

MAPPING A SUSTAINABLE PATH FOR CONSULTING ENGINEERS AMID GROWING ECONOMIC CHALLENGES

Introduction

In the last few years the various messages raised and challenged by CESA's Past Presidents included the following themes:

- Partnering for growth in 2011
- CESA Engineers Unquestionably ethical in 2012
- In 2013 we confirmed that Sustainability is Everybody's Business
- In 2014 we emphasized that sustaining the consulting engineering profession is key to growing the economy
- In 2015 we identified that socio-economic challenges should and can be addressed through sustained infrastructure investment

At the start of 2016 we are faced with ever-growing challenges which have a significant impact on our profession as consulting engineers and our role in society. Our country is challenged by social instability, ever increasing unemployment, infrastructure that is experiencing strain, slow economic growth and a depreciating rand. All of these external influences have a profound impact on society at large and with all of these constraining elements, it appears that consulting engineers have to do more with less. So how do we '**Map a sustainable path for consulting engineers amid growing economic challenges?**'

The State of Affairs in South Africa

At a recent CESA Infrastructure Indaba held in November 2015, the following opportunities for the construction and infrastructure sectors were identified:

- SA is the most developed construction market in Africa second only to Nigeria
- Large-scale capital expenditure plans by SOC – Transnet, Eskom, SANRAL, PRASA
- NDP to guide infrastructure construction
- Port and rail investment to continue due to commodity resources
- Housing investment especially housing stock to raise living standards
- SA is still the gateway to the SADC region



Some of the negative sentiments identified included: low GDP, load shedding curtailing economic growth, an infrastructure spending backlog of R850bn on planned infrastructure spend over the next 3 years and a further R4 trillion required over the next 15 years (assuming the current infrastructure expenditure pattern), lack of good governance, labour strikes and the ongoing drought as challenges facing the SA economy.

Despite this the Country is making strides in the achievement of National Development Goals with significant infrastructure investment made to date and planned in key sectors such as Transport, Power, Water and ICT. About 26% of total capital investment is made by the private sector and 74% by the public sector.

Although the South African government has accomplished much in the last few years, finances are sorely lacking to meet the growing infrastructure challenges. At the 2015 Infrastructure Indaba, three possible avenues were explored to meet these challenges:

- Private sector should increase its investment in public infrastructure development
- Maintenance of existing infrastructure to ensure that the existing infrastructure remains serviceable for the duration of its design life and beyond
- Addressing inefficiencies in the Supply Chain Management system and more especially as it applies to Consulting Engineers and Built Environment Professionals in general

However, with the recent downgrading of South African bonds to levels just above junk status, SA's economic sustainability is also being questioned.

Service delivery protests in various parts of the country has become the norm and the recent water shortages is of great concern. Critical municipal infrastructure are also failing due to lack of timeous maintenance and investment, at critical periods.

Within this environment, can SA's vision, encapsulated in the National Development Plan, actually be delivered on? Or, is it pie in the sky, maybe a pipe-dream? The NDP has established the development pillars for our country. Although the implementation may seem to be slow, it provides a much needed plan and clearer direction for investment in the future and government's priorities.

The **technical capacity** to deliver on the NDP is also being queried. In 2005 research commissioned by the Department of Labour indicated that about 75% of all engineering professionals were employed in the private sector. The limited engineering capacity in the public sector is also a concern and budgets go unspent; sometimes purely due to the lack of proper planning of infrastructure investments and the capacity to manage these projects properly.

In 2012 ECSA reported that the average age of professional engineers is 38,3 years. The then SAICE President reported that the age profile of engineers in central government employment shows a young workforce, with 50% below the age of 35, and only 29% over 49." This age profile indicates limited experience, but more heartening, a growing number of young engineers to sustain the industry.

Transformation in the industry is currently also a focus area. Negotiations towards updating the current BBBEE scorecard for the Construction Sector Charter Council has been ongoing since 2013 with no agreements reached on any of the elements by the end of 2015.

Just looking briefly at the state of affairs, there is good news and bad news for consulting engineers.

- The economic outlook, coupled with limited technical skills, appears to be crippling and stifling the economy.
- The project pipeline looks good, but can it be delivered?
- The profession is aging, but there is also significant growth in the number of young engineers.

We have to ask ourselves if things will get worse. The influence of local government elections in 2016 will have a significant impact on service delivery priorities in some municipalities. In such a constraining economic environment, infrastructure development and the associated job creation opportunities, becomes more critical.

What is the role of the consulting engineering in this environment?

- Deliver more with less
- Form partnerships
- Remain active and vigilant advocates
- Transformation
- Positioning CESA to support the industry.

Where to from here?

Delivering more with less

The critical role that the engineering industry, in particular the consulting engineering profession, has in the development and functioning of SA's economy cannot be underestimated. The current economic outlook and concerns about the public sector's ability to finance and undertake massive infrastructure investments requires the profession to assess its skill sets and ability to meet the challenging environment:

- Innovative approaches are needed to support the public sector with project development and procurement challenges.
- Multi-professional teams are required to respond to all the challenges (social, environmental, financial and technical) that might be experienced on large infrastructure projects.
- The fast-tracking of young engineers with potential through the development process is critical.
- Improved bids for consulting engineering services and cost estimates will make it so much easier for public officials to facilitate procurement.
- We have to get it right the first time and be vigilant about quality control.
- The role of technical specialists and experts cannot be underestimated. This requires continuous research and development to be funded and supported.
- Operating and sustaining the consulting engineering industry in a competitive procurement environment.

CESA's membership, currently representing 540 firms employing just over 24 366 staff, who collectively earn a total fee income of R23.4 billion a year, is well-positioned to respond to this

challenge, but requires a commitment to change. Business as usual will not be sufficient. In particular, we will continue to be assessed whether we can deliver quality projects on time and on budget while meeting project specifications.

This is a serious challenge to the sustainability of engineering consulting firms. Profit margins reported in the CESA Bi-Annual Economic and Capacity Survey of June 2015 indicate that the larger firms are experiencing profit margins of just 9%. The majority of firms expect margins to weaken, and sentiments stated point to an industry under higher levels of financial distress. These challenges influence the consulting engineer's ability to produce quality work and we have to guard against this and maintain CESA's ethos of quality engineering.

Forming partnerships

At the 2015 Infrastructure Indaba, the role of CESA forming strategic partnerships with industry role-players was discussed. In such a challenging environment, it is imperative that we form partnerships with those role players that we share similar values with and those that will assist in furthering our strategic objectives. In the past and going forward CESA has, and continues to, establish secure and strategic alliances with voluntary associations representing the built environment professions and business organisations.

In meeting the development challenges of our country, CESA has to partner with Government. Our industry represents a particular skills set that is required to further the country's social and developmental goals. Unlocking opportunities identified, requires us to partner with government. This is particularly relevant in developing an improved procurement environment for the consulting engineering profession.

- CESA has recently met with National Treasury and signed a MoU to assist with the monitoring of the implementation of the Standard for Infrastructure Procurement and Delivery Management.
- The Office of the Chief Procurement Officer also announced at the Infrastructure Indaba National Treasury's intention to separate the procurement of consulting engineering services from the Procurement of Goods and Services.

In addition, one of the major challenges facing the project delivery pipeline is the development of appropriate Project Scope and Specifications as part of the procurement of consulting engineers. CESA has been engaging with the Department of Public Works to find ways of supporting their project delivery offices. This can be achieved through the placement of retired engineers to prepare project specifications, as well as provide the mentoring support that is so critically needed to develop young engineers. It must be acknowledged thought that this is perhaps only an interim option. Other options include supporting Project Management Offices, secondments from consulting engineering firms and the use of consulting engineers, etc. However, ultimately, the employment of the qualified and registered engineers in senior engineering positions in government is the solution.

CESA is geared to assist with these challenges. One of the critical focus areas that CESA has to address is establishing and solidifying our relationships with our strategic partnerships and make it clear that CESA is there to partner with Government as their trusted advisor.

Partnerships with our International Federation of Consulting Engineers or FIDIC, as well as the regional block of the Southern African Development Communities and the rest of Africa, is of utmost importance to further ensure quality and uniformity in engineering consulting practice and creating a conducive business environment for working within Africa.

Active Advocacy

Although a significant emphasis is placed on partnering with government, CESA is the voice of consulting engineering and should continue to play an active advocacy role in the larger built environment profession.

- In our MoU with National Treasury we agreed to use our national footprint towards monitoring compliance with Treasury prescripts for infrastructure and recognition of procurement competencies.
- We have to identify corruption, blow the whistle and work with authorities towards eradicating it.

- CESA's legal fund was established to respond to legal issues that affects industry at large and not act on behalf of any individual firm involved in contractual disputes with clients.
- Engage with government about technical standards, procurement practices and overall best practice for consulting engineers.

As the voice of consulting engineers, CESA is required to boldly speak up about matters that affect our industry.

Transformation

We cannot ignore the fact that this country came from a sordid past which excluded a large number of people from participating in the mainstream economy because of the colour of their skin. We cannot pretend it didn't happen and therefore a concerted effort from all of us is required to address the imbalances of the past thus creating a South Africa that everyone is proud of. Transformation is an imperative, the time for a tick box exercise is over. Transformation is the right thing to do and we need an open attitude to embrace it and must not see it as a burden or develop what is called 'resistance to change tendencies'.

CESA is an organization with varied membership that includes firms established prior to 1994, new upcoming firms established thereafter, small firms and larger firms. Furthermore, our membership also includes multi-national firms that have established a footprint in Africa through the merging with and the acquisition of local firms.

One of the strategic goals of our country is the economic empowerment of previous marginalized groups. As consulting engineers we practice in the construction sector that has the potential to significantly contribute towards the transformation and economic empowerment agenda of our country.

Since 1994, and with the development of the Construction Sector Code, CESA and our membership base has been involved in the transformation of the industry. Apart from the

social and moral obligation to transform the profile of our industry, this was also guided by the introduction of the broad based black economic empowerment scorecard.

CESA, as part of the construction sector, is currently involved in follow-up negotiations to update the scorecard. Unfortunately to date, no resolution has yet been reached. The transformation of business and our sector in particular, is of strategic importance. Adherence to BBBEE is the way we do business in South Africa and CESA and our members are positioning ourselves to meet this opportunity.

Transformation is not a short-term action. To be sustainable, we need to take a long-term view and ensure that the necessary building blocks are in place to realise this. Having said that, we need to start accelerating the pace of transformation. We need not view transformation, rightfully so or wrongfully so, as a loss of business but how we do business in South Africa. CESA will continue to actively address transformation issues so that our member firms reflect the demographics of our country.

Supporting the industry

I have mentioned four particular focus areas for CESA to actively participate and engage at all levels over the next 2 years. This is delivering more with less, forming strategic partnerships, active advocacy and driving transformation.

CESA has a role to play, to engage and represent our members at the highest level possible to get our views heard. To do so, we have to ensure that CESA and our Directorate are strategically positioned to do so. The Directorate and Committee Members are tasked to focus on the following key areas.

- Liaison committees with clients, especially with national departments and state-owned companies, is where the hard work is going to lie. These committees must be reconstituted where they have been failing to ensure ongoing communication and relationship building with clients.
- The School for Consulting Engineers was created as a mechanism to provide increased and focused learner opportunities to the young staff of our members. This is also a

particular focus area for the Directorate going forward. The School has been making contact with members to determine their needs to ensure that the courses are targeted and relevant. Our members are urged to liaise with the school in this regard and to support this initiative.

- The staff of the directorate will also be targeting strategic partnerships with other voluntary associations in the built environment and in business groups to strategically position CESA in the construction sector.
- Our membership base also employs various engineers with expert skills sets that are required in growing CESA's influence. We will be targeting these individuals to possibly make use of their skills to assist CESA in furthering our objectives.
- CESA has established a Transformation Committee and this committee is challenged with the task of guiding CESA's transformation initiatives. This committee is also tasked with supporting CESA's negotiating team in the Construction Sectors' Charter Council's alignment process around the CSCC scorecard.
- CESA continues to work on procurement matters that are challenging our members. This is an ongoing task, and will require active participation, especially with the recent announcement by National Treasury to separate the procurement of consulting engineering services from the procurement of general goods and services.

Conclusion

In conclusion, at CESA we are clear about our role as "The Voice of Consulting Engineering" and being a Trusted Advisor to our Clients. We know what we have to do. Previous presidents have laid the foundations for the path we have to follow now.

Going forward, we are going to follow the path, be clear about the end destination, and do what we have to do, but do it really well. This is the aim for 2016. In doing so, it is a targeted approach and leveraging all our skills to do so and ultimately ensure that we as consulting engineers in SA contribute towards South Africa's social and economic growth.

I thank you, our members for their loyalty and support, my fellow board members for the strategic vision and support, and most importantly the media for assisting us to raise our voice and urge us all to let our voices be heard in promoting engineering excellence.