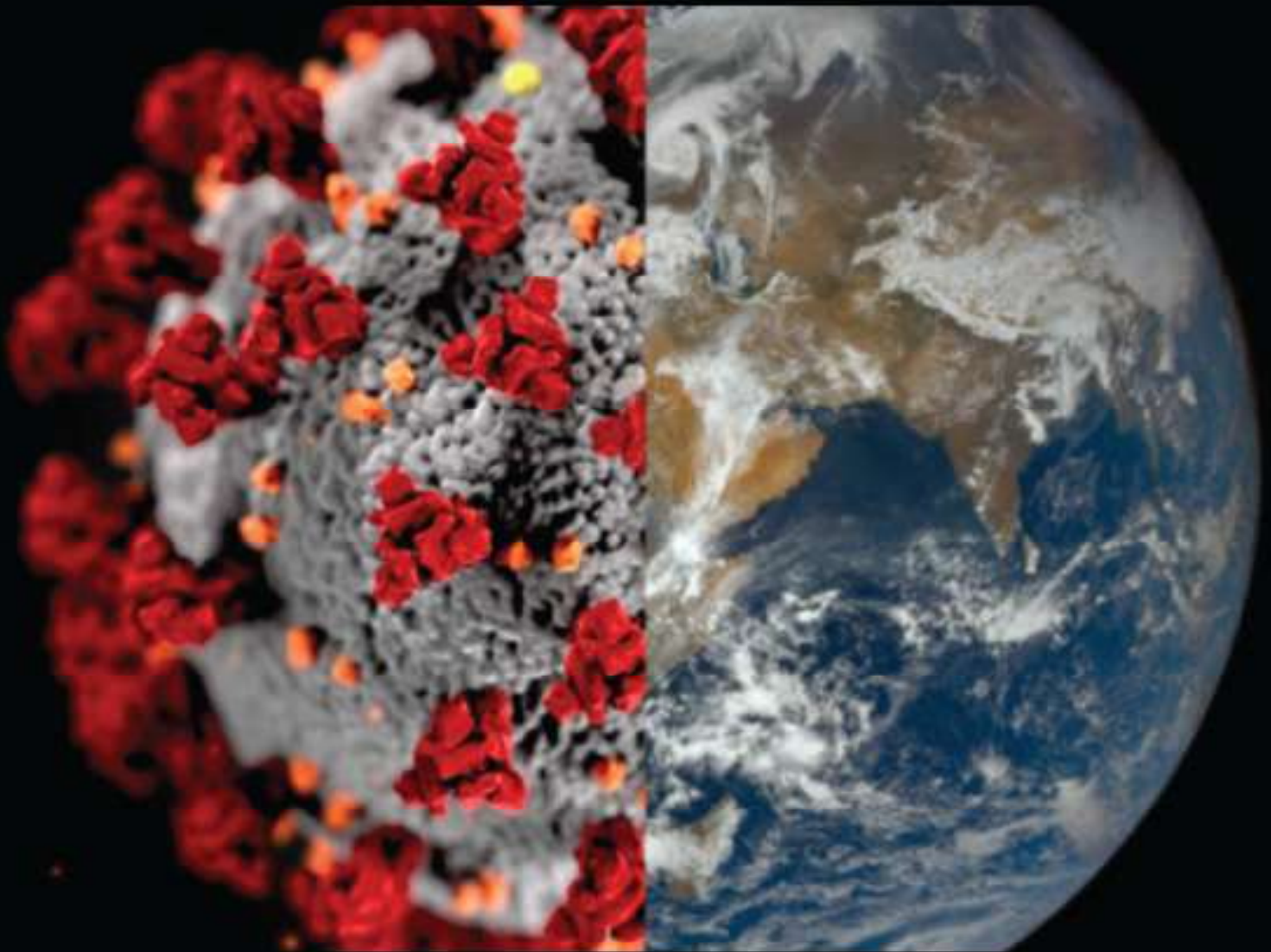




Uganda Association of Consulting Engineers

Newsletter of the Uganda Association of Consulting Engineers

| December 2020



ENGINEERING A POST-COVID FUTURE
The challenges of global infrastructure

Newsletter 2020

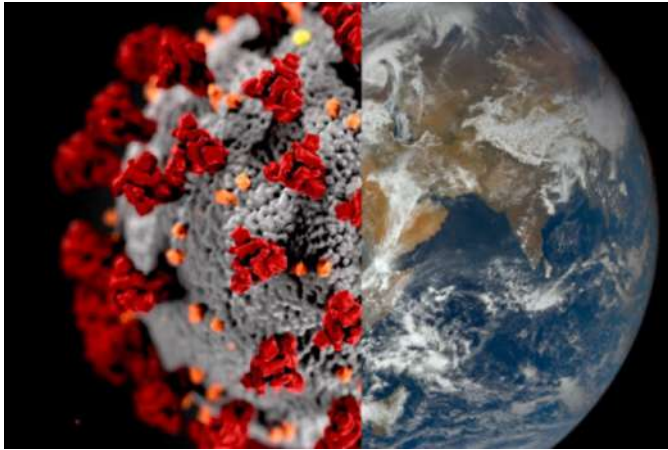


MERRY
CHRISTMAS
& Happy New Year
2021

**FROM THE CHAIRPERSON,
COUNCIL MEMBERS AND SECRETARIAT OF
UGANDA ASSOCIATION OF CONSULTING ENGINEERS**

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EDITORIAL

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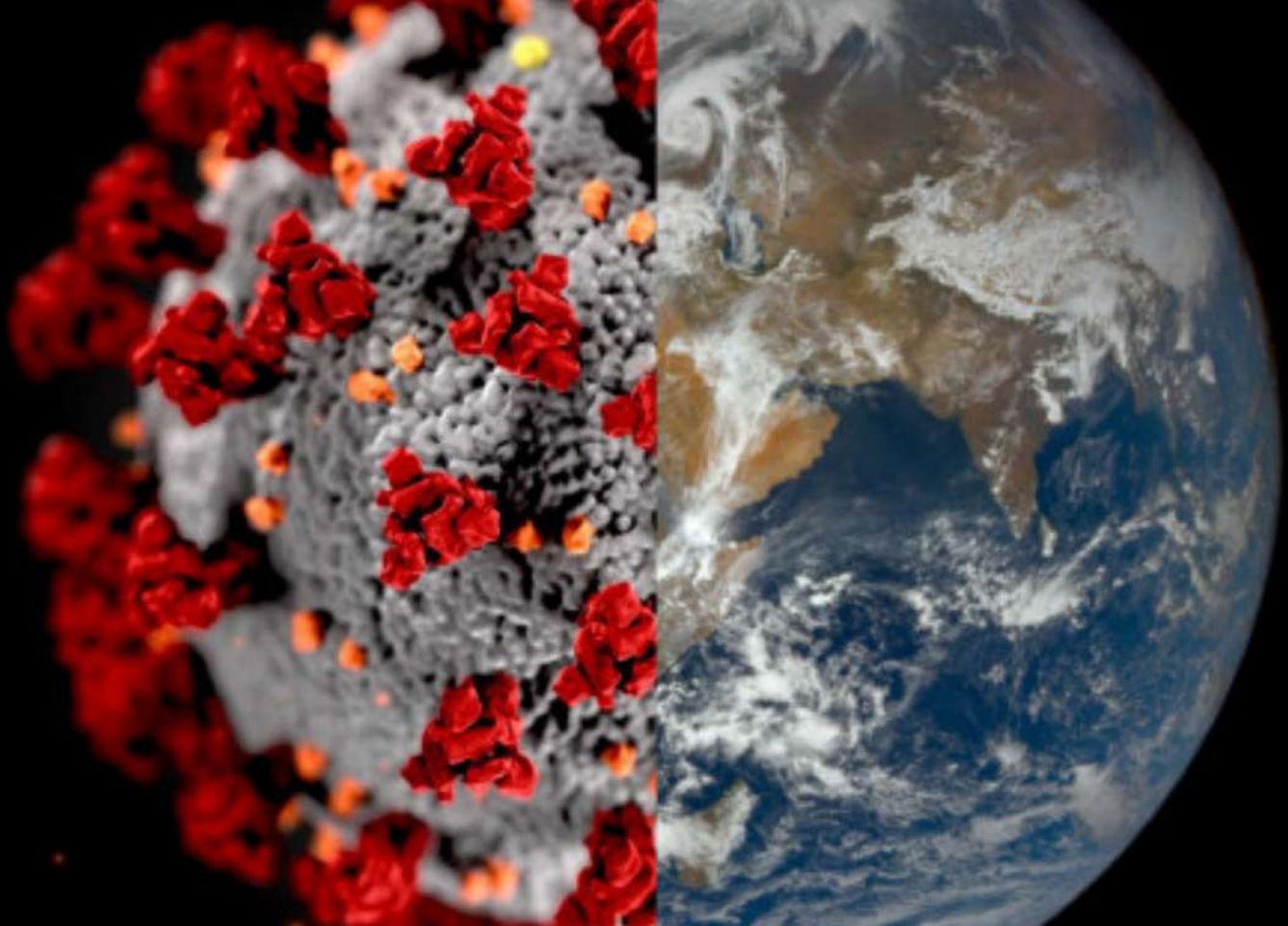
EDITORS NOTE:

When this concluding year was starting, our prayer for everyone was for attainment and great exploits.... then came the X factor! The year then folded itself in just one issue and that has been survival. We at UACE therefore, stand side-by-side with all those that are still hanging on and hoping that we shall spring out of these dark times. But on the other hand, we condole with all those that have been robbed of their dear ones and pray that this ordeal shall work out for the good by the mercies of the Most High God.

UACE now brings you this end of year issue of our Newsletter with wonderful articles geared at stirring everyone up as we together engineer a post-COVID future. One key lesson from this year's experience is the cruciality of keeping healthy and how this can be engineered into our infrastructure and consequently our lives – take for example the exploration into making non-motorized transport (NMT) as attractive and hence a number one choice and not as has traditionally been treated, a result of economic constraints. NMT not only contributes to reduce on emissions of health threatening pollutants into the air arising from use of motorized transport but it also contributes to the health of the consumer as medical science recommends at least 30 minutes to an hour of exercise daily for every one who desires to be healthy and fit. And now with this X factor still lingering, there is more need to social distance and this is better provided by NMT than is by motorized traffic. We can consider more as we purpose to extract all the positives out of these perilous times as we aim towards a post-COVID future.

Our best wishes for the festive season. Our best wishes also for peace to prevail both towards and after elections and may the best leaders as chosen by the Heavens win in the forthcoming elections.

Eng. Nsimbe Joseph
UACE Secretary General



ENGINEERING A POST-COVID FUTURE

The challenges of global infrastructure

A summary of the proceedings of the FIDIC Online International Conference-2020

Writer: Josephine Nakibuule
*Professional Engineering Consultants
UACE FIDIC Future Leader – Secretary*

The first-ever online FIDIC International Conference was held on 11th and 14th September 2020 via ZOOM. The event was attended by panelists and delegates from all corners of the world and addressed many of the issues currently occupying the global infrastructure sector as it grapples with the challenges of a post-Covid future.

The first day of the conference focused on infrastructure after Covid and what it will look like,

shining a light on global infrastructure perspectives and the likely developments as the world emerges from the pandemic.

The conference kicked off with Mr. Greg Clark, the Global Head of Future Cities and New Industries at HSBC, who noted that Covid-19 has had a profound effect on cities and how people live in them. He pointed out that the world is currently living in “a century of the city” which, when coupled with the consequences of climate change presents infrastructure with additional challenges.



People are likely to want to live differently in the future and therefore infrastructures will need to be more flexible to be used for different things. This “hybridity” is likely to be a key trend going forward and would give rise to new financial models in how infrastructure is funded.

Global Infrastructure Perspectives:

How the world economy is shaping up post-Covid and the importance of Infrastructure Investment in driving the recovery

Ms. Nicole Geoghegan, the General Counsel at High Speed Two (HS2), a high-speed railway project in the UK, spoke about the HS2 project which, once completed, will be the backbone of the UK’s rail network connecting 30 million people in 8 major cities with fast and reliable services. She added that it is a very low carbon form of transport taking cars off the road and planes from the sky contributing to reduced carbon emissions. It’s a social, economic, and massive regeneration project.

Projects of this magnitude attract a diverse pool of talent from all parts of the world and going forward, there’s a need for creative ways of inspiring new talent into the industry even though at the moment, movement from one part of the world to another is restricted.

This crisis is an opportunity for the sector to accelerate and build back better regarding technology, resilience requirements, zero-carbon approaches, etc. We need to drive the necessary innovation in projects’ execution and financing strategies. How do we build more sustainably? Taking an example of the Forth Bridge built in 1890 when infrastructure is built to last, it can provide value from generation to generation.

Infrastructure is the key driver in growing the economy. The engineering fraternity in collaboration with respective governments should spur the shift from the traditional transport infrastructure to include more social infrastructure such as hospitals, telecommunications, renewable energy, and other sectors.

Working in the new normal: how to reframe infrastructure post-Covid projects

Mr. Solomon Quaynor, the Vice President, Private Sector, Infrastructure and Industrialization at the African Development Bank Group, highlighted the hurdle going on about force majeure as one of the temporary impacts to Consulting Firms in Africa. Public-Private Partnerships contracts are being tested vis-à-vis force majeure whether it’s from the contractor’s side or the government side. There has been a slow down on a lot of projects. The impact of social distancing within the construction industry is also increasing the cost of construction due to reduced capacity.

All over the world, there has been much emphasis on the fourth Industrial Revolution Post-Covid because proper utilization of the tools of the 4th IR would bring efficiency and cost reduction in many infrastructure projects.

During this crisis, the following were highlighted among the opportunities identified:

1. Reprioritization of infrastructure projects: We have seen many governments moving away from wish-list projects to what is needed. Resources are being focused on the infrastructure that gives the greatest spillover impact on other sectors of development;
2. Although PPPs tend to be more complicated, they will be more greatly utilized in the future going forward not only for the traditional transport projects but also in new areas like health care provision;
3. Opportunities for private developers of infrastructure projects will increase through Infrastructure Asset Recycling;
4. The role of technology in infrastructure: Covid has been the tipping point in forcing organizations to embrace digitalization. In the future, it is going to be essential that we look into it and develop effective measures to incorporate it in our planning and execution frameworks;
5. Resilience has become one of the most critical factors of quality infrastructure which needs to be addressed in the design. It has become apparent that in the EPC equation, the engineering must be done right to ensure sustainability and resilience. Infrastructure is critically connected to the well-being of people (socially and environmentally) and therefore projects must be executed to withstand all kinds of shocks;
6. Procurement should be considered very early in the contractual model so that it can fully support the innovation, flexibility, adaptability, and skills that are required for infrastructure development. There is more room for procurement professionals as we need to do more work on data analysis and digital

applications to enhance transparency in projects.

7. There is a need for more inclusion especially for the most vulnerable population groups. How do we keep connected to the most vulnerable in our communities? Under Covid, the impact on different sectors has been uneven. For upcoming projects, much emphasis is required to ensure that the benefits cut across all population groups.

Concluding remarks

As the conference closed for the first day, FIDIC CEO, Dr. Nelson Ogunshakin thanked all the speakers and panelists for their contributions. He added that there is a common interest in the finance and engineering sectors on how infrastructure is best financed. This is a shared agenda for years to come. Fundamentally, nothing should change when we take the long term view on development. Infrastructure projects take a long time to come to fruition but with a clear vision, governments should be able to back infrastructure investment regardless of the current crisis.

The second day of the conference looked at how the industry will navigate change and deliver infrastructure in the new normal

Sir Vivian Ramsey, an International Judge and Arbitrator, opened the day with a keynote speech highlighting the move to a new uncertainty that people are learning to live with. Economically, there has been the collapse of the international airline industry and the hospitality sector. Service industries have been able to continue through the pandemic without much impact but manufacturing industries

have suffered greatly.

The way we work in the infrastructure sector has changed forever. The acceleration of the change from fixed to flexible offices has meant that much of the infrastructure design is being carried out remotely. While the reduction in travel times to and from work has affected the transport sector, there have been fewer carbon emissions in our cities. Many employees have quickly adapted to the reduced office hours, achieved a better work-life balance, and are not eager to go back to the way things were before the pandemic. Construction has continued to take place amidst appropriate safety measures but companies have experienced a reduction in efficiency and productivity leading to increased costs of production.

How is the industry adapting to the new normal?

Office practices

Given that many people are not eager to go back to the old ways of working, organizations should consider modifying physical office spaces to reflect the new normal such as social-distanced designs, bacterial resistant table tops, etc. Office spaces will be used for collaboration, brainstorming, and creativity. Firms should prepare to reflect these changes in overhead costs as clients will be expecting to see a reduction in their rates.

There is a need to change planning on construction sites to increase efficiency; practices such as staggered working hours, product-based approaches where components are prefabricated

Our diverse global speaker selection represent the following leading organisations:



offsite will accelerate projects by reducing the complexity of design and construction.

The role of technology and innovation

The panel noted that although the industry had taken long to adjust to the digital era, there has been an increased use of technology and digital communication during the pandemic. Going forward, there will be massive investment in technological advancement, smart contracts, construction software to manage deliverables, equipment, and resources without much human involvement, remote inspections, and many other interventions.

There is a need for increased control and integration across the value chain with a significant push through collaborative contracting. A digital academy and/or regional hubs for data sharing will increase collaboration in the industry.

It is important to note that the development of new disciplines will give rise to increased risk and firms must be aware that risk assessment and management will be crucial in the future. Insurance rates such as those for Cyber Insurance in the contractual environment will change to capture the new developments.

Investing in human resources

How do we attract fresh minds to the industry and build capacity for the future? Adaptability, data

analytics, risk assessment, and behavioural sciences are some of the key skills that firms will need in order to cope with the changing environment.

It will be crucial for team leaders to ensure that although the staff is working remotely, productivity and efficiency are not compromised. Be good role models, keep in touch with each member and keep doing the things you used to do, albeit virtually.

While remote working might increase, physical interaction in the workspace is still important for creativity, training, and building experience and it should not be completely phased out. Recruitment and training for graduates is very vital for the growth and sustainability of the industry as a whole and organizations must consciously plan to invest in them.

Closing remarks

FIDIC Vice President William Howard thanked the FIDIC team for the conference so apt and well organized and all the speakers for the job well done in tackling the various issues. He added that we must use the uncertainty of these moments as a stepping stone to changing the industry for the better, and moving to a smarter future rather than staying in the past. This is an opportunity that must not be missed.

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**We are proud to be associated with
Uganda Association of Consulting
Engineers as their publishers of their
December 2020 Newsletter**

President UIPE

Eng. Ben Kyemba



Eng. Ben Kyemba was elected new President of the Uganda Institution of Professional Engineers (UIPE) 2020-2022. He took over office at this year's Annual General Meeting on 2nd October 2020.

He currently works with the Ministry of Works and Transport as the Acting Assistant Commissioner of Engineering in charge of Quality Assurance under the Department of Construction Standards and Quality Management.

He previously worked with Bugiri District Local Government as a senior civil engineer in charge of the water sector where he was responsible for

ensuring that communities are supplied with safe and clean water.

He holds a Master of Science in Civil Engineering from Makerere University, a Post-graduate Diploma in Project Planning and Management from, Uganda Management Institute, a Bachelor of Engineering in Civil and Building Engineering from Kyambogo University, a Higher Diploma in Construction from Uganda Polytechnic Kyambogo, and an Ordinary Diploma in Civil Engineering from Uganda Technical College Elgon.

Eng. Kyemba is a professional and registered civil engineer with over seven years of post-registration experience with the Engineers Registration Board. He is a Corporate Member of the Uganda Institution of Professional Engineers and a Registered Engineer with the Engineers' Registration Board.

The UIPE Information Officer interviewed Eng. Ben Kyemba to enlighten members on how some of these burning issues will be tackled during his administration. Below are the excerpts

From your experience as the former Vice President Membership Education Training Committee (MET), what challenges are applicants facing in the process of registration? How will you mitigate these challenges as President?

Delays in the assessment of reports: Some assessors delay with applicants' reports and this is frustrating. Training of more assessors will be able to solve this issue. In addition, despite a number of Continuous Professional Development (CPDs) on Technical and Career Report Writing, applicants still submit substandard work. However, we shall not tire from teaching.

The number of technicians and technologists is still low despite the efforts of most of the past presidents. What new measures have you lined up to mitigate this?

I will scale up sensitization and workshops for technicians and technologists in all the branches. I also intend to reach out and engage with organizations that employ the majority of



A group photo for the new UIPE Council 2020-2022

UIPE photo

technicians and technologists to support them. I will demand that UIPE members are given priority during the recruitment process.

In addition, I will also embark on empowering them legally as proposed under the Engineers Registration Amendment Bill (2018) to register technicians and technologists under law.

For one to apply for UIPE Membership, he/she has to drop their application at Kyambogo offices. Many ask why branches can't be given more powers to receive applications. What are you going to do about this?

Actually, branches can receive applications from members and then get any member to deliver them to the Secretariat. This relieves the applicant's travel costs to deliver their application to the Secretariat offices in Kyambogo.

In your manifesto, one of the issues listed to be tackled is the issue of UIPE visibility. How are you planning to increase the visibility of UIPE during your term of office?

We intend to increase our online presence e.g. on social media platforms and actively participate

in activities of other regional and international engineering organizations.

How do you plan to transform UIPE to embrace the vision of Diversity and Inclusion?

UIPE has a Diversity and Inclusion policy and I will value and appreciate, respect, and adopt it for the good of all members. I will also encourage UIPE members to do the same.

What efforts will you put in place to ensure a quick transition from a manual to an online application system?

We want to engage the Consultants from the European Union (EU) who are offering Technical Assistance to UIPE to ensure that we expedite the process and we have it piloted.

The new President called upon all engineers, technologists and technicians to take keen interest in the affairs of the Institution and the Engineers Registration Board (ERB).



Optimize operational and maintenance practices for sustainable infrastructure

Byr: Eng. Frank Kweronda
The Writer is a Civil Engineer

It has become increasingly apparent that a paradoxical situation is emerging with respect to the sustainability of our infrastructure. On one hand, a huge demand for infrastructure has resulted from rapid urbanization. On the other hand, existing infrastructure is falling into disrepair before completing its design life. Operation and Maintenance (O&M) has been identified as the key to enhancing the sustainability of existing infrastructure and assets. However, there is a general lack of understanding by stakeholders about the role of operation, maintenance, and sustainability in the perspective of good governance.

O&M refers to all activities needed to run any infrastructure, except for its construction as a new facility. The overall aim of operation and maintenance is to ensure the efficiency, effectiveness, and sustainability of facility. The two activities of "operation" and "maintenance" are very different. "Operation" refers to the direct access to the system by the user (e.g. operating a generator), and to the rules or by-laws, which may be devised to govern who may access the system, when and under what conditions. Maintenance, on the other hand, is to do with the technical activities (preventive, reactive, and corrective), which are needed to keep the system working. Maintenance requires skills, tools, and spare parts. In many cases, to ensure the sustainability of our infrastructure, it is necessary to have community ownership and management approach, making the end-users directly involved or responsible in one way or another for the operation and maintenance

of the installed facilities. Successful operation and maintenance require following an "owner's manual" prepared by the contractor and engineer at the onset of the planning process. This should spell out a schedule and procedures for maintenance and should also include methods to carry out tasks such as bookkeeping, paying employees, collecting bills (utility management), inspection, refurbishments, replacement of parts, etc., giving an integral framework for operation and maintenance.

Infrastructure is essential for sustained economic growth, competitiveness, and social progress. A country's infrastructure endowment plays a major strategic role in its economic growth and global competitiveness. A basic government responsibility is to secure maximum optimization from the O&M of existing infrastructure assets. The Government can adopt various strategies to optimize the socio-economic returns generated from these assets. Generally, many infrastructure projects experience their most serious problems during their operation, maintenance and cost recovery. Hundreds of projects around the world demonstrate how newly built infrastructure deteriorates after the project's termination. Therefore, it is imperative to plan for operation and maintenance, with a planned withdrawal of external support as local ownership builds. Operation and maintenance is a crucial element of sustainability and has been a frequent cause of failure of service facilities in the past. Many failures are not technical. They may result from poor planning, inadequate cost recovery, or the outreach



On going road works in Kampala

Internet photo

inadequacies of centralized agencies. Operation and maintenance have been neglected in the past or been discussed and introduced only after a project was completed. This neglect or delay in applying proper operation and maintenance has adversely affected the credibility of the investments made, the functioning of the services, the well-being of rural and urban populations, and the development of further projects.

High-quality infrastructure facilities may be costly to build and maintain, but they provide many economic benefits as they facilitate trade and production efficiencies for other industries. For example, consider how an unreliable power supply would add to the overall cost of doing business, as factories must either pause production during blackouts or pay for expensive back-up generators. The same may apply to water shortage, poor roads, etc. While building new infrastructure assets ranks high on the agenda, existing infrastructure assets are often neglected thus causing unnecessary operational costs and inadequate maintenance. Against the

backdrop of increasing user demand, constrained financing and an ageing asset base, it is imperative for planners and implementers to make the most of their existing infrastructure assets – specifically to increase the assets' productivity and longevity.

Most policymakers and implementers emphasize constructing new assets to replace the delayed one, but this strategy is not the best. After all, public-budget constraints exist, as do multiple difficulties in getting projects from idea to implementation in a reasonable time frame. A complementary and potentially more cost-effective approach is to improve the utilization, efficiency, and longevity of the existing infrastructure by optimal O&M. There is always a tendency to neglect the existing assets because the and current O&M practices are often seriously deficient. In operations, they fail to maximize asset utilization and to meet adequate user quality standards, while incurring needlessly high costs as well as environmental and social externalities. Maintenance is all too often neglected since political bias is towards funding



In reality, the government may struggle to achieve high O&M performance due to insufficient funding especially through annual grants, weak capabilities and inadequate O&M governance.



new assets. Similarly, resilience to natural disasters tends to be ignored, although such hazards are becoming more common and more destructive because of climate change. As a result of the maintenance backlog and the lack of resilience measures, existing assets deteriorate much faster than necessary, shortening their useful design life.

Many projects promote community participation in the planning, implementation, and management of these services. Increased participation in O&M is usually assumed. No matter how sustainable a structure may have been in its design and construction stages, it can only remain so if it is operated responsibly and maintained properly.

A country's competitive economic advantage depends on a properly articulated infrastructure vision and long-term planning. Planners and leaders must inspect their project portfolios critically and decide which ones to accelerate first based on their strategic importance, independently of the restricted duration of a political cycle. However, vision and planning are not sufficient and it is fundamental that we all learn how to assess and select an appropriate infrastructure delivery model at the early stages of the project preparation process and are fully aware of the implementation consequences in terms of the whole life-cycle cost. In addition, there is a need to develop a holistic and long-term strategy for operating

and maintaining the physical assets that may represent a considerable financial burden for future taxpayers.

In reality, the government may struggle to achieve high O&M performance due to insufficient funding especially through annual grants, weak capabilities, and inadequate O&M governance.

The chances of successfully optimizing O&M are enhanced by three factors: existing role models of good practice, technological innovation and relatively modest implementation costs. O&M activities, which encompass not only technical issues, but also managerial, social, financial and institutional issues, must be directed towards the elimination or reduction of the major constraints which prevent the achievement of sustainability. Therefore O&M should gain considerable visibility and policy-makers and project designers should be more conscious of the direct links between

improved O&M practices and the sustainability of infrastructure. There should also be a recognition of the need to approach these projects in a comprehensive way, emphasizing not only the design and construction but also post-construction activities.

A proper solution will require a step change in infrastructure asset management. In fact, such a transformation is feasible. Many examples of O&M best practices exist from the various infrastructure sectors e.g. roads, water supply and sanitation, and electricity that just need to be adopted more widely. Most important of all, O&M solutions are affordable. They are highly cost-effective in an otherwise capital-intensive industry. Even small O&M improvements can make a remarkable impact, given the large size of the global asset base, where each percentage of improvement translates into billions of money saved. And in addition to generating financial savings, O&M improvements can also bring considerable social and environmental benefits, in line with government service.

Finally, it is crucial to remember that proper O&M is part and parcel of high-quality service alignment for users, and this user-based focus is what drives their willingness to pay for services and thus reinforces funding sustainability. As such, effective O&M and asset management approaches for existing infrastructure provide a blueprint for sustainable investment of the future.



Innovation: Engineers thriving post COVID-19

When the Covid-19 pandemic broke-out earlier this year, it all started like something that was going to stay for a short while and then we all get back to our normal life. But close to nine months later, the situation has proved to be worse than we had anticipated, characterized by uncertainties.

Covid-19 has turned into a worldwide crisis which has disrupted activities in various industries. Engineering is no exception. From the look of things, this crisis is going to stay with us much longer and we have to adjust accordingly to accommodate the new ways of living with it. Therefore, we as engineers have to adapt to the “new normal” by finding innovative ways of absorbing the post Covid-19 impacts in the engineering industry.

In this case, “innovation” means finding a way of thinking and creating something better for us all so that we stay relevant in a highly volatile and uncertain world. For any engineer to

Engineers who reinvent their relationship with third parties (clients, suppliers, subcontractors) will be strengthened and ready to thrive in a post-COVID-19 world.

stay relevant at their workplaces or in the industry, an innovative mindset is a necessity.

Many engineering firms have started doing things differently from what they did in the past. One of the ways is by fast-tracking their digital adoption by augmenting workers and engineers with digital collaboration capabilities, automating low value-added activities and sharing data for rational and insight-driven decision-making.

New and safe ways of working (smart operations) have to be adopted; for example, creating virtual workplaces and the use of digital applications to promote remote working whenever possible.

Engineers who reinvent their relationship with third parties (clients, suppliers, subcontractors) will be strengthened and ready to thrive in a post-COVID-19 world.



By Jacinta Nakanwagi
*FIDIC-GAMA Future Leaders
Steering Committee Member
2019/2020
Project Engineer
Promote Consultants Ltd*

The future of engineering associations in Africa is to run profitable businesses:

By Eng. Alex Turihohabwe

The past chairman Uganda Association of Consulting Engineers and continental finalist 2017 CEO Global in the Business and Professional Sector.

Uganda Association of Consulting Engineers (UACE) was started by guarantee engineers who owned companies that were involved in engineering consultancy works in the year 1991. The formation of this association marked the beginning of bringing together the firms to articulate concerns that affect the engineering consultancy industry with one common voice. It also strengthens the nation's construction industry through the contribution of professional expertise. Developing countries such as Uganda need professional bodies/associations for guidance on technical policies.

Initial founders were eight firms and to date, the number has grown to 30 and one individual member. This means that there's growth in terms of numbers at an average rate of 0.6% of a member per year. This growth is abnormally low.

Africa as a continent has also formed a chapter that brings together these country associations. These associations have administrative units that comprise of two to five members of staff depending on the size. In Uganda, UACE is small and it is managed by two staff: one executive secretary and an administrative assistant.

Sustenance of these administrative units in terms of salaries and allowances is through annual subscription by the member firms.

The challenge with dependence on annual subscription is that not all firms pay promptly or consistently; so there's always a gap in income. This implies that most of the associations are always short of funds. To a large extent therefore sustaining good staff is questionable.

Another form of income is from trainings in particular fields that are beneficial to the firms. At times most of these trainings are run at a loss bearing in mind that their profitability depends

on the number that attends. Advertisements are always encouraged but the low rate of attraction of businesses to advertising firms is not encouraging at all.

At Africa continent level these associations are brought together under a chapter called Federation of International Consulting Engineers (FIDIC) known as FIDIC AFRICA. FIDIC is internationally recognized and brings consulting member associations more specifically consulting engineering firms together when international conferences are held. Currently there are over one hundred (100) member countries. FIDIC AFRICA has seventeen (17) member associations. This means the same number of countries represented since each member association represents a country.

Through these annual educative international conferences held at continental level by FIDIC AFRICA and at global level organized by FIDIC; one finds that most of the associations have almost the same financial challenges.

How then can these financial challenges be overcome?

Every challenge has a solution if sought. This financial challenge in associations especially in Africa can be overcome.

Take an example of the Roman Catholic Church, and the Anglican Church. These have different businesses running: hospitals, schools, universities, conference halls, etc. These businesses not only help these organizations in financial sustenance but they also help the government in creating employment, paying taxes, supporting the vulnerable groups, etc. These are not mean contributions to the government and they act as a relief. In relation to this, the consulting associations should be professional associations that are in existence to solve challenges that are a burden



Workshops, conferences and training like the one in the picture is among the many forms of income engineering associations.
Internet photo

to the governments. Currently they offer employment through member firms but they should also create solutions to the challenges the government faces.

The common challenges include unemployment, housing, lack of continuous professional development (CPDs) programmes to its members. The associations should come in and contribute to the solutions.

One way is to start profitable businesses just like these churches do it.

UACE has ably noticed this and has started a company by the name Providence Ltd. The company will be doing businesses in areas where the government is struggling. The current and future board



Through these annual educative international conferences held at continental level by FIDIC AFRICA and at global level organized by FIDIC; one finds that most of the associations have almost the same financial challenges.



members should always focus on solutions to existing government challenges.

FIDIC AFRICA should also encourage member associations (MAs) to not only rely on member subscription fees and to some extent trainings but start businesses that are to rescue them from financial deficits.

I therefore call upon all the directors of the member firm of UACE to give all the necessary support to Providence Ltd. The decision made to start it was the best decision ever made.

Let us build businesses to support the member association that will also solve challenges that governments are constantly facing.

Evaluating the Economic Benefits of Non-Motorized Transport Infrastructure (NMT) for Sustainable Development

Case Study: Non-Motorized Transport Pilot Scheme for Kampala City

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Abstract

Resilient and smart non-motorized transportation systems are vital for sustainable development of cities. The characteristics of the existing transport network in Kampala CBD which is largely dominated by the roads was designed majorly to accommodate the vehicular traffic. Uganda's GDP growth rate has averaged at 4.8% between 2009 and 2017, the population growth at 2.9% average based the census years 2002 and 2014. The Ministry of Works and Transport developed and passed the Non-Motorized Transport Policy in 2012 and currently this policy is at implementation stage. In implementing the policy, Kampala Capital City Authority has undertaken a pilot project to establish non-motorized transit corridors such as Namirembe Road and Luwum Street which will be accessible to only pedestrians and cyclists. Due to migre resources in developing economies it is absolutely necessary that comprehensive economic evaluation of pilot infrastructure projects such as NMT is conducted to determine their efficacy before implementation on a broader scale. It is in this spirit that this paper seeks to provide technical assistance to government agencies, consultants, contractors and other stakeholders interested in estimating the economic benefits of NMT Investments.

Keywords: Non-motorized transport

Introduction

Resilient and smart non-motorized transportation systems are vital for sustainable development of cities. The characteristics of the existing transport network in Kampala CBD which is largely dominated by the roads was designed majorly to accommodate vehicular traffic. Over the years alluded to, Uganda's economic growth rate that has averaged at 4.8% between 2009 and 2017 and a population growth of 2.9% average based on the census years 2002 and 2014, there has been a steady increase in the pressure on the existing roads. This made it close to impossible to access some areas of the city such as the downtown areas using vehicles due to the congestion of the traffic grid lock. It has been observed and proved that city dwellers currently find it more convenient to access these parts of the city on foot. However, it should be primarily noted that the existing infrastructure does not favour safe,

secure and seamless movement of pedestrians. Cases of accidents and theft are common. Suffice to mention that the carbon emissions to the atmosphere from motor vehicle engines, greatly contribute to environmental pollution. Hence there is low air quality that negatively impacts the life of city dwellers. Walking and cycling is an ultimate zero carbon solution to the pollution from motor vehicles that plough the streets of Kampala.

In view of the above, the Ministry of Works and Transport developed and passed the Non-Motorized Transport Policy in 2012; currently this policy is at implementation stage. Kampala Capital City Authority (KCCA), in the bid to implement this policy has undertaken a pilot project to establish non-motorized transit corridors such as Namirembe



Road and Luwum Street which will be accessible to only pedestrians and cyclists. KCCA has gone further to design other non-motorized transport schemes that will see a 15km path for pedestrians and cyclists along the Kampala-Namanve railway reserve of 4 Km pedestrianised streets within the CBD constructed.

The main objective of this paper is to establish methods which can be employed to evaluate the economic benefits of non-motorized transport investments. These methods can further be employed to determine the extent to which the non-motorized transport system can contribute to the sustainable development of cities. This will make it possible to establish measurable economic parameters that can be employed to monitor the performance of NMT projects with a view to continuous improvement of the NMT transport models. It is also intended that this paper provides a basis for city authorities and other interested stakeholders to take policy decisions basing on the economic impact of NMT.

Target Beneficiaries

The target beneficiaries for NMT infrastructure development are as detailed in the table 1 below

Table 1: Target Beneficiaries of NMT Infrastructure

Beneficiary	Reason for travel
Pedestrians	Business, school, recreation, work
Cyclists	Business, school, work, recreation
Animal moved Vehicles	Business
Skates and roller blades	Recreation
Man moved vehicles e.g. carts	Business, work

Figure 1: Implementation of the NMT Pilot project along Duster and Luwum Street in Kampala



Before Implementation of the NMT Project



After implementation of the NMT project

Economic Benefits of NMT Infrastructure

Savings on user costs

Low user cost and affordability are among the many benefits of walking or bicycling, especially compared to owning and operating a personal vehicle. Reduced travel costs result in a greater portion of pedestrians' and bicyclists' income that can be used for housing, necessities and other consumer goods. In some cases bicycling may be faster than driving, especially for short trips in dense, urban locations. This creates a benefit in time savings, which can be monetized a number of ways. Businesses and companies that initiate programs encouraging their employees to commute using nonmotorized transportation may see an improvement in travel time reliability for employees, which could lead to improved productivity. Providing greater access to lower-cost travel options can also have a social equity benefit by increasing access to jobs, opportunities and community amenities for lower-income populations.

Direct economic benefits

Direct economic impact include money spent that benefits existing urban commercial establishments such as in sales, produces and tax revenues. It also creates jobs as a direct result of the new non-motorized infrastructure e.g., jobs resulting from the design and construction of non-motorized infrastructure, bicycle store sales and rentals, and bicycle and pedestrian infrastructure-supported tourism. There will be improved visibility of displayed merchandise in shops along the NMT corridors.

Induced economic impacts

New bicycle and pedestrian infrastructure and

programs can have induced economic impacts. Transportation mode can affect consumer behavior in terms of the frequency with which consumers visit a wider range of businesses and the average amount of money they spend. There are a few potential reasons for consumer behaviour to change with travel mode:

- Bicyclists and pedestrians who have more disposable income due to reduced travel expenses may be more willing to spend a greater portion of their income on local goods and services.
- Bicycle and pedestrian infrastructure may make a commercial corridor more accessible to foot traffic, increasing consumers' browsing opportunities and encouraging more access to local goods and services.
- Bicycle and pedestrian infrastructure, along with other forms of traffic calming, may make commercial streets more attractive to visitors and increase visitors' perceptions of safety.

Health savings

Increased levels of physical activity that result from use of bicycle and pedestrian infrastructure translate to a reduction in health care costs thus decreasing mortality (rate of death) and morbidity (rate of disease) related to obesity and other health conditions. Low levels of physical activity observed among many Ugandans is a major contributor to rising rates of obesity, diabetes, heart disease, and stroke among other chronic diseases. The above notwithstanding, use of improved bicycling and walking facilities can produce safety benefits related to reduced traffic injuries and fatalities which cuts medical costs and economic losses from injury or death.

Environmental benefits

Non-motorized transportation projects also have environmental benefits such as reduced air pollution and greenhouse gas emissions. These benefits also have an economic dimension. For example, there are human health benefits that result from improved air quality when automobile trips are replaced by non-motorized trips. Air pollution from transportation-related emissions is one of the main contributors to poor air quality. Exposure to transportation related pollutants is associated with several adverse health effects, such as premature mortality, cardiac symptoms, exacerbation of asthma symptoms, diminished lung function, and increased hospitalization. Improved air quality can also have other economic benefits. For example, improved visual air quality can benefit local tourist-related businesses such as tour guide services and sale of crafts and antiques. There are also economic benefits from reduced greenhouse gas emissions, with possible health implications, they can be diffuse and difficult to measure at a local scale.

Estimation of economic benefits of NMT infrastructure

Economic impact evaluation is strengthened by a before-and-after analysis, with a detailed baseline analysis being carried out before the investment is in place. Baseline analysis involves collecting information about every type of impact foreseen before the investment. The baseline studies should also include perception studies where opinions are gathered from the intended project beneficiaries regarding the proposed infrastructure in regards to cost of travel, accessibility, safety and comfort.

The economic benefits detailed in section 3 can be measured with reasonable effectiveness and at different scales. The data to facilitate the measuring of these benefits can be acquired from field surveys and observation, tax receipts, sales receipts, interviews, hospital records, among others. The data collected can then be analysed by employing economic models to study the impact of the investments.

Estimation of savings on user costs

The economic benefits to users may be measured through user surveys of their travel behaviours and costs. Differences in travel costs can then be generalized based on documented changes in mode change from private vehicles or transit to non-motorized transportation modes. This could be determined by conducting origin destination surveys where data regarding (i) how the people

have travelled to the locality, (ii) frequency of visits, (iii) purpose of visits and (iv) the costs incurred in making the visit (spending patterns) using motorized transport means can be determined and compared with an approximate cost of making the same trips with NMT modes.

During the preparation of this paper an assessment of the costs of transport per kilometer using motorized modes within the central business district was conducted and the observations are shown in the table below.

Table 2: Estimated Cost of Motorized Transport means in Kampala

Mode of transportation	Average Estimated Cost per Km (UGX)	Average Estimated Cost per Km (USD)
14-seater Taxi	400	0.108
Boda Boda (motorcycle)	1500	0.407
Private car	1000	0.271
Private Taxi	2000	0.542

This means that an individual travelling by a 14-seater taxi from Namanve to Kampala CBD a distance of 15km for work spends an average of Ush12000 or USD3.3 per day to travel to and from work. If the individual shifts to a bicycle and rides along the NMT corridor envisaged between Namanve and the CBD, he will save an average of USD1200 per year.

From the traffic surveys conducted during the detailed design of non-motorized transport schemes for Kampala City, there is a total of current 29,160 NMT users in the Kampala CBD. Assuming each user travels an average 15km per day, there will be a total saving of USD34,992,000 per year. This value is expected to be even much higher because of the expected mode shift from private cars, boda bodas and private taxis.

Estimation of direct economic impacts

Direct benefits to bicycle- or pedestrian-related businesses can be measured through business surveys, tax receipts and remittances and a count of the number and size of such businesses in a community or geographic area. However, this type of analysis requires baseline data before the investment is put in place. Data on the number of people (through pedestrian counts) visiting a mall or shopping centres within the NMT corridor before the NMT infrastructure is put in place. This will give an indication of the potential increase in sales for the businesses in that shopping centre



Cyclists riding on one of the Non motorized roads in Kampala.

Internet photo

due to the attraction of new visitors. According to Clifton et al, cyclists tend to spend less per visit but make more visits than visitors travelling by other means. This school of thought also applies to pedestrians. The attraction of new visitors can also be derived from the change in traffic characteristics along the roads leading to the NMT Zone. The tax remittances of the different businesses which can be obtained from tax bodies such as URA for the Uganda case also give an indication on whether the NMT infrastructure is contributing to the growth of businesses or not. Development of new businesses resulting from the NMT infrastructure can be monitored using data from business registration authorities like the Uganda Registration Services Bureau (URSB). Business surveys include interviews with business owners to obtain data on business performance in terms of turnover before and after the commissioning of new NMT infrastructure. This data should however remain strictly confidential. Luwum Street which forms part of the NMT pilot corridors thus far completed has seen a significant rise in the number of businesses operating along its corridor. Informal discussions with the business owners indicated that the number of potential buyers has risen resulting in growth of sales. This is also attributed to the increased sense of security and comfort for the shoppers.

Estimation of induced economic

impacts

Induced economic impacts can be determined through consumer surveys related to their travel and behaviour. Mode shifts have to be considered in this survey.

Substantial data is necessary for both mode shares and consumer behaviour before and after the project is implemented.

The induced economic impacts include:

- i. Improved property value which can be tracked by acquiring data on the changes in property prices, vacancy rates, rental tax remittance and rental income for building landlords before and after the commissioning of NMT infrastructure. Comparison between the changes in property prices and commercial rents in the vicinity of NMT infrastructure will give an indication on the impact of the NMT investment on property value. It is advisable to commence data collection some time before the NMT investment is put in place because property prices and rents can start adjusting in anticipation of major transport infrastructure being put in place.
- ii. Changes in the levels of unemployment. Accruing to the growth in businesses there are likely changes envisaged in the level of unemployment for some occupational

groups. Indication regarding changes in unemployment can be given by tax income foregone, the cost to provide benefits to the unemployed, cost to provide family and individual credit facilities, level of exportation of labour exported by external recruitment agencies. Changes in the levels of crime in the area as analysed from the police records can also be a good indicator in the changes of unemployment.

- iii. Development of the cycling industry: Establishment of NMT infrastructure will lead to an increase in the number of cyclists which will increase the sales of bikes, bike parts as well as the market for bike repair and maintenance services. As such there will be newly created jobs for bike designers, trainers and mechanics. This will in turn lead to growth of the cycling industry which will in turn add to the country's GDP. Evaluation of this impact will require primary research to be carried out in the levels of sales and employment in the cycling industry before and after the implementation of infrastructure.
- iv. Reduction in travel times resulting in to improved productivity: This aspect can be analysed by considering the time saved when using NMT infrastructure to make trips and the value of that time saved. For example, if a food delivery service provider is to use a car to make a trip of 1km it may take him say 14 minutes. If the same service provider used a bicycle it may take say 7 minutes, thus a saving of 7 minutes. This means in the saved 7 minutes the service provider can make an extra delivery, thus extra income. This extra money obtained is the economic value of the time-saving. Data on the time saved can be obtained from journey time surveys on selected trips within the NMT zone of influence before and after commissioning the infrastructure and thereafter attaching a cost to this time saved.

Estimation of health impacts/benefits

It is apparent that cycling and walking has potential to improve health for both individuals and society at large. The change in the prevalence of type 2 diabetes in the catchment area of the NMT infrastructure is a worthy indicator of the health impacts of cycling and walking. The health benefits can be quantified by the cost-saving realised as a result of the reduction in the prevalence of type 2 diabetes in terms of the cost of drugs and the inpatient services. Data on the prevalence of diabetes can be collected from health facilities within the zone of influence of the NMT

infrastructure before and after the commissioning of the infrastructure. It is advisable that a minimum of three data points are taken at the same time of the year to avert seasonal effects.

Alternatively, health benefits can be determined by using tools such as the Health Economic Assessment Tool (HEAT) developed by the World Health Organization. HEAT is designed to enable users to conduct economic assessments of the health impacts of walking and cycling. HEAT estimates the value of reduced motility that results from specified amounts of walking and cycling. HEAT can be used for assessments such as:

- (i) Assessment of current or past levels of cycling and walking;
- (ii) Assessment of changes overtime i.e. before and after comparisons;
- (iii) Evaluation of new or existing projects.

Using this tool comprises of 5 major steps: (i) defining the assessment, (ii) providing input data (iii) providing information for data adjustments (iv) review of calculation parameters (v) results.

The Integrated Transport and Health Impacts Model (ITHIM) developed by James Woodcock. is a comprehensive tool that can estimate the hypothetical health effects of transportation mode shifts through changes in physical activity, air pollution and injuries.

Estimation of environmental and social benefits

The mode shift from motorized transport to non-motorized transport contributes to the reduction in air pollution, reduced greenhouse gas emissions, noise, road deaths and injuries resulting from motor accidents, congestion and social isolation (Hart and Parkhurst, 2011). Noise pollution maybe associated with elevated stress levels. Feitsberaad (2010) argues that a 10% increase in cycling is expected to decrease noise pollution by 2%.

The nitrogen dioxide contained in vehicle emissions increases the symptoms of the people suffering from respiratory and heart disease. A study that was conducted in Netherlands on the environmental impacts of cycling revealed that a 10% increase in cycling caused a decrease in carbon dioxide emissions from cars by 7%. The same study also suggests that the improved flow of traffic contributes to the decrease in carbon dioxide emissions of heavy trucks to a tune of about 4%.

The logic of estimating environmental benefits is that provision of NMT infrastructure creates a switch in transport modes reducing congestion and improving the flow of motorized traffic due to reduction in traffic jam. The improvement in air quality produces a reduction in pollution induced respiratory incidents such as asthma thus a reduction in premature deaths.

The effect of the change in air pollution levels before and after the commissioning of NMT investments can be measured using meters such as nitrogen dioxide and carbon dioxide gas detectors which can measure the concentration of nitrogen dioxide and carbon dioxide and particulates such as PM10 and PM 2.5.

The change in pollution levels can also be measured by analysis of the change in the prevalence and treatment of asthma. Asthma is a chronic condition which can be brought on and exacerbated by ambient air pollution. Asthma is a good indicator because it is widespread and well documented and responds in a short time to changes in air quality.

In line with the above measurement of the environmental impact of NMT infrastructure will require data on asthma episodes recorded and treated before and after the investment. This data can be supplemented by interviews with asthma patients with the NMT infrastructure zone of influence to determine the frequency of the occurrence of the asthma attacks before and after the investment and the cost of treatment of each asthma attack. The change in the frequency of occurrence of these attacks gives an indication of the cost saving accrued due to the NMT infrastructure. This data needs to be collected at different times of the year before the investment and several years after the investment.

Cumulative economic impacts

The cumulative economic impacts resulting from amalgamation of all the benefits can be estimated using economic analysis models such as Regional Economic Model, Inc (REMI), IMPLAN and Transportation Economic Development Impact System (TREDIS). These models are employed to conduct pre- project cost benefit analysis as well as post project evaluation.

Once all costs and benefits are monetized, the ratio of benefits to costs are calculated and evaluated to determine feasibility and desirability.

Scales of observation

It is of paramount importance that the scales

of observation are appropriately taken into consideration when evaluating economic impacts of NMT Investments. Each individual scale of observation has its benefits and drawbacks and may or may not be appropriate for different projects. The scales of observation are;

- i) Micro Scale: This includes surveys on individual business owners such as shops and restaurants that utilize NMT investments.
- ii) Meso Scale: This is an intermediate scale between the scale of individual business owners and a larger scale of a city or county.
- iii) Macro Scale: This is usually country wide or state-wide. The economic models such as REMI, IMPLAN and TREDIS are more suited for this kind of analysis.

Observations and Conclusions

- There exists a wide variety of options that can be employed to measure and assess the economic benefits of NMT infrastructure. Some of the methods and models are still undergoing development and calibration. Researchers should therefore always first ascertain the goals of analysis before using any given tool or model for analysis.
- Each economic analysis tool has unique advantages as well as disadvantages that rotate around cost, complexity, data requirements, availability of documentation, among others. Due to the time taken for changes in transport infrastructure to feed through the economic sphere, it is recommended that the evaluation after the commissioning of the NMT infrastructure takes 2-3 years.
- The Ministry of Works and Transport Non-Motorized Transport Policy states that "The Government will commission a study review on fiscal profile and economic benefits of bicycle use to inform the case for possible reduction or elimination of the duties and taxes currently imposed on bicycles." It further states that "appropriate research studies shall be arranged to gain more information and understanding concerning NMT and its social and economic benefits". The methods suggested in this paper are crucial and good starting point in conducting these intended studies.



Pedestrians using the walking spaces along Namirembe and Nakivubo areas

Internet photo

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ABOUT UACE

UGANDA ASSOCIATION OF CONSULTING ENGINEERS

The Uganda Association of Consulting Engineers is the body responsible for protecting the professional and general business interests of its members in the field of consulting engineering. It was founded in 1993 with a membership of eight member firms; membership has since grown to thirty member firms and one individual consultant.

Internationally, UACE represents Uganda through its affiliation to International Federation of Consulting Engineers (FIDIC). FIDIC is an international umbrella body which caters for both National and Regional consulting engineering associations in respect of engineering professional ethics, standards, client / consultant/contractor relationships, among others. UACE is also a member of Group of Africa Member Associations (GAMA), a regional group-ing of national member associations in Africa.

UACE is fully recognized by both the government and Uganda Institution of Professional Engineers (UIPE). UACE was incorporated as a private company limited by guarantee by the Registrar of Companies in 2001.

AIMS AND OBJECTIVES

- To develop the consulting engineering profession to the benefit of Clients and the public welfare;
- To protect and promote the professional interests, rights, powers and privileges of consulting engineers;
- To network with associations representing the manufacturers, contractors and other businesses impacting on or which are impacted upon by engineering works on matters of mutual interest;
- To offer a forum for engineers to associate together for mutual professional co-operation and advantages as well as for social contact to enhance consultation;
- To advance, transmit and preserve professional knowledge and to stimulate intellectual development among members;
- To strive to continuously to ensure and develop the professional, technical, management and business competence of its members; and
- To promote the use of standard procedures and systems developed and published by FIDIC, where appropriate.

MISSION

The mission of Uganda Association of Consulting Engineers is to develop and promote the consulting engineering industry in Uganda to internationally accepted standards.

UACE ACTIVITIES

In the recent years UACE has been conducting National Consultancy Forums (NCF) that were established with the funding of CrossRoads through DFID. These are organized in conjunction with Uganda Institution of Professional Engineers (UIPE). UACE has so far conducted 12 NCF Trainings and all four FIDIC Modules done on an annual basis.

UACE publishes a quarterly newsletter and organizes luncheons for its members and stakeholders to provide up to date information on topical developmental issues and ideas that will make a difference for our Uganda.

The newsletters are distributed freely to Engineering firms, various ministries, banks, government and non-government organizations and other stakeholders in the country. Lunch-eons are sponsored and free to invited guests.

UACE engages in policy advocacy related issues that are of interest to the Engineering Consultancy Business.

OVERALL STRATEGIC ACTIVITIES

The overall strategic activities to be implemented under the strategic objectives include.

1. Membership and stakeholder Mobilization and training,
2. Community/ public awareness raising and education,
3. Continuous Professional Development Trainings for members,
4. Strategic resources mobilization to further the UACE mission,
5. Building Partnerships, and establishment of viable linkages and collaborations,
6. at formulation, influencing and change levels,
7. Participation in events of Consulting Engineering nature at all levels,
8. Conduct and facilitate research, piloting and replication projects/ efforts,
9. Facilitate exchange of information, ideas, knowledge (learning) and technology,
10. Promote quality service delivery, value for money and public safety.

New fees for building plans

The Ministry of Works and Transport has introduced new charges for building plans, inspection, and occupation permits. According to the Building Control (fees) Regulations 2020, any structure, including a house, will be required to obtain an occupation permit before use. Cities, municipalities, town councils, and districts, will have uniform rates. The fees will be used to scrutinise drawings, plans and documentation, and verification of applications for the building permits. Applications for the building permits will be collected by respective local governments and the funds will be wired to the consolidated funds. Each building permit will expire in five years. When the building is not completed within that time, the entities will be required to renew the permit and pay again. Apart from Class C structures, Class A and B will attract an annual inspection fee, until the building is completed.

Under the new guidelines, every building will be required to have an occupation permit before it is used. Class C buildings, including grass-thatched houses, will have a flat rate of USh30,000. Demolition of Class C building will attract USh2,000,000 in cities, USh1,500,000 in municipalities, USh1,000,000 in town councils and USh500,000 in the rest of the districts.

Classes A and B, an occupation permit will be charged at USh1,200 per square metre in cities, sh950 in municipalities, USh700 in town councils and USh500 in the rest of the district.

Rates charged per building

According to the Building Control (fees) Regulations of 2020, structures are categorised in three classes, each with different rates, according to location. The categories are Classes A, B, and C and they will be charged per square metre.

CLASS A: Covers buildings more than 12 metres above the ground or those with high impact on the environment. This also covers any structures set up in protected areas, such as wetlands, forests, national parks and reserves, among others. It also includes any structures such as homes and buildings, set up on the shores of the lake, river banks and beaches.

It also covers storeyed buildings, including schools, commercial buildings and factories, among others. Class A building permits will be charged at USh2,200 per square metre in cities, USh1,700 in municipalities, USh1,300 in town councils and USh1,100 in sub-

counties and district local governments.

CLASS B covers any structure with more than 30 square metres and not more than 12 metres high. Most residential homes, especially bungalows fall under this category. In cities, Class B will attract USh1,700 for each square metre, USh1,300 in municipalities, USh 1,000 in town councils and USh 950 at district local governments, such as sub-counties.

CLASS C covers any structure of less than 30 square metres. The structures under this class include one-roomed houses otherwise known as mizigo, kiosks, stalls for snacks and the small local restaurants, grass-thatched houses in villages. This class will attract USh 500,000 in cities, USh 300,000 in municipalities, USh 200,000 in town councils and USh 30,000 at local government areas.



CLASS A: Buildings more than 12 metres above the ground or those with high impact on the environment.



CLASS B: Structures with more than 30 square metres and not more than 12 metres high



CLASS C: Structures of less than 30 square metres.

WHY MOST CERTIFIED FIRMS HAVE NOT SIGNIFICANTLY BENEFITED FROM OSHE CERTIFICATION

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Occupational Safety, Health and Environment (OSHE) is a department in any organization that is concerned with the prevention of accidents and injuries, control and reduction of ill human and environmental health and the overall welfare of workers within the workplace. Effective performance of these activities by the safety department further leads to an increase in productivity, profitability and competitiveness among others.

However, so many Ugandan companies especially in the sectors of construction and manufacturing among others are lagging behind in implementation, management and continuous improvement of OSHE. Most companies have gone on to subscribe for international certification such as ISO 45001:2018 (Health and Safety Management Systems) and Occupational Health and Safety Assessment Series (OHSAS 18001:2007) without critically assessing their respective internal weaknesses and strengths that could potentially lead to ineffectiveness of certification. Thus, so many certified companies have not significantly realized a reduction in injuries, accidents, fatalities and an increase in employee involvement in safety management activities among others. Inspection and audit activities by officers from the Ministry of Gender, Labour and Social Development and external practitioners such as Eenersafe Consultants among others indicate a substantially lower level of OSHE effectiveness based on the core elements of a safety management system (below 40%) in certified firms. As a matter of fact, such inspectors and consultants have gone on to wonder how these firms got certified in the first place.

How to benefit from International OSHE certification

In order for firms to benefit from certification, they should first have OSHE as a core department of their business activities for some time (3 to 5 years). i.e. There should be an OSHE manager, designated office, budget and OSHE should be discussed and represented in top management meetings. Continuous top management commitment in terms of provision of time and financial capital resources to support OSHE activities should be effectively understood. This should be coupled with an effective rewards and recognition program that encourages employees to effectively participate in genuine hazard identification, communication and control programs, effective accident investigation and control programs and effective administration of OSHE accountability and consequences. In addition, management and labour should share similar OSHE knowledge, skills, objectives and targets among others at the time of certification. Firms should also continually perform both internal and external inspection and audit activities so as to identify and fill performance gaps. Thus, firms should not just rush into international certification. Local firms are advised to first work with local consultants who can help them establish robust OSHE cultures through training of all employees irrespective of the level, inspection and audit for performance gap identification and technical advice on how to approach certification.



WHO IS ELIGIBLE TO USE THE TITLE OF REGISTERED ENGINEER?

('Eng.')

Due to the misuse of the prefix 'Eng.', several persons have been incorrectly assumed to be on the register of engineers





By Eng. Namugera Ronald
REGISTRAR, ENGINEERS REGISTRATION BOARD

Reference is made to the numerous stories about collapsing buildings in Uganda, the most recent being about the case concerning a building in Makindye which recently collapsed, whilst still under construction. The collapse left 13 people dead and four critically injured. It was reported that the supervising engineer was Christopher Bandi Luhambya. Much as Mr Luhambya might have been the supervisor for the collapsed building, he does not carry the title Registered Engineer or the prefix 'Eng.' before his name as per the requirements of the Engineers Registration Act, 1969 ('Act'). Mr Luhambya is not on the register of engineers.

The Act stipulates that any person that carries the title Registered Engineer or uses the prefix 'Eng.' before his name shall do so only after having their name included on the register of engineers by the Registrar of the Engineers Registration Board (ERB). The Registrar publishes the register of engineers annually in the Uganda Gazette as required by the Act.

To qualify to be included in the register of engineers, a person should: furnish a sufficient guarantee of adequate academic training and knowledge in engineering; have adequate postgraduate training as an engineer, including holding a position of responsibility as an engineer; be a member of the Institution of Professional Engineers (UIPE); and demonstrate that their professional and general conduct is that of a fit and proper person for registration under the Act.

The ERB satisfies itself that a person meets the criteria above through a rigorous process which tests the person's knowledge on a specific engineering subject, with a focus on a specific project on which a person can clearly articulate their role, responsibility and contribution in the exercise of independent engineering and professional judgement. In so doing, a person can demonstrate his/her competence to be professionally registered and practice independently as an engineer in a

field of his/her chosen speciality. In addition, the ERB issues annual practicing licences which help evidence all persons who are eligible to practice engineering in Uganda in a particular calendar year – that is individuals that are considered to still be fit and proper for continued practice of engineering in Uganda.

Through this process, the ERB in collaboration with the engineering institutions, is able to regulate, control and assure the quality of engineering practice in Uganda; promote continuous improvement in the engineering profession; and advise Government on related matters accordingly.

Due to the incorrect use of the prefix 'Eng.', several persons have been incorrectly assumed to be on the register of engineers. This is exacerbated by the fraudulent misrepresentation that is encouraged by members of the public and media, in which they refer to any graduate of engineering with the prefix of 'Eng.' before their name. This has had unintended consequences. Many private developers tend to entrust their projects to such persons – despite the building regulation requirements mandating the use of services of persons who are on the register of engineers.

Without adequate oversight by suitably qualified and competent individuals, there is an increased risk of errors in design, inadequate construction methods or poor material quality not being dealt with in a timely manner. These risks if they materialise undermine the structural integrity of a building thereby leading to collapse either during construction or not long after.

I would like the public, and the media, to be vigilant, and report, on people who misrepresent themselves as Registered Engineers. This is a sanctionable offence under the Act. I encourage all developers to use suitably qualified and competent individuals to oversee their projects. These persons are listed on the register of engineers. To date, there are 1,247 persons in the register of engineers, which can be accessed from the ERB Website at www.erb.go.ug.

Design Ideas

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The interior of a house ought to be a clutter-free, simple and functional space with luxurious ambiance. Such a beautiful output cannot be done overnight. However, the idea of making your home more beautiful can do with proper planning. Every now and then, you will find something that will be a beautiful addition to your house.

Interior designs are somewhat more interesting when decorating your own house. With these ideas of interior design, you can make your house more appealing than what you think. House Interior designing ideas are not difficult to adopt. Be open to new ideas. The design that you don't like may come up above the expectations. All you have to do is determine what your preference of design is.

A house contains many compartments. Design each compartment basing on its use. For instance, when designing the dining room, use decorative designs that will make it yummier to dine in. These can include simple art works showing combinations of different foods.

It is important that you have a good picture in your mind of the kind of house that you would like to have before you start 'interior design training' in your home. These include the size of your house, the colour, the spaces and the formality of the house.

The uniformity of the theme of your interior design is an important consideration, if you are to come up with a favourable output. Whether it is classical or modern, what really matters is that the design meets your criteria.

Floral themes are quite popular and easier to manage because the accessories are readily available. Remember to balance all the elements. If you have floral curtains, balance it with a plain rug. The colours should balance out all the elements. Too many flowered patterns all over the room can actually result in a disaster.

Patterns can also be used to add some drama to the room. Go in for patterned wallpapers or have an oriental rug in the centre. Rough textures can be used in moderation to create some astounding effects.

There are right enough sizes of furniture and displays that you can use to enhance your ideas. Utilize your space well when it comes to the arrangement of the furniture. Place the desk near the window, so that you can utilize the natural light. Use a curved item or furniture in the corner to soften the angle of the room. Avoid placing too many large items all around as you must also consider how comfy it is to walk within the room.



Formality and size

First, determine the formality of your house. Do you love entertaining large groups or do you want to keep things private? Once you have determined this, you can now plan on how big your rooms should be and how you are going to organize them.

With the size of the house in mind, you can now decide on the colours that you can use inside and outside your house, the types of furniture you can use, the furniture placement. Don't forget the outside of your house and the garden decoration. The style outside your house should complement the inside.

Colour

The colours of the room need to be planned with careful consideration to the utility of the room, who would be using it and what you want to convey. Through a colour chart, you can decide whether you would like to go for a monochromatic scheme or complimentary scheme.

As a rule of thumb, using one colour group creates a feeling of harmony and continuity while using too many colours creates an abruptness in the mood and space. Using one colour group may seem limiting, but you can enhance the room by using different textures and tones.

Every colour is linked to certain emotions. Loud colours for the bedroom area may actually cause you to lose your sleep beauty. Dark colours can make any room look smaller. Light colours can help a compact room appear larger. You can go in for

warm colours for the living room and the kitchen. Such warm colours are lively and can make a person feel energetic. Cool colour schemes create a calm feeling and are preferred for the bedroom area.

Space

Ideally, you would want your house to appear spacious as opposed to cramped. You can create a feeling of a large space in your house by using lighter colours, using one colour group and by using large mirrors. Other things to take note of are allotting space for furniture against the wall and for movement around it and avoiding furniture of the same height and width.

Adding too many patterns and textures in the room can further give it a compact look. Therefore, it has to be avoided if you stay in a small house. You can go in for smooth finishes to give it a larger appearance. Avoid using heavily decorated rugs or carpets for such homes.

Lights fixed in the ceiling area tend to make the ceiling look lower, making your room appear smaller. Use a soft light throughout the room, as diffused light is known to create the feeling of space as well.

Focusing on one point in the room draws more attention to that particular area, adding an element of interest to the interiors. When you plan for one large attractive feature, play down the other elements in the room. After all, you do not want all the objects vying for attention. You can get large painting or have some dramatic furniture.



KALANGALA IN A SHELL SAVE OUR SOULS

By Eng Baliremwa Novati Mukajanga

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It is no longer a secret: To unlock Kalangala potential, the district of 84 islands in the mass of water, a proper, safe, articulated, marine transport is inescapable.

The challenge to this transport is in multiple folds: the low population density on the Islands; numerous landing sites/shore villages; the fuel expense; the unsurveyed lake (the last survey was done in 1900-01 by Commander B. Whitehouse R.N. and Mr C.S. Hunter); and transport modes cannibalism.

Very few serious private profit-making investors can have an interest in such a venture. The few who used to link Bukasa Island and Entebbe at Kasenye eg. MV Mkombozi, were forced out of business due to stiff competition with locals who operate wooden crude seafaring boats locally known as *binaara* that cruise at a snail's pace. Evasion of taxes on local produce like timber, charcoal, wood fuels and transportation of the prohibited immature undersize fish too, fanned the smugglers into avoiding the accredited vessels since their are passengers and cargo had to go through security checks before boarding.

Having a safe transport using modern fast-moving ferries like *Dodekanisos Pride*, that cruise at 32knots, can interconnect at least 30 habitable islands within a day. The ferries that cruise beyond 50 knots are unsuitable for islands interconnectivity. The main reason is that the islands are closely located and the lake is infested with many submerged rocks. These rocks are very catastrophic to the maritime

operations and have claimed many lives. The Government of Uganda has no rescue centre to attend to distress calls to save lives during marine-based disasters.

Notwithstanding, the flying boat can augment the delivery of the critically ill patients and expectant mothers very fast to the health centres within Kalangala or on mainland.

A flying boat is a fixed-winged seaplane with a hull, allowing it to land on water, that usually has no type of landing gear to allow operation on land. It uses a purpose-designed fuselage which can float, granting the aircraft buoyancy. Flying boats may be stabilized by under-wing floats or by wing-like projections (called sponsons) from the fuselage.

Since she needs no runway and Kalangala is fully bathed with water mass, this is the best ambulance transport to the islanders. Only a little infrastructural investment at the shore is required, where the craft can easily dock. The vast mass of water and prevailing winds, boost the kissing (landing) and taking off.

More so, since Kalangala is gifted with many tourist centres, cultural, geographical and infrastructural, the flying boat can easily deliver services of transport to the tourists and thus boost the tourism industry.

Tourism can be enhanced once such an aerial transport is embraced. One can have an aerial view of the lake, hills, flora, beaches, etc, before landing



One of the shores in Kalangala

District Internet Picture

on the intended destination on the island.

In order to unlock the hidden potential on water transport, the Uganda Government through the Ministry of Works and Transport (MoW&T) hired a Dutch Consulting firm Ms Marine & Transport Business Solutions (MTBS) of Rotterdam- Netherlands to conduct "consulting services to undertake due diligence for private sector participation in the Lake Victoria Transport Program."

The Government of Uganda (GoU) has plans to:

- (i) remodel and expand the two ports of Port Bell and Jinja pier (including civil works on buildings, structures and necessary dredging, channellization and stabilization works);
- (ii) improve the hinterland road and rail connections (either through the rehabilitation, widening of existing links if feasible or through the construction of new links);
- (iii) refurbish the existing wagon ferries (MV Pamba and MV Mwanga). The MoWT has sought the support of the IDA to fund these objectives, under

the proposed Lake Victoria Transport Program – Phase 1 (SOP 1) for Uganda. As a contribution to the preparation of the LVTP in Uganda, the MoWT has requested support from the Public Private Infrastructure Advisory Facility (PPIAF) to assist in identifying and assessing the different modalities for potential private operation and investment in the transport services on the lake, and the operation of the inland ports.

Out of the four Kalangala's major inland ports, Lutoboka Pier is the only one still operational despite its dilapidated state. Thanks to the long range mono-hull slow moving (max speed 25 knots) craft, MV Kalangala that is scheduled to ply here daily, between Lutoboka at Kalangala and Nakiwogo (Port Alice) at Entebbe. This craft sometimes is dry-docked for major repairs in Mwanza shipyards in Tanzania, thus leaving the passengers stranded. The other landings in Kalangala: Kiwungu at Bukasa Island, Kawafu at Bubeke Island, and Semawundo at Bufumira Island are completely disused. This was after Uganda Railways Corporation grounded their one and only one passenger marine vessel



A typical scene at Bukakatta Landing. In the foreground: MV Pearl sailing to Luku Landing; In the background-Grounded Ferry- MV Ssesse, Submerged jetty, gum pole fenders totally underwater, navigation lights and gangway banisters partly seen

MV Barbus, that was plying these piers in the 20th Century. The landing sites where these piers are located (including Lutoboka) were later to be seized and clandestinely owned by National Forestry Authority (NFA).

Oil Palm Uganda Ltd (OPUL), the subsidiary of BIDCO, had proposed to undertake a construction of a modern waiting bay and a canteen at Lutoboka Pier in 2017 but dropped the idea. The Ministry of Works and Transport was requested to refurbish the jetty and remodel it into multiple quays to accommodate two or more vessels at once. The District Engineer's Office provided the working drawings for the said. Now four years down the road, nothing has been implemented.

On the western part of Kalangala's main island, the district is connected to Masaka District by ferry services that ply between Luku Pier on Kalangala side and Bukakatta Pier at Masaka side. The two ferries in service, like any other mechanical plant,

they are grounded/dry-docked for services, and major maintenance. Though the service provider, Kalangala Infrastructure Services Ltd (KIS) tries his best to ensure the smooth operation of the ferries along that lake (Bugoma) channel, sometimes the demands go overboard when the MV Kalangala that plies Lutoboka – Entebbe route and one of its two ferries is not in operation.

Like adding pepper to a wound, with the increased water levels on Lake Victoria, the landing jetties are submerged thus making the docking and mooring of the ferries on the improvised landing catastrophic to the vessels and the users' vehicles while rolling on and off the ramps of ferries. The time taken too for mooring, rolling on and off the vehicles, passenger off boarding/on boarding and cargo handling is extremely long and moreover in very cautious state.

Currently, Kalangala District is in a "Shell", and it is only the Government that can save situation.

TYRES 2 CAN EXPIRE



I asked our driver, "How many years does a tyre last after being manufactured in a factory?" He looked at me in amazement like a stranger from the moon and asked in a state of fear, "Is a tyre ever unsafe?"

Though he has been driving for ten years now, he did not know that every tyre expires. This is because there is a strong risk of the tyre exploding which can be very dangerous during a journey.

The safe life of some tyres is around four years from the date of manufacture. How does one know the date of manufacture of a tyre?

It is written as four digits on each tyre. The first two digits represent the week of preparation while the last two represent the year of preparation. These four digits are written separately on the tyre, with no alphabet added. Some companies also insert a star sign (*) before and after the four digits.

For example, if these four digits are 4314, it means that the tyre was manufactured in the 43rd week of the year 2014 (third week of November). That is, the tyre will expire in the 43rd week of 2018. So you have to change the tyres after this date.

Some companies do not state the date of manufacture on the tyres. This is a serious crime but it is common in some brands.

Buying tyres without looking at the manufacturing history is like using drugs without looking at the expiry date. But I think it's worse. Because bad drugs can only hurt you. A flat tyre endangers the lives of all passengers.

Now that you know this, go to your car, bend down and check your tyre for manufacture and expiry dates. Keep your loved ones safe.

UACE Members' Directory - December 2020

AIR WATER EARTH LTD CLASS A



Areas of specialization

- Road/Highway design
- Civil/Structural engineering design
- CDM/Carbon audits
- Oil & gas services
- Cleaner production
- Noise and air pollution
- Environmental monitoring, testing and analysis
- Occupation health and safety
- Pollution control equipment

- Solid waste, water & sanitation
- EIA & Environmental audits and site remediation

Plot 27 Binayomba Road, Bugolobi, Kampala, P.O Box 22428, Kampala, +256-414-268466

Email: mail@awe-engineers.com

Website: www.awe-engineers.com

Contact person: Dr. Ronald Musenze

ASSOCIATED ENGINEERING SERVICES (AES) CLASS B



Areas of specialization

- Structural Engineering \design
- Civil/ Structural engineering design-Roads and Bridges
- Supervision
- Project planning and management
- Feasibility studies
- Geotechnical Assessment of Ground Condition for Foundation designs

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Email: stephenkawuma25@gmail.com

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ARMSTRONG CONSULTING ENGINEERS LTD CLASS B



Areas of Specialization

- Structural Engineering – (design, documentation and supervision) of reinforced, pre-stressed concrete, steel, masonry, prefabricated, composite and timber structures
- Bridges and Dams Structural Engineering
- Geotechnical Engineering
- Foundation analysis and Design
- Grading and other soil improvement methods
- Slope stability analysis including that

for Earthquakes

- Deep foundations and designs
- Retaining and Flood walls, sub-surface investigations
- Underpinning Piling

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AURECON ENGINEERING (U) LTD CLASS B



Areas of specialization:

- Infrastructure Consultants
- Civil, Geotechnical & Environmental
- Structural Engineering and Services
- Development Services and Project Management
- Transportation
- Electrical & Mechanical
- Contract Management & Materials

- Information Technology

- Training & Communications

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E-mail: uganda@aurecongroup.com

Web site: http://www.aurecongroup.com

CENTRE FOR INFRASTRUCTURES CONSULTING LIMITED (CIC) CLASS A



Areas of specialization:

- Energy and climate change services
- Planning and Design of water services
- Design and rehabilitation of civil engineering structure
- Traffic and transportation engineering
- Design and Rehabilitation of road works , parking facilities and runways
- District, town council/urban Centre services
- Drainage design
- Surveys, site investigations, materials

and geotechnical investigations

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Web site: www.aurecongroup.com

Contact Person: Dr. Eng. Seith Mugume

COWI (U) LTD CLASS A



Areas of specialization

- Technical assistance
- Design
- Development planning
- Supervision and contract management
- Programme formulation
- Training, capacity building and human resources development
- Master planning and feasibility studies
- Monitoring and evaluation
- Financial and organisational analyses

Plot 3 Portal Avenue, 2nd Floor Crusader House

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E-mail: frgo@cowi.com
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CREEK CONSULT LTD CLASS B



Areas of specialization

- Technical audits / Value for money assessments for on-going and completed infrastructure projects;
- Project/Programme Reviews (both Mid-Term and End-Term Evaluations);
- Conducting technical evaluation of bids and tenders;
- Undertaking administrative reviews on behalf of Procurement bodies; people advisory services (training in engineering audit for non-engineering personnel such as financial accountants), job

evaluations, recruitment of personnel, development, review of HR manuals etc.);

- Local Governance Capacity assessments, training / mentoring

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E-mail: info@creekconsult.com

Contact Person: Eng. Patrick Rusongoza

EMSULT ENGINEERS LTD CLASS B



Areas of specialization

- Energy consultancy
- Electrical engineering consultancy
- Power distribution and supply systems
- Access control, alarm and lightning protection systems
- Solar systems
- Audio-visual and Voice and data systems
- Mechanical engineering consultancy
- Sewerage, water supply and waste water systems

- Air conditioning, gas supply and fire-fighting systems
- Lifts, hoists and escalators

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Contact Person: Eng. Nelson Mukwaya

ENG. NSIMBE JOSEPH - INDIVIDUAL

Areas of specialization

- Project management and supervision
- Contract administration/management
- Transportation engineering and design
- Procurement/tender preparation
- Infrastructure inventories and condition assessments

- Mentorship and trainings for engineering students, graduate engineers and technicians

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ENG. PETER J. MAGAMBO - INDIVIDUAL

Areas of specialization:

- Urban and Rural Water Supply
- Water Resource Management
- Roads – trunk, urban and rural
- Hydro-power Generation and Water for Production Dams
- Power transmission and distribution lines
- Storm Water Drainage
- Waste Water Management
- Solid Waste Management
- Structural and Foundation engineering
- Institutional Building Structures
- Infrastructure for housing and industrial

- estates
- Institutional strengthening and restructuring
- Technical Auditing
- Policy and Guidelines formulation
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- Email: p.magambo@kaggapartners.com
- Website: www.kaggapartners.com
-

FBW UGANDA LIMITED CLASS A



Areas of specialization

- Surveying
- Architectural services
- Engineering services
- Project management
- Telecommunication
- Consultancy services

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Website: www.fbwgroup.com

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FENCON CONSULTING ENGINEERS LTD CLASS A



Areas of specialization

- Architecture and engineering design and construction supervision.
- Project management and advisory services
- Quantity surveying and land surveying
- Physical planning and development - master planning
- Water supply system design, wastewater management sanitation engineering
- Tendering and procurement services
- Environmental studies and management
- Real estate development

- Roads and bridges
- High ways and transportation

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Website: www.fenconconsulting.com

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GAUFF CONSULTANTS (U) LTD CLASS A



Areas of specialization

- Transport, roads and railways
- Water supply and sanitation
- Town and regional planning
- Agriculture and Rural Development
- Environment
- Industrial Engineering and Architectural Design
- Signaling and Telecommunication

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INFRASTRUCTURE PROJECTS LIMITED (IPL) CLASS A



Areas of specialization

- Structural engineering
- Civil engineering
- Bridges
- Geotechnical investigations,
- Materials testing
- Project planning and management
- Tender and contract documentation
- Construction supervision and management
- Engineering audits

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262728

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Contact person: Eng. Kagyina Karuma

INTERFACE CONSULTING LTD CLASS A



Areas of specialization

- Water supply and sanitation infrastructure development (urban and rural)
- Market infrastructure development
- Hydropower infrastructure maintenance
- Infrastructure programme review development and management
- Institutional development and capacity

building (for relevant sector agencies)

Plot 64 Kanjokya Street, Kololo, P.O. Box
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KAGGA & PARTNERS LTD CLASS A



Areas of specialization

- Urban and rural water supply
- Water resource management
- Hydro-power generation and irrigation dams
- Waste water management
- Solid waste management
- Roads - trunk, urban and rural
- Structural and foundation engineering
- Infrastructure for housing and industrial estates

- Institutional strengthening and restructuring

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KAIZEN AFRICA LIMITED CLASS B



Areas of specialization

- Roads and highways
- Structures and buildings
- Water supply and public health
- Environmental and social sciences
- Geo-technical and hydrological engineering

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KOM CONSULT LTD CLASS A



Specialization

- Roads and highways
- Structures and buildings
- Water supply and public health
- Environmental and social sciences
- Geo-technical and hydrological engineering

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MBW CONSULTING ENGINEERS CLASS A



Areas of specialization

- Engineering infrastructure development
- Strategic planning
- Institutional development and capacity building
- Social-economic and governance studies
- Structural and civil design and construction
- Supervision
- Energy development and environmental impact Studies
- Water supply system design and sanitation
- Engineering
- Highways and transportation
- Project management

- Environmental engineering
- Master plan preparation for Infrastructure
- Development including community mobilization
- Management of expectations in infrastructure
- Development
- Project formulation

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M & E ASSOCIATES LTD CLASS A



Areas of specialization

- Electrical Engineering (Building Services -
- Electrical Installations, Fire Alarms, Security
- Alarms, Communication Systems, Computer
- Networks, Audio and Visual Systems etc.)
- Mechanical Engineering
- Domestic, Industrial, Institutional and
- Commercial (Air conditioning, Ventilation,
- Refrigeration, Plumbing, Drainage systems,
- Water supply, Firefighting, Lifts, and

Kitchen equipment and all related services).

- Civil and Structural Engineering
- Water Resources and Environmental
- Engineering

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MULTI-KONSULTS CLASS A



Areas of specialization

- Electrical and mechanical engineering building Services
- Energy studies
- Agriculture schemes
- Environment studies
- Electric power systems planning and load studies

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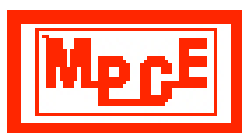
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multikonsults@multikonsults.com

Website: www.multikonsults.com

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MULTIPLAN CONSULTING ENGINEERS CLASS B



Areas of specialization

- Water supply
 - Roads and infrastructure
 - Bridges and structures
 - Sewerage and waste water treatment
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Website: www.multiplanug.net

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NEWPLAN LIMITED CLASS A



Specialization

- Oil and Gas engineering services
- Energy engineering services
- Architecture and building services
- Highways and transport
- Engineering surveys
- Cadastral surveys
- Valuation surveys
- Environment and social services
- H3SE
- Logistics

- Legal Services
 - Project Management and Training
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+256 312261149

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Website: www.newplangroup.com

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PROESS LTD CLASS B



Areas of specialization

- Feasibility studies and detailed engineering design
- Tender administration
- Contract management
- Resettlement action planning
- Environment and social impact assessment
- Dispute avoidance and resolution
- Survey works (topographical surveys, cadastral survey, engineering surveying, hydrographic surveying, etc.)
- Geotechnical and material investigations
- Training in occupational health and

safety

- Internal bid evaluations
- Independent parallel bid evaluations
- Technical staff recruitment
- Quality assurance
- Project and programme reviews
- Technical auditing

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Mob. +256 782 819688
E-mail: info@proess.ug

Contact Person: Eng. Daka Michael

PROFESSIONAL ENGINEERING CONSULTANTS LTD CLASS A



Areas of specialization

- Transport engineering
 - Water and waste water engineering
 - Geotechnical and materials engineering
 - Surveying, mapping and GIS
 - Environmental engineering
 - Structural engineering
- Plot 9 Makajja Close (off Ntinda II Rd),
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+256 393 513 019
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Website: www.pec.co.ug

Contact Person: Mr. Bonnie Kalanzi Nsambu

PROMAN CONSULT LTD CLASS A



Areas of specialization:

- Project Development and Management
- Project design and management
- Construction supervision
- Feasibility and economic studies
- Provision of professional engineering advice
- Planning studies

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jmuchiri@proman.co.ug
Website: www.proman.co.ug

Contact Person: Eng. John Muchiri

PROME CONSULTANTS CLASS A



Areas of specialization

- Project development and management
- Project management
- Water supply and sanitation engineering
- Highways engineering
- Civil and structural engineering
- Transportation planning and designing
- Electrical and mechanical industrial engineering
- Quality assurance
- Environmental engineering
- Geotechnical engineering
- Surveying and mapping

- Institutional and individual industrial capacity development

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Website: www.promeconsult.com

Contact Person: Eng. Hubert Robert Kibuuka

SEKA ASSOCIATES CLASS A



Specialization

- Project management and planning
- Civil and structural engineering
- Site and service schemes
- Highways and transportation engineering
- Water supply and waste disposal
- Geotechnical services
- Materials testing
- Architectural, quantity surveying and electrical Engineering (in close

association with other firms)

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Contact Person: Eng. John Senfuma

TECHNOLOGY CONSULTS LIMITED CLASS A



Areas of specialization

- Building consultancy services
 - Land surveying
 - Information technology
 - Civil works
 - Expert technical services
 - Project management
- 1st Floor, room 200 CEDAT Building,

Makerere University
P. O. Box 26690, Kampala, Uganda
Tel: +256 414540618
Mob: +256 782979459
Email: techcons@teco.co.ug
Website: www.teco.co.ug
Contact Person: Mr. Emmanuel M. Kirumira

TB3 GLOBAL LTD CLASS A



Areas of specialization

- Institutional development and capacity building
- social-economic and governance studies
- Architectural, structural and civil design and construction supervision
- Energy development and environment impact studies
- Water supply system design and sanitation engineering
- Highways and transportation
- Project management
- Health, safety and environment engineering
- Master plan preparation for general

- infrastructure development including
- Management of expectations in infrastructure development
- Project formulation
- Land surveying mapping
- Geotechnical surveys

Plot 102 Sir Apollo Kaggwa Rd, Makerere-Ki-koni
P.O Box 6780, Kampala, Uganda
Tel: +256 783102941/ 782 952470
email: table3ms@gmail.com
Website: www.tb3.co.uk
Contact Person: Eng. Michael Ojok

TEQ CONSULTS LIMITED CLASS A



Areas of specialization

- Project management
- Contract management
- Claims management
- Cost control management
- Technical assistance in development of Contract documents
- Master plans and feasibility case studies
- Valued engineering

Plot 752 Hill Rise, Bunamwaya, Off Zana
P. O. Box 9771, Kampala, Uganda
Business Phone: +256 794754579, 77096606
E-mail: info@teqconsult.net
Web Page: www.teqconsult.net
Contact Person: Eng. Peter L. Otteskov

TRIO CONSULTANTS LIMITED CLASS A



Areas of specialization

- Development and management of road
- Building and water projects
- Training/capacity building
- Infrastructure Planning
- Feasibility studies
- Preliminary engineering designs
- Detailed engineering designs
- Supervision of engineering works
- Geotechnical investigations
- Structural health monitoring
- Engineering surveys

- Forensic engineering
- Traffic studies
- Tender and procurement assistance

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P. O. Box 10256, Kampala - Uganda
Business Phone: +256-414-664242
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E-mail: info@trioconsultants.com
Website: www.triconsultants.com
Contact Person: Eng. Dr. J Mwakali

UB CONSULTING ENGINEERS LTD CLASS A



Areas of specialization

- Materials and Geo-technical engineering
 - Structural & bridge engineering
 - Highways engineering
 - Hydrology and hydraulics
 - Sociology
- Plot 3, Nasuuna Lane, Masanafu, Lugala –
Rubaga Division; P. O. Box 22509, Kampala,

Uganda
Business Phone: +256 (0) 200908255 or
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414-581938
E-mail: ub@ubconsulting.co.ug
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UGANDA ASSOCIATION OF CONSULTING ENGINEERS

Representing the professional concerns and general business interests of members in the field of consulting engineering.





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general business interests of its members in
the field of consulting engineering**

The Secretariat, Uganda Association of Consulting Engineers

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