15th International Road Federation (IRF) World Conference, **Kaio. B.K. John**, Mumu. H. Roy, Sirvio Konsta and Rannistee Pete, Bangkok International Trade and Exhibition Centre, Bangkok Thailand. June 14-18, 2005.

The Application of Modern Techniques in Reforming and Financing Road Management in Papua New Guinea;

Institute of Engineers Papua New Guinea International Conference, **Kaio. B.K. John**, and R. H. Mumu, Madang, Papua New Guinea, April 25-28, 2005.

The Technology Application of Road Asset Management in Papua New Guinea;

Kaio. B.K. John, N. Banabas and Sangrador E. Jr. Institute of Engineers International Conference; Madang, PNG. April 25-28, 2005.

Road Asset Management System (RAMS) and Road Sector Reform in Pacific Region (Papua New Guinea);

PIARC XXIInd World Road Congress, **Kaio. B. K. John** (PNG), P. Jusi (Finnroad), R. H. Mumu (PNG), Greg Ume (PNG), Durban (South Africa), 19-25th October 2003.

Experiences in Implementing New Road Asset Management System (RAMS) used in the Pacific Region (Papua New Guinea);

The Transport Research Board (TRB) International Conference on Low Volume Roads, R. H. Mumu (PNG) and **Kaio. B. K. John** (PNG), E. E. Sandgrador (PNG), and P. Jusi (Finnroad), Reno, Nevada, USA, 23rd - 27th June 2003.

The Presentation of the National Road Upgrading and Maintenance Budget 2003;

R. H Mumu and **Kaio. B. K. John**, The National Parliament House of Elected Members, Papua New Guinea, November 2002.

Use of Reinforcing Fabric in Bridge Abutment Construction in the Context of Papua New Guinea;

Kaio. B. K. John and Dr. Khandaher. M. A. Hossain; The Institute of Engineers PNG International Conference, Papua New Guinea, August 2001.

Use of Volcanic Pumice in Concrete Production in the Context of Papua New Guinea;

Dr. Khandar. M. A. Hossain and **Kaio. B. K. John**; The Institute of Engineers PNG International Conference, Papua New Guinea, September 1998.

The Analysis of Education in Papua New Guinea as a Developing Nation;

Kaio. B. K. John; National Education Summit, National Parliament House, Papua New Guinea February 1998.

The Analysis, Implications and Alternatives of User Pay Policy in the Future of Education;

Kaio. B. K. John; as Student Representative Council President. A submission to The Prime Minister; The Papua New Guinea University of Technology, February 1998.
